Utah Labor Commission's Supplemental 2024 Impairment Rating Guides®

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This guide is to be used for all impairment ratings done in Utah and is a supplement to the American Medical Association's Guides to the Evaluation of Permanent Impairment 5th Edition for workers' compensation purposes.

Per R612-300-9. Permanent Impairment Ratings. A. Utah's 2024 Impairment Guides.The "Utah 2024 Impairment Guides" are incorporated by reference and are to be used to rate a permanent impairment not expressly listed in Section 34A-2-412 of the Utah Workers' Compensation Act. B. American Medical Association's "Guides to the Evaluation of Permanent Impairment, Fifth Edition." For those permanent impairments not addressed in either Section 34A-2-412 or the "Utah 2024 Impairment Guides," impairment ratings are to be established according to the American Medical Association's "Guides to the Evaluation of Permanent Impairment, 5th Edition

These Guidelines are to clarify the definitions and practices contained in the *AMA Guides 5th Edition* from a unique workers' compensation context. The purpose of this work is to add more refinement and uniformity to the impairment process. It is produced by medical providers skilled in occupational medicine and impairment rating for workers' compensation, with input from regulators and benefit administrators.

To provide rating methodology that facilitates consistency throughout the Guides, the Utah impairment committee reviewed, simplified and updated these guides within the Functional, Anatomic, and Diagnostic model as listed in the spine, upper and lower extremity chapters.

Acknowledgments

The report is the result of many dedicated people with a desire to improve the functioning of the workers' compensation system. In particular, the contributors share a passion for delivering fair compensation to

injured workers in Utah. Fairness has many dimensions, but this committee has a particular interest in, and competency on, the reliable and valid measurement of bodily impairments due to work injury.

This handbook is produced by the Utah Labor Commission's Impairment Rating Committee. Since its creation in 1993, this committee has been led by Alan L. Colledge, MD, Medical Director of the Labor Commission. Special thanks are extended to the following individuals who played a particularly important role in the drafting and publishing these Utah 2024 Impairment Guides:

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Chapter One: Introduction

1.0 Introduction

The concept of compensating people for injuries received "on-the-job" has been present for many years. Even pirates who roamed and plundered in the 7th Century had their own elaborate code of "compensation."[1] It wasn't until the early 20th century that "workers' compensation" became a legislated right in the United States. Each jurisdiction has been designed to ensure the worker prompt, but limited benefits and to assign to the employer sure and predictable compulsory liability insurance with established parameters.

The principal components that have received legislative expression in all systems include: (1) A statutory program. (2) Expeditious resolution of disputed issues. (3) Limited liability without fault: (Since workers' compensation is a no-fault insurance program, determining negligence or blame is often irrelevant). (4) Automatic benefits which include: (a) Medical treatment coverage including: medical care, services and supplies as necessary to cure or relieve the effects of an on-the-job injury. This means that the employee does not incur any deductible or out-of-pocket expense for the medical treatment of a work-related injury or illness. Medical benefits are considered a lifetime benefit as long as the medical treatment is necessary to continue to address a work-related injury or illness. (b) Indemnity payments replacing wages while the injured employee recovers from an industrial injury and/or reaches medical stability. All states have varying formulas for the calculation of these indemnity payments, which are often tax-free. (c) Death benefits, providing weekly payments to the surviving spouse and dependent children of a worker whose work-related injury results in death. Burial and funeral expenses are also paid. (d) An impairment settlement giving compensation to an injured worker for permanent physical loss from a work-related injury (i.e., scars, disfigurement, amputation, etc.), according to a defined compensation schedule. The most severely injured workers are those who are left with some permanent loss, qualifying for an impairment rating.

A summary of Utah's workers' benefits are listed in the "Employee's Guide to Workers; Compensation": Employee's Guide to Workers' Compensation

In some countries, government insurance programs cover occupational and non-occupational disability with the same administrative and benefit laws. However, in other countries, particularly Australia, Canada, and the United States, workers' compensation uses its own distinct approach to the compensation of occupational disability. By 1949, all 50 states had adopted some form of workers' compensation legislation.[2] The scope and amount of payments for these agreed upon services are determined by the individual state and in some cases by federal law. In these places where separate workers' compensation laws exist, there is commonly a legal process for qualifying and quantifying certain injuries for a class of benefits for "permanent impairment." This process is distinct from other social insurance programs covering disability, private disability insurance, or damage measurements made in connection with civil legal proceedings. Thus, the measurement of total disability for US Social Security disability qualification has no relation whatsoever to a permanent total impairment rating in workers' compensation. Private disability insurance claims adjusters, while they may ask about permanent physical loss, are mainly concerned with vocational and job performance issues.

Workers' compensation is a system based on a heterogeneous collection of national and sub-national (individual state and provincial) laws. There are no binding national or international standards for how workers' compensation impairment ratings are to be done. A few programs are listed to illustrate the wide range of government insurance systems in the United States alone that have their own rating systems for occupational disability:

- Black Lung Benefits

[1] Journal of American Insurance, 2nd Quarter, 1986.
[2] U.S. Chamber of Commerce, "1997 Analysis of Workers' Compensation Laws," 1997.

- Longshoreman and Harbor Workers Program
- Railroad Workers Program
- Veterans Benefits
- Federal Employees Compensation Act (civilian)

Knowing that it has its own distinct system, with enforced rules of adjudicating claims, may prevent the physician/rater from consciously or unconsciously misapplying techniques or methods used for evaluating other kinds of permanent injury or disability. This guide focuses on issues specific, or particularly common, to an occupational injury.

Physicians who perform impairment ratings should understand the basic and universal principles of workers' compensation law to respond to the clinical and procedural demands of rating the permanent residual consequences of work-related injury or disease. This introduction covers this essential background. In addition, it explains the purposes and use of this supplemental guide.

Studies have shown that those who incur impairments have a significant impact on their future wage income.[3] [4] [5] As with the other benefits, there are significant differences between the states on the value of settlement amounts and the *methodology utilized* to calculate total disability benefits. [6] [7] [8]

The inconsistencies inherent with current rating systems used to calculate injured worker's residual loss or impairment can be frustrating for patients, physicians, risk managers, state administrators and payors.[9] One of the major problems with impairment ratings is the lack of consistency between physician raters of impairments.[10] [11] [12] Unfortunately, this variability becomes a source of dispute, which is both costly to the employer, insurer, and state regulator and stressful to the employee.

Reducing variability in calculating impairment ratings has significant benefits to the workers' compensation system including:

- Greater equity across injured workers, regardless of who rated their impairment.
- Speedier payments to workers because of fewer questions and challenges by claims adjusters.
- Resolution of injured workers frustrations, which facilitates the moving forward with their lives.
- Fewer disputes and litigation because the rules for calculating an impairment rating are clear and consistently applied.
- Lower administrative costs.
- Comparable statistics permitting jurisdiction comparisons, tracking, and research.
- Evolution of an international standard for jurisdictions to consider.

The *AMA Guides 5th Edition*, for reasons explained below, fall short of a complete guide for workers' compensation. Indeed, there is much diversity among the states in the fundamentals of how and when

[3] Economic Outcomes of Injured Workers with Permanent Impairment, Texas Workers' Compensation Research Center, 3:27 Aug 1995, p.1.
[4] Workers Return To Work Patterns For Permanently Impaired, Texas Monitor, Vol. 1 No 4, Winter, 1996, p.1-3.
[5] Peterson M A, Reville R T, et al. Compensating Permanent Workplace Injuries: A Study of the California System, Institute for Civil Justice, RAND MR920ICJ, 1998, 228 pp.
[6] Burton, J F, "Workers' Compensation Benefits Paid to Workers," John Burton's, Workers' Compensation Monitor, Vol. 9. No 2, Mar Apr 1996.
[7] Swezey, CL. Workers' compensation law. Occupational medicine, Ladou, Joseph editor. 1990 Appleton & Lange. East Norwalk, Connecticut. p.17.
[8] U.S. Chamber of Commerce: Analysis of Workers' Compensation Laws - 1988 Edition, ISBN No. 0-89834-5.
[9] Spieler EA, Barth PS, Burton JF Jr, Himmelstein J, Rudolph L. Recommendations to guide revision of the Guides to the Evaluation of Permanent Impairment. JAMA. 2000;283:519-523.
[10] Gloss DS, Wardle MG,Reliability and validity of American Medical Association's guide to ratings of permanent impairment. JAMA. 1982;248:2292-2296
[11] Nitschke JE, Nattrass CL, Disler PB.Reliability of the American Medical Association Guides' model for measuring spinal range of motion. Spine. 1999; 24:262-268.
[12] Clark WL, Haldeman S, Johnson P, et al: "Back Impairment and Disability Determinations, Another Attempt at Objective, Reliable Rating," Spine, 1988, 12:332- 341.

benefits should be paid. This is especially true concerning approaches to measuring and compensating the injured worker for the lasting, or permanent consequences of an industrial injury.

1.0a. Utah's Guides

The Utah Guide and the *AMA Guides 5th Edition* are tools that can be used to convert medical information about permanent losses into numerical values, i.e. impairments. These impairment values are to be used for permanent rating purposes only and are not to be used for causation determinations. As the long list of critical papers in the literature will attest, the calculation of impairment is not an objective science and is based largely on consensus rather than scientific evidence (Holmes, 2002, Gloss & Wardle, 1982; Disler, Nattrass & Nischke, 1999; Clark et. al, 1988). Many US states, including Utah, do not recognize the complete *AMA Guides 5th Edition* for rating impairment, and have instead developed their own internal standards or guides for raters.

Below is a brief introduction to the *AMA Guides 5th Edition*, followed by a statement of how this supplement interacts with impairment rating guides published by the AMA. In 1993, the Labor Commission's Workers' Compensation Advisory Council commissioned the Impairment Rating Committee to address the needs of workers' compensation claims payers and system administrators in rating permanent impairment. It was believed that by improving the rating criteria physicians were required to utilize would reduce variability for the impairment ratings. It was also noted that experience and a certain skill level was necessary to accurately and consistently calculate impairment ratings. The Committee's mission was to evolve toward the best practices in rating methodology. It was not the committee's purpose to be unduly critical of the existing impairment systems, as all attempts to classify and communicate about this rather complicated problem, are fraught with difficulty. However, the inherent weaknesses necessitated the development of a system, which represented current medical science and was as objective as possible, given current technological limitations. In 1994, after reviewing different rating systems, utilizing examples and different unique models, the committee developed and the state of Utah adopted the American Medical Association's *4th Edition of the Guides,* with the Utah impairment rating system to be used with the *AMA Guides 4th Edition for certain impairments.* These Utah Impairment Guides were updated in 1997, 2001 and in 2006, clarifying ratings for spinal conditions, upper-extremity peripheral neuropathies, temporomandibular joint dysfunction, dental loss and painful upper and lower extremity conditions.[13] Since adopting these Utah impairment guides, litigation over impairment ratings has reduced to less than 1%.[14] This reduction of litigation has assisted in making Utah the least costly state in the nation for a manufacturer to obtain workers' compensation insurance,[15] while maintaining the medical fee schedule above the national average.[16]

1.0b. American Medical Association Impairment Guides

Originally published as a series of articles in the *Journal of the American Medical Association*, the *AMA Guides* have been revised periodically, and are now in the 6th Edition. With the 6th Edition, there was a new paradigm shift in methodology utilized for the calculation of impairments, causing a wholesale reduction of anywhere from 3% to 50% in valuations of ratings.[17] As shown in Appendix A, 35 US states reference some version of the AMA Guides 5th Edition in their workers' compensation law (Brigham, 2002). Other sources site a slightly different usage (AMA, 2000; Bavon, 1993). For these reasons, the Labor Commission decided not to adopt the 6th edition.

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[13] The 1997 Utah Labor Commission's Impairment Rating Guide. Published by the Utah Labor Commission, P.O. Box 146610, SLC,UT, 84114-6610.

[14] As per Joyce A. Sewell, Director, Div of Industrial Accidents, Utah Labor Commission.

[15] Workers' Compensation State Ranking, Manufacturing Industry Costs and Statutory Benefit Provisions, Actuarial & Technical Solutions, Inc, 1998 Ed. Pg. 5.

[16] Burton, J. Workers' Compensation Benefits Paid to Workers, John Burton's Workers' Compensation Monitor, Vol. 9, No 2, April 1996.

[17] 17 SEP 28, 2018 Controversy Over the AMA Guides Sixth Edition Chris Brigham talks about the sixth edition of the AMA Guides Impairment and whether it is a valid measure of disability ratings in the workers' compensation setting. https://legaltalknetwork.com/podcasts/workers-comp-matters/2018/09/controversy-over-the-ama-guides-sixth-edition/

Most jurisdictions that utilize some edition of the *AMA Guides* for injured workers' impairment ratings note unnecessary physician/rater reporting variability in the impairment rating for what appears to be the same physical loss. This variability creates unnecessary patient anger, suspicion, hostility, litigation, and costs. This variability is attributed to several non-medical factors. These factors include the individual examining physician's lack of knowledge or skills, difficulties in differentiating subjective complaints from objective findings, confusion between the concepts of impairment and disability, bias, poor quality medical reports, difficult causation analysis questions, and the apportionment processes. Members of the Utah Impairment Rating Guide Committee believe that by improving the rating criteria, physicians/raters can improve fairness and resolution for injured workers, reduce variability and thus reduce unnecessary overall expense to the regulators, payors and the patient for the impairment ratings.

1.1 Legal and Historical Background

Providing claims information can be extremely frustrating and time consuming for physicians/raters and their support staff. This section reviews legal and administrative issues to equip physicians and their staffs to better respond to the demands made on their time and medical expertise by disability and workers' compensation claims processors. It explains benefit types and nomenclature.

1.1a. Overview of Occupational Benefits

The categories listed below describe the four broad divisions of claims and their common abbreviations for benefits payable under Utah workers' compensation.

- Medical-only
- Temporary disability, for wage loss indemnity (TTD)
- Permanent disability, divided into Permanent Total (PT) and Permanent Partial Impairment (PPI)
- Death (including burial)

Most workers' compensation injuries require only medical attention and do not involve lengthy time away from work, nor do they leave residual effects on the worker. In the United States, "medical-only claims" are about 72% of all compensable injuries (Telles, 2001). These are claims that do not involve compensation for lost work time, only medical expenses related to an injury. The percentage of medical-only claims is a function of the quality and speed of medical care, the length of lost time required before an injury qualifies for indemnity benefits, and how scrupulously employers report claims as workers' compensation.

Under Utah's workers' compensation law, when the injured worker has missed 3 days of work, he/she is eligible for wage indemnification, with the amount determined by a set state formula. Wage loss benefits continue until the disabling condition either permits a return to work, or reaches a plateau where healing ends and no significant improvement is likely. When this occurs, the injured worker may be entitled to another class of benefits to compensate for any permanent residual loss, i.e., PPI.

In summary, several different classes of benefits are paid under workers' compensation. Permanent injury claims account for a very large share of benefits paid. These benefits are largely controlled by medical judgments made by physicians and communicated in reports to claims adjusters and workers' compensation administrators. Physician-raters must be cognizant that Utah statutes administrative rules, and case law are Utah specific and at times may seem impractical as one reviews the relative severity of injury for purposes of quantifying benefits to be awarded for permanent injury.

1.1b. Measuring Permanent Loss from Injury

The impairment rating process for workers' compensation is part of a larger process of claim adjudication. Medical issues and reports drive the settlement of most claims. The medical issues can be divided into three phases:

1. Verifying that a specific injury or disease has occurred.
2. Providing information to help establish the causation of the injury.
3. Measuring the permanent residual losses secondary to the injury.
4. Establishing the worker's capability.

Number 3 is technically referred to as "impairment rating" and number 4 latter addresses disability, or the impact of an impairment on someone's life and function. Confusion between the two concepts is rampant.

Some of the varying definitions of "impairment" found in the literature:

- Alteration of an individual's health status that is assessed by medical means (J.B. Moore, Disability Systems).
- A medical assessment of a patient's physical or anatomical deficit or loss use of function, represented by a percentage value for each deficit or functional loss, expressed in terms of the whole person (Gerald Lipinsky, "Spinal Impairment and Disability").
- Alteration of an individual's health status; a deviation from normal in a body part or organ system and its functioning (AMA Guides 5th Edition).
- Any loss or abnormality of psychological, physiological or anatomical structure or function. (World Health Organization).
- An impairment that results from anatomical, physiological, or psychological abnormalities, which can be shown by medically acceptable clinical and laboratory diagnostic techniques (US Social Security Administration).

Disability, on the other hand, addresses a patient's inability to perform specific and important activities of daily living or work. In some contexts, this might be ordinary household tasks, in others, schoolwork. For occupational disability the focus is on:

1. The tasks that the patient was previously able to do in their job or profession, and, if pre-injury work is impossible,
2. The alternative tasks that a person might perform.

Disability and impairment seldom match closely. Classic examples of the lack of correspondence of physical and economic/job limits are:

- A piano player losing a little finger would be rated at 5% whole person impairment. He/she may also be considered 100% disabled from the preinjury occupation, and experience a 50% loss of earning capacity (because there are other related careers). A physician could lose the same finger, be rated at 5% whole person impairment, and yet have little or no impact on his/her earning capacity.
- An attorney could lose his or her eyesight and receive a total impairment rating in a given system. Yet, with proper accommodation, he/she might not lose his/her pre-injury job, or suffer any loss of income.

A given physical loss would have dramatically different effects on a worker depending on:

- Occupation
- Education
- Age
- Language skills
- Geographical opportunities
- Employer's flexibility to modify job duties

One of the ongoing challenges in workers' compensation is to define how permanent physical loss is calculated in a defensible and consistent way. The *AMA Guides are* the most common methodology

utilized to calculate impairment.[18] The *AMA Guides 5th Edition* adopts the widely accepted view that impairment is a deviation in a body part or organ system and its functioning. ***Impairment is not equivalent to disability.***

The consequences of any given limitation are difficult to generalize to the whole working population. Moreover, these consequences may differ dramatically from what the injured worker was able to do before the injury. Similarly, how these consequences relate to other jobs, other activities of daily life, or personal happiness varies considerably.

1.1b.i. Impairment / Disability Relationship in Workers' Compensation

An impairment rating is the threshold determined for certain benefits needed to calculate the financial compensation for the residual deficits from the injury or event, after an injured worker reaches medical stability.

1.1b.ii. Medical Care Responsibility

Medical care for a workplace injury continues for the life of the claimant. A medical bill expires, if not submitted to the carrier within a year of the date of service.

1.1b.iii. Medical Evidence Needed in the Calculation of Impairment Ratings

The goal of the 2024 *Utah Guides* is to improve the uniformity and accuracy of impairment ratings. The standard impairment schedule considers percentage of loss on an arbitrary continuum, with 0% reflecting no residual or loss and 100% whole person impairment equaling a state approaching death. As an example, a complete amputation of the ring or little finger equals 5% whole person impairment. For the complete loss of an eye, one is awarded 24%, and for the complete loss of a leg at the hip, 40% is awarded.

As stated in Utah Code 34A-2-102(8), "impairment'" is a purely medical condition reflecting any anatomical or functional abnormality or loss. Impairment may be temporary or permanent, industrial or non-industrial. Utah Administrative Rule R612-7-3 sets forth the method for rating.

For rating all impairments, which are not expressly listed in Section 34A-2-412, the Commission adopts Utah' s 2024 Impairment Guides as published by the Commission for all ratings of impairments on or after May 1, 2024. For those conditions or exclusions not found in Utah's 2024 Impairment Guides, the AMA 5th edition Guides are to be used.

R612-300-9 incorporates by reference the "Utah 2024 Impairment Guides" and the *AMA Guides 5th Edition.* The Labor Commission issues clarification of these guides from time to time. Substantive changes to the guides are only made after public notice is given and hearings held pursuant to the provisions of the State's Administrative Procedures Act (Title 63-46a, Utah Code Annotated).

According to Utah Code 34A-2-412 (C), in rating extremities, "permanent and complete loss of use shall be deemed equivalent to loss of the member.

Utah has a permanent statutory benefit found in 34A-2-412 for permanent partial disability. These benefits have been used as a template for the Utah Guides. Most of these statutory conditions are for stand alone impairments such as amputation and vision loss. These are listed as "weeks" with 312 being the maximum or 100% impaired.

[18] Some jurisdictions have separate processes for: (1) making a finding of impairment, and (2) calculating the impairment rating. Findings of impairment are done by physicians/raters. Insurers then rate the impairment by applying state adopted rating standards to the findings. Thus, the technical aspects of coming up with an impairment "score" for benefit calculation is an administrative function.

1. Upper extremity arm
    a. Arm and shoulder (forequarter amputation) 218
    b. Arm at shoulder joint, or above deltoid insertion 187
    c. Arm between deltoid insertion and elbow joint, at elbow joint, or below elbow joint proximal to insertion of biceps tendon 178
    d. Forearm below elbow joint distal to insertion of biceps tendon 168

2. Hand
    a. At wrist or midcarpal or mid metacarpal amputation 168
    b. All fingers except thumb at metacarpophalangeal joints 101

3. Thumb
    a. At metacarpophalangeal joint or with resection of carpometacarpal bone 67
    b. At interphalangeal joint 50

4. Index finger
    a. At metacarpophalangeal joint or with resection of metacarpal bone 42
    b. At proximal interphalangeal joint 34
    c. At distal interphalangeal joint 18

5. Middle finger
    a. At metacarpophalangeal joint or with resection of metacarpal bone 34
    b. At proximal interphalangeal joint 27
    c. At distal interphalangeal joint 15

6. Ring finger
    a. At metacarpophalangeal joint or with resection of metacarpal bone 17
    b. At proximal interphalangeal joint 13
    c. At distal interphalangeal joint 8

7. Little finger
    a. At metacarpophalangeal joint or with resection of metacarpal bone 8
    b. At proximal interphalangeal joint 6
    c. At distal interphalangeal joint 4

8. Lower extremity Leg
    a. Hemipelvectomy (leg, hip and pelvis) 156
    b. Leg at hip joint or three inches or less below tuberosity of ischium 125
    c. Leg above knee with functional stump, at knee joint or Gritti-Stokes amputation or below knee with short stump (three inches or less below intercondylar notch) 112
    d. Leg below knee with functional stump 88

9. Foot
    a. Foot at ankle 88
    b. Foot partial amputation (Chopart's) 66
    c. Foot mid metatarsal amputation 44

10. Toes
    a. Great toe
        i. With resection of metatarsal bone 26
        ii. At metatarsophalangeal joint 16
        iii. At interphalangeal joint 12
    b. Lesser toe (2nd -- 5th)
        i. With resection of metatarsal bone 4
        ii. At metatarsophalangeal joint 3

iii. At proximal interphalangeal joint 2
iv. At distal interphalangeal joint 1

c. All toes at metatarsophalangeal joints 26

11. Miscellaneous
    a. One eye by enucleation 120
    b. Total blindness of one eye 100
    c. Total loss of binaural hearing 109

PERMANENT PARTIAL DISABILITY UPDATE WITH AMA 5TH EDITION
Alan Colledge, MD 2-18-10

	Utah Schedule		**AMA 5th Edition**		
REGION A. Upper extremity	Scheduled Weeks	Whole Person 312 wks %/312	AMA Whole Person % Book value	AMA Whole Persons Weeks % x 312 wks	AMA Upper Extremity % 60%/WP
1. Arm (refer to fig. 2, p 18-20) a. Arm and shoulder (forequarter amputation)	218	70%			
b. Arm at shoulder joint	187	60%	60%	187	100%
c. Arm-deltoid to biceps insertion	178	57%	57%	178	95%
d. Forearm to carpometacarpal	168	54%	54%	168	92%
2. Hand a. At wrist or midcarpal or mid metacarpal amputation	168	54%	54%	168	90%
b. All fingers except thumb at metacarpal-phalangeal joints	101	32%	32%	101	54%
3. Thumb (ref. to fig. 7, pg 24) a. Including metacarpal or at metacarpal-phalangeal joint	67	21%	22%	69	36%
b. At interphalangeal joint	50	16%	11%	34	18%
4. Index finger (refer to fig 17, p30) a. Metacarpal-phalangeal joint or with resection of metacarpal	42	13%	11%	20	18%
b. At proximal interphalangeal joint	34	11%	8%	25	14%
c. At distal interphalangeal joint	18	6%	5%	13	8%
4. Middle finger (refer to fig 17, p30) a. Metacarpal-phalangeal joint or with resection of metacarpal	34	11%	11%	34	18%
b. At proximal interphalangeal joint	27	9%	8	25	14%
c. At distal interphalangeal joint	15	5%	5	13	8%
5. Ring finger refer to AMA fig 17 p30) a. Metacarpal-phalangeal joint or with resection of metacarpal	17	5%	5%	16	9%
b. At proximal interphalangeal joint	13	4%	4%	13	7%
c. At distal interphalangeal joint	8	2.5%	3%	6	5%
6. Little finger refer to AMA fig 17 p30) a. Metacarpal-phalangeal joint or with resection of metacarpal	8	2.5%	5%	16	9%

b. At proximal interphalangeal joint	6	2%	4%	13	7
c. At distal interphalangeal joint	4	1.3%	3%	6	5
REGION B. Lower extremity (refer to table 63, page 83)	Scheduled Weeks	Whole Person 312 wks %/312	AMA Whole Person % Book value	AMA Whole Persons Weeks % x 312 wks	AMA Lower Extremity % 40%/WP
1. Leg a. Hemipelvectomy (leg, hip, and pelvis)	156	50%	50%	156	
b. Leg at hip joint or three inches or less below tuberosity of ischium	125	40%	40%	125	
c. Leg above knee with functional stump, at knee joint or Gritti-stokes amputation or below knee with short stump (three inches or less below intercondylar notch)	112	36%	36%	112	
d. Leg below knee with functional stump	88	28%	28%	87	
2. Foot (Syme) a. Foot at Ankle	88	28%	25%	78	
b. Foot partial amputation (Chopart's)	66	21%	18%	56	
c. Foot mid metatarsal amputation	44	14%	16%	50	
3. Toes a. Great Toe (i) With resection of metatarsal bone	26	8%	8%	25	
(ii) At metatarsophalangeal joint	16	5%	5%	16	
(iii) At interphalangeal joint	12	4%	2%	6	
b. Lesser toe (2^{nd} – 5^{th}) (i) With resection of metatarsal bone	4	1.2%	2%	6	
(ii) At metatarsophalangeal joint	3	1%	1%	3	
(iii) At proximal interphalangeal joint	2	.6%	0.4%	1.2	
(iv) At distal interphalangeal joint	1	.3%	0.2%	.6	
c. All toes at metatarsophalangeal joints	26	8%	9%	28	
4. Miscellaneous. Vision to conform with the AMA, pg 218-222) a. One eye by Enucleation, (combine with 10% for deformity, AMA)	120	39%	24%	75	
b. Total blindness of one eye	100	32%	32%	100	
c. Hearing (to conform with ANA guides, pg 228) Total loss of binaural hearing	109	35%	35%	109	

Physicians should express a rating as a Whole Person impairment, stating the specific derivations used in calculating the rating, i.e., % hand to % of upper extremity to % whole person. Physicians must report the impairment to the nearest whole number, rounding up or down, i.e., 12.3% = 12%; 12.5. % = 13%.

To provide consistency, the physician/rater should understand that the Labor Commission is generally first looking for physicians to provide objective and consistent information about the physical limitations, losses, or abnormalities of the body and its function, of an impairment. Utah cases generally do not require an assessment of employability, and thus is outside of the medical expertise.

As a general rule, not all harm, damage to, or suffering of the injured worker from a covered injury is compensated under the law. This is different from civil law, or tort, where these issues are a major part of lawsuits. Workers' compensation is a system of laws that departs from the principles of tort law. In

exchange for prompt and predictable payments for covered injuries, it limits or excludes subjective or difficult-to-quantify harm to the worker. Once understood, this tradeoff between speed and predictability for compensation can help to make the benefit limits of workers' compensation seem more reasonable and fairer.

In Utah, the use of the impairment rating provided by the medical practitioner is converted by law into "weeks of disability payments."

Physicians/raters must remember that the range of benefit outcomes is beyond the role of medical practice, and impairment ratings should not be manipulated by the physicians/raters to adjust for perceived low or high benefit payments. Physicians/raters are only expected to calculate the physical loss or impairment rating based on their clinical observations and the impairment guides that are mandated.

The physician/rater should understand that establishing fair compensation for lasting or serious harm to a worker is a mix of medical and legal issues. This report does not attempt to judge the rationale or adequacy of benefits and how Utah administers them. The remaining components of this document outline the general principles for the physician/rater to perform an impairment rating and report.

1.1b. iv. Problems with Impairment Ratings

There are two standards by which rating systems, including instructions and guides to raters, should be evaluated. The first is consistency of ratings across injuries and raters. The second is the validity of the ratings. A departure from either of these weakens the workers' compensation system.

Consistency is essential. Without it, impairment ratings become a source of dispute. Claimants can often get upset when they learn what they are going to receive in compensation for the ongoing residual symptoms workers' compensation benefits are seldom generous and are often arbitrary in the level of compensation for different injuries. When workers discover that peers with similar injuries in different administrative systems, (FELA-Personal Injury) received significantly more money than they were offered under worker's compensation, they become even angrier. Their confusion and anger often motivates them to seek legal counsel, to formally complain to the regulatory agency, to complain to their elected representatives, and to launch a legal action. All of these reactions impose unnecessary financial costs and administrative burdens on the WC administrative system, delay the worker from receiving their often much needed benefits and impede the worker in adapting to the loss and moving on with life. Formal legal disputes within a workers' compensation system are a sign of breakdown of the unique workers compensation exclusive remedy.

Perfect reliability is unachievable. Even the same physician/rater may produce a slightly different rating on the same fact situation from time to time. Cross rater variation is unavoidable given different backgrounds, training and clinical practices. However, as a practical goal for workers' compensation, the same diagnosis and same patient characteristics should produce ratings that are consistent within a tolerable range.

Validity is the second test of a good impairment system. This means that the rating assigned to a given bodily loss should measure what it intends to measure. If the goal is to quantify loss of use and function due to the injury, then the rating should have a logical and factual basis. A second goal might be that the ratings for different injuries bear a logical and defensible ordinal or cardinal ranking. The most common scale is the percentage of loss to the body as a whole. Using this, the relationship between individual body part losses should receive reasonably related percentages for whole body loss. Thus, the loss of a single phalanx of a finger should be less than the loss of the whole finger, which in turn is less than the loss of a hand, and the loss of a hand is less than the loss of the arm.

The reliability and validity of impairment ratings can be improved by clear guidance to physician/raters in three areas:

1. The scale or measures of impairment to a given body part.
2. How to perform or record measurements that support the scale given in (1) above.
3. How to convert loss to a specific body part to loss to the body as a whole.

In the remainder of this chapter guidance is provided in each of these areas based on the consensus of practitioners with considerable experience in occupational medicine and the administration of impairment ratings.

1.2 General Guidance for Physician/Raters

Workers' compensation law places great deference on medical evidence and judgment in administering permanent disability benefits. Except in some isolated cases, the qualification of an individual for a permanent injury benefit must be triggered by a physician's written opinion as to a qualifying event, condition, or rating. Rating applies to those cases where the physician/rater must quantify the degree or extent of some injury or impairment that triggers a benefit. This quantification process is often complex, requiring careful measurement and thorough evaluation. The process is not simply empirical. Expert judgment is often called for.

The following principles apply to all impairment ratings. Specific injuries, to the upper or lower extremity and to the spine, will be treated in later chapters.

1.2a. Duties of Rating Physician/Rater

The impairment rating should be based on the objective condition of the patient along with the credible subjective findings. The credibility of patient representations should be interpreted in light of their consistency across time and accordance with objective findings. Also, subjective findings should be considered reasonable in those workers who have residual loss resulting from an occupational injury.

In making these interpretations and judgments, the physician/rater has duties and obligations that are distinct from the duty of care as a treating physician. The impairment rating is not considered a portion of any medical service previously rendered and is not included in routine post-operative care. Unless treating physicians are uncomfortable with this process, they are encouraged to declare the patient stable, and, if applicable and if they are qualified, to calculate an impairment rating. The skills involved in assessing impairment are two-fold: clinical assessment and criteria application. An experienced attending clinician may be unfamiliar with the correct process of rating impairment.

The patient's history should be based primarily on the individual's own statements rather than secondhand information. The physician/rater should consider information from sources, including medical records.

1.2b. What Metric to Use?

Numbers help third parties, such as attorneys, administrative law judges, and claims adjusters understand the extent of a patient's residual limitations from injuries. A numerical rating is a bridge between medical issues and legal determinations of fault, compensability, or benefit entitlements. For example, a claims adjuster may not understand the clinical significance of a medical report citing "L4/L5 disc herniation with L5 radiculopathy," but with a percentage rating in hand he/she can determine statutory benefits as they are converted to weeks. In Utah this is a rule that converts impairment percentage into weeks of indemnity compensation.

One of the sources of error and frustration in impairment rating is the measurement system to be used. percentages of loss make intuitive sense. However, there is sometimes doubt about whether the percentage applies to a limb, organ, or the whole body.

- The 100 percentage-point scale that is used by the *AMA Guides 5th Edition* illustrates this challenge. It is difficult to form a consensus on how badly impaired an organ or body system must be to merit a 100% impairment rating.
- The *AMA Guides 5th Edition* speaks of "a state that is approaching death" as the standard for 95-100% Whole Person Impairment.

1.2c. Medical Report at Stability

The medical report at "stability" is a comprehensive report prepared after the injured worker is medically stable, sometimes referred to as Maximal Medical Improvement (MMI), medical stability, permanent and stationary or fixed state of recovery. For those involved in therapy, the RSA Form 221 is objective evidence of when functional stability has been reached. It is important to note that medical stability may not be used to terminate necessary medical care. The date of medical stability and the date when the worker qualifies for an impairment rating can be two separate dates. Impairment rating is not to be calculated before it is legally appropriate.

1.2d. Reporting of Impairment Ratings

The impairment rating should be based solely on the objective maximum condition achieved by the patient. The calculation of an impairment rating is considered reasonable and necessary for those workers who have residual loss secondary to an industrial event. The impairment rating is not considered a portion of any medical service previously rendered and is not included in the routine post-operative care. There are special code numbers for payment for this service. Unless treating physicians are uncomfortable with this process, they are encouraged to complete the case, declare the patient stable and if appropriately educated in the calculation of an impairment rating. The attending physician is the person most knowledgeable regarding the condition, progress and final status of the injured employee. Therefore, the treating physician is encouraged to render the final impairment rating.[19]

If, for any reason, the attending physician prefers not to make this evaluation, they should notify the insurance carrier. The treating physician may then refer the patient to another physician/rater, or request that the carrier refer the patient to a physician that has training and expertise with the patient's condition and Utah's impairment rating methodology. The physician needs to ensure that the examinee understands that the evaluation's purpose is medical assessment, not medical treatment. However, if new diagnoses are discovered, the physician has a medical obligation to inform the requesting party and individual about the condition and recommend further medical assessment.[20]

When the physician/rater is uncertain about which method to use in the calculation of an impairment rating, or if more than one method can be used, the physician should calculate the impairment rating using different alternatives and choose the method or combination of methods that gives the most clinically accurate impairment rating.[21]

The history should be based primarily on the individual's own statements rather than secondhand information. The physician/rater should consider information from sources, including medical records; however, caution should be used in the interpretation of subjective information. It is not appropriate to question the individual's integrity. If information from the individual is inconsistent with what is known about the medical condition, circumstances, or written reports, the physician should simply comment on the inconsistencies.[22]

Because it serves administrative and legal purposes, the final report of the physician/rater should include the following information:

[19] Ibid, p. 18.
[20] Ibid, p. 18.
[21] Ibid, p. 526-27.
[22] Ibid, p. 374 p. 524.

1.2d.i. Diagnosis

The physician/rater needs to clearly state the diagnosis as substantiated from the medical record and clinical assessment. The physician/rater should also define, as clearly as possible, the relationship of the diagnosis to the industrial event (causation). It is recognized that in many cases, specific pathologic diagnoses are not clearly evident. The physician/rater has the responsibility to provide a diagnostic impression that is as closely correlated to the clinical findings as possible.

1.2d.ii. Stability

Maximal Medical Improvement (MMI), medical stability, permanent and stationary or fixed state of recovery" refers to a date when the period of healing has ended and the condition of the worker is not expected to materially improve or deteriorate in the ensuing year.[23] [24] [25] [26] [27] It is important to note that medical stability may not be used to terminate necessary medical care. The date of medical stability and the date when the worker qualifies for an impairment rating can be two separate dates. Impairment rating is not to be calculated before it is legally appropriate.

This situation can be best understood with the example of low back pain treated non-surgically. If after 8 weeks of treatment, the patient's condition has reached a plateau, and it is determined that what can be done to improve his/her condition has been done, he/she would be at MMI and if the patient has not already returned to work, temporary disability benefits (TTD) cease. However, it is obviously too early to determine that this individual has a permanent lifetime loss. It would be appropriate to have the patient wait at least six months to determine the issues of permanency.

1.2d.iii. Calculation of Impairment

Using these *Utah Guides* (or the *AMA* 5th Edition *Guides* for those conditions not found in the *Utah Guides*), the examiner should calculate the residual impairment, based on clinical findings established during the medical examination and information found in the medical records.

1.2d.iv. Apportionment

Impairment ratings must be apportioned between the current injury and prior impairment conditions as outlined in the Apportionment section of this guide.

1.2e. Time Periods for Certain Conditions to Reach Medical Stability

Those who perform impairment ratings must be aware that for some conditions there is a certain time period that must pass before a condition is considered to be at MMI. Suggested guidelines are listed below:

[23] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association 2001, p. 19.
[24] Ibid, p.19.
[25] Booms v. Rapp Const. Co. 720 p. 2d 1363 Supreme Court of Utah, June 6, 1986.
[26] Page 315, *AMA Guides 4th Edition*
[27] 1997 Utah's Impairment Guides, Page 3

- **Soft Tissue Spinal Complaints**

  The majority of patients with soft tissue spinal complaints recover without any permanent residual loss, or "impairment."[28] [29] Therefore, before considering any patient with residual soft tissue, developmental and degenerative spine complaints for an impairment rating, the patient's symptoms must have been present for a minimum of six consecutive months.

- **Range of Motion**

  Often, maximum range of motion is not obtained until one year from the time of the accident or surgery. Loss of motion is not to be considered permanent until it is demonstrated that the patient is at least six months (or applicable statutory limits) from accident or surgery, and has reached a plateau in his/her progress.

- **Upper and Lower Extremity Painful Organic Syndromes**

  These schedules are for musculoskeletal conditions characterized by pain (and weakness) with use of the affected member, attributed to a lesion in the soft tissue (capsule, ligament, tendon, fascia, muscle) and documented by clinical findings that have been present for longer than six months.

1.2f. Capabilities Assessment

When requested, the physician/rater should discuss any restriction of work activities, and give clear examples. For example, if after knee surgery, the injured worker has no restrictions other than downhill skiing, that restriction should be clearly stated. The impairment rating report should reflect how the actual impairment impacts daily living. The physician/rater should make a statement as to the current functional capacity of the patient as it relates to the impairment's impact on their activities of daily living, ADLs.

It is the physician/rater's responsibility to determine if the impairment results in functional limitations and to inform the employee and the employer about an individual's abilities and limitations. The physician/rater should state whether or not there are work restrictions or work limitations. Work limitations are based on limited capacity. Work restrictions are based on risk of harm. Deciding to work or not to work based on subjective patient tolerance for the activity in question is best left as a patient's decision, and is not a basis for physician/rater-imposed work restrictions or comments about work limitations.

It is the employer's responsibility to identify and determine if reasonable accommodations are possible to enable the individual's performance of the essential job functions. Physicians/raters may be asked to suggest possible reasonable work accommodations. If so, physicians should identify physical abilities considering all body systems available. This information facilitates the patient/employer relationship for return to work. Functional capability evaluations (FCE) should be only performed when requested and must be pre-authorized. The validity of functional capacity testing depends on the adherence to standardized protocols, reliability of results, appropriateness of the test's construct, correlation with established criteria, sensitivity and specificity, content coverage, and the ability to predict future outcomes. It is essential for test administrators to follow established guidelines and for researchers to continue to study and validate these tests to ensure their accuracy and usefulness.

1.2g. Future Medical Treatment

Depending on the individual case, the physician/rater may be required to state a prognosis and the need for any possible required medical treatment in the future as a direct result of the industrial accident. This

[28] Andersson GBJ, Svensson HO, Oden A. The intensity of work recovery in low back pain. *Spine.* 1983:8:880884.
[29] Nachemson AL. The natural course of low back pain. White AA, Gordon SL, eds. *Idiopathic Low Back Pain.* St Louis: CV Mosby, 1982.

information is critical in those cases that may require lifetime medical benefits for the establishment of financial reserves. For this reason, the physician should be as specific as possible. This would also certainly be the case if a lump sum settlement of the claim was being negotiated by the claimant and payer.

1.2h. Impairment Ratings for Conditions not found in the Utah 2024 Edition or the AMA 5th Edition

As always, the physician/rater should use the appropriate parts of the guides to evaluate impairment. If information in the guides is lacking, the physician/rater may derive an impairment percentage based on the severity of the effect and describe in detail their methodology for calculating an impairment rating. In certain instances, the treatment of an illness may result in apparent total remission of the injured workers signs and symptoms, yet it is debatable whether the worker has actually regained the previous status of normal good health. Such examples would be individuals with deep vein thrombosis requiring chronic anti-coagulants for more than a year, or organ transplant recipients who were treated with immunity suppressing pharmaceuticals. In these cases, the physician may increase the impairment estimate by three percent.[30]

1.2i. Impairment Rating for those patients who decline Surgical, Pharmacological, or Therapeutic Treatment

If the patient declines recommended treatment for an injury or illness, that decision either decreases or increases the estimated percentage of the individual's impairment. However, the physician/rater is to make a written comment in the medical evaluation report about the suitability of the therapeutic approach, and to describe the basis of the individual's refusal. The physician will need to address whether the patient is medically stable without treatment and estimate the permanent impairment that would be expected to remain.

1.3 Administrative Issues

While not directly related to a medically correct impairment rating, certain administrative issues need to be understood by the physician/rater to ensure prompt handling of benefits to the patient and payment to the provider. Even a highly professional impairment rating founded on excellent medical reasoning may encounter administrative problems if the above procedures are not followed closely. This results in delay of payment to the worker and to the medical provider and additional calls and administrative work between the agency and provider's office. Utah has its own idiosyncratic forms and completion rules. The following are some principles that apply to rating permanent impairment In Utah.

1.3a. Who is to Perform Impairment Ratings

Because the impairment rating process includes the medical issues of diagnosis, determining permanency, and determining the need for ongoing or future medical care, only licensed physicians should perform impairment ratings.

When the treating physician is unable to, or is uncomfortable in, performing the impairment rating, it is recommended that one who has training and expertise with the patient's condition and the Utah impairment rating methodology should perform the rating. Being "Board Certified" to do impairment ratings has no credence within the Utah Workers' Compensation System.

1.3b. Forms

[30] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association; 2001. p. 20.

Utah does have specific forms for reporting various impairment ratings. These include Spine, Upper and Lower Extremities and are found within these guidelines. These forms facilitate and standardize how impairment ratings are to be done and reported. The physician/rater is also encouraged to use the hand and upper extremity charts from the AMA 5th Edition when calculating impairment ratings from this section.

1.3c. Billing for Impairment Ratings

The physician/rater is not entitled to reimbursement under the codes listed in the following section if his/her report does not conform to the established criteria as outlined in these guides. It is required that the physician/rather doing the rating list their licensure after signature, so that payer is fully aware of the credentials of the individual who has performed the rating.

1.3d. Billing for Impairment Ratings Done by the Treating Physician

The current AMA Current Procedural Terminology, CPT, book lists specific codes for impairment ratings. When submitting impairment ratings to the insurance carrier and/or employer for billing purposes this is the book to use. An impairment rating is considered an extension or continuation of the treatment process, which includes the usual evaluation and management of the office visit, a review of the medical records, diagnostic studies, and current physical findings on which the rating is based, and generation of a written report.

The Utah fee schedule requires these codes be utilized depending on the complexity of the case, the time required in the evaluation and report writing, and the examiner's time. Because the current Resource Based Relative Value Scale (RBRVS) system does not apply a unit value to Impairment codes, Utah has adopted the following unit values.

Schedule 2

Code	Procedure	RVU
99455	Work related or medical disability examination by the treating physician that includes: completion of a medical history commensurate with the patient's condition — performance of an examination commensurate with the patient's condition — formulation of a diagnosis, assessment of capabilities and stability, and calculation of impairment — development of future medical treatment plan — and completion of necessary documentation/certificates and report. **To be used for each 30 minute increment**	2.0

Schedule 3

Billing for Impairment Ratings Done by Someone Other than the Treating Physician

Code	Procedure	RVU
99456	Work related or medical disability examination by another physician, other than the treating physician that includes: completion of a medical history commensurate with the patient's condition — performance of an examination commensurate with the patient's condition — formulation of a diagnosis, assessment of capabilities and stability, and calculation of impairment — development of future medical treatment plan — and completion of necessary documentation/certificates and report. **To be used for each 30 minute increment**	**2.65**

(i.e., Rating Physician or Other Rater)

1.3e. General Rules for Calculating Impairment Ratings

The following rules are provided in order for the evaluator to properly execute an impairment rating. These rules can be applied to all systems of the body.

1. The final impairment value, whether the result of a single or combined impairment, shall be rounded off to the nearest whole number.

2. There is no difference between dominant or preferred side and the non-dominant extremity.

1.3f. Rules for When to Combine

In these Utah Guides, we combine (not add) all of the ratings of a region--digit, hand and upper extremity-- prior to converting to the next higher level, the hand-upper extremity-whole person. The same process is used in the lower extremity.

The impairment of an upper extremity is never to exceed the amputation value, which is 60% whole person. Nor is the impairment of the lower extremity to exceed the amputation value, which is 40% whole person. All impairments for the body cannot exceed 100% of the whole person.

Ankylosis: If multiple ankylosis are present in the same joint or area, use the largest figure for the rating.

Spinal impairments for multiple regions are combined.

1.4 Summary

Consistent and prompt payment of benefits to injured workers is a universal goal of all workers' compensation systems. Workers due permanent partial disability benefits suffer the most from delayed and inconsistent benefit evaluations. Problematic impairment ratings breed disputes over the benefits payable. Delayed payments unnecessarily stress injured workers' lives, increase administrative costs, and generally cause stakeholders to have less confidence in the system.

Measuring the degree of functional loss to an organ or body system can be a very complex and challenging task. But these inherent problems are aggravated by physicians/raters evaluation of permanent impairments who do not understand and use practical standards with which to measure and report on the degree of physical impairment. As the AMA Guides 5th Edition evolved, they have provided direction and a foundation of consistency and fairness to the process of rating impairments. The six editions of the AMA Guides demonstrate that reforming the process of rating is ongoing. However, on some important definitions and conceptual issues, there continues to be significant evidence demonstrating that the AMA Guides 6th Edition have been unable to meet Utah needs for workers' compensation.

This guide supersedes the AMA Guides 5th Edition and is to be used for Utah's workers' compensation purposes to clarify the definitions and practices contained in the AMA Guides 5th Edition from Utah's workers' compensation context. It is produced by medical providers skilled in occupational medicine and impairment rating for workers' compensation, with input from regulators and benefit administrators. Our goal is to add more refinement and uniformity to the process, so as to provide a more consistent, universal, and fair process.

This chapter of the Utah Guides lays out basic principles for impairment evaluations. These principles are carried forward in other parts of the Utah Guides dealing with specific body parts or systems

Chapter Two: Pain, CRP Syndromes and Apportionment

2.0 Pain

Putting a dollar value on pain is a highly contentious issue. First, pain is inherently subjective with objective pathology often only showing a modest correlation. An examiner must rely on communications from a patient rather than on laboratory or imaging studies in order to assess pain. Because of the subjective nature of pain, awards under tort law can vary enormously depending on the nature of the case involved and the judge or jury. The early framers of workers' compensation law wanted to avoid these disputes and highly variable outcomes. Even today, most systems avoid explicit compensation for pain from a workplace injury.

Clearly, work injuries can produce excruciating pain. Moreover, pain can manifest itself in predictable physical outcomes, some of which can be measured with a reasonable degree of precision. If not measurable, some symptoms of pain are classic and experienced similarly in occupational and non-occupational contexts, e.g., phantom pain after an amputation.

Pain is subjective and has been shown to be influenced by depression, anxiety, beliefs, expectations, rewards, attention and training. These markers reflect social and environmental factors as much as they reflect pain.[31]

2.0a. Pain Rating Guidelines

Unique to the AMA Guides 5th, is a chapter on rating pain, which allows additional ratings for subjective pain. This new methodology provides the rating physician leeway to combine up to an additional 3% Whole Person impairment to the impairment rating if the rater believes the individual to have a pain-related impairment that has "increased the burden of his or her condition slightly" or significantly.[32]

The basic challenge for such a system of rating pain related impairments is to incorporate the subjectivity associated with pain into an impairment rating system, whose fundamental premise is that impairment assessment should be based on objective findings. The inherent subjectivity of pain is incongruent with the *Guides'* attempts to assess impairment on the basis of objective measures of organ dysfunction, as it requires that determinations of pain intensity and the restrictions imposed by it must be largely based on subjective patient's reports.[33]

After reviewing the various philosophies, chapters and charts on pain, the Utah Impairment Rating committee expressed considerable concern that this new subjective methodology for awarding percentages of impairment for pain related behaviors has not been used and tested on a widespread basis, as have other impairment ratings systems.[34] The committee felt that adopting this subjective methodology would increase interrater variability, secondary litigation, and cost. With time, this concern appears to be justified.

It is the committee's belief that the statement was found in the 3rd, 4th and 5th Editions of the AMA Guides. "The impairment ratings in the body organ system chapters make allowances for any accompanied pain" [35] adequately considers pain. Therefore, the committee recommended that until advances in diagnostic technology and clinical experience make pain related impairment ratings feasible for individuals with pain syndromes except for severe persistent *extraordinary* painful conditions as listed below, no additional award will be calculated for pain under Chapters 13, 15, 16, 17 and 18 of the AMA 5th Edition of the Guides, or for conditions rated by these Utah Guidelines.

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[31] Ibid, p. 581.
[32] The Guides to the Evaluation of Permanent Impairment, 4th Edition, Chicago, IL, American Medical Association; 2001. p. 573 18-3-c.
[33] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association; 2001. p. 569
[34] Ibid, p. 570.
[35] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association; 2001. p. 20.

Impairment for pain can be considered for only those with severe persistent *extraordinary* painful conditions that are listed in this section and that are typical of a medical disorder that is well recognized, relatively uncommon, and that has persisted for a minimum of 6 months. These conditions are limited to and include: 1) amputations with phantom pain, 2) headaches secondary to severe head trauma or skull fractures, and 3) post paraplegic pain.

For these conditions, the committee recommended combining an additional 5% whole person impairment to be combined with the final calculated impairment.

2.0a.i. Examples of extraordinary pain syndromes

Example 1:

Twelve months ago, a 25-year-old male public transit worker fell under a moving rail car at work and incurred a complete below-the-knee amputation. His post-operative and rehabilitate course was unremarkable. He has been declared medically stable and is left with severe phantom leg pain (not just the common phantom leg sensations). His impairment is 80% lower extremity or 32% whole person for the amputation and 5% whole person for the accompanying extraordinary chronic pain. His total impairment is 35% whole person (32% combined with 5 %).

2.0a. ii. Functional somatic syndromes that are not characteristic of any well-recognized medical disorder

Chronic Fatigue Syndrome: Myofascial Pain Syndrome, Fibromyalgia, Sick Building Syndrome, Multiple Chemical Sensitivity (Idiopathic Environmental Intolerance), Neurogenic Thoracic Outlet Syndrome, Spinal Subluxations not visible on MRI or CT scan, "Myositis" and "Fasciitis" without objective findings, and other functional somatic syndromes are based on an individual's report of widespread subjective discomfort and reports of tenderness during physical examination. Despite extensive research, no specific underlying biological abnormality has been discovered to explain the reports of these people. In that the medical community has not achieved consensus on how to construe such conditions, these conditions are not to be rated.[36]

2.1 Utah's Chronic Regional Pain Syndromes (CRPS) Type 1 or 2

CRPS-1-2 is a diagnosis that is plagued by problems with reliability and validity.[37] [38] [39] Recent research by Butler demonstrated that many of the clinical signs of CRPS can be produced in healthy volunteers with simply casting a limb for one month.[40]

Unfortunately, there is a significant lack of inter-physician reliability for these "signs" in CRPS, as well as for the diagnosis.[41] [42] [43]

Those doing the impairment rating for CRPS must be cognizant of the overlap of the diagnosis of CRPS

[36] Ibid, p. 569 p. 568.
[37] van de Beek WJ, Schwartzman RJ, van Nes SI. Diagnostic criteria used in studies of reflex sympathetic dystrophy. Neurology 2002, 58 (4): 522-6.
[38] Schott G D. Interrupting the sympathetic outflow in causalgia and reflex sympathetic dystrophy. A futile procedure for many patients. British Medical Journal, 1998; 316: 792-793.
[39] van de Vusse AC, Stomp-van den Berg SGM, de Vet HCW, and Weber WEJ. Interobserver reliability of diagnosis in patients with complex regional pain syndrome. Eur J Pain 2003 7:259-65.
[40] Butler S. Disuse and CRPS. In: Harden RN, Baron R, Janig W, editors. Complex Regional Pain Syndrome. Seattle: International Association for the Study of Pain Press; 2001. p. 141-150.
[41] van de Vusse AC, Stomp-van den Berg S, and Weber WEJ. Discrepancy between complaints and objective signs in chronic regional pain syndrome: a multi-observer study. The Pain Clinic 2002; 13 (3): 245-249.
[42] van de Vusse AC, Stomp-van den Berg SGM, de Vet HCW, and Weber WEJ. Clinical reliability of diagnosis in complex regional pain syndrome (CRPS). Neurology 2000;53 (suppl 3): A177-178.
[43] van de Vusse AC, Stomp-van den Berg SGM, de Vet HCW, and Weber WEJ. Interobserver reliability of diagnosis in patients with complex regional pain syndrome. European Journal of Pain 7 (2003); 259-265.

and Pain Disorders as listed under the somatoform disorders, as in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR.[44]

2.1a. Calculation of Impairment Rating in Utah for CRPS

It is recommended that for the diagnosis of CRPS to be given, for injured workers in Utah, it should meet the Budapest Criteria, defined by the International Association for the study of Pain, (IASP).

When the diagnosis of CRPS has been established, the calculation of the impairment rating is undertaken as described on pg 496 and 497, and using Table 16-10 (5th Edition pg 482 Ibid). Rather than using only the upper (or lower) limb impairment, this value is multiplied, by the amputation value for the area involved (Table 16-4, pg 440 for the upper limb and Table 17-32, pg 545 Ibid for the lower limb). The result is to be combined with any applicable rating for Range of Motion (ROM) loss. In cases where there are signs or symptoms of CRPS, but the IASP's criteria are not met, other methods for rating should be applied, or Schedule IX, which is a stand-alone rating, may be utilized.

Example 1:

A 33-year-old female was involved in a MVA where the car she was driving was hit broadside on the left by a 1-ton delivery truck. Although she had no fractures, she had significant soft tissue trauma to her left wrist area. Over the course of 1 year, her hand and wrist continued to bother her with hyperalgesia from the wrist distally. In addition to marked loss of motion, she had signs of a much cooler, swollen and mottled hand, nail changes, and thin, hairless, non-elastic skin. Her radiographs were consistent with disuse osteoporosis. She was declared medically stable with a diagnosis of CRPS Type 1. She is seen for an impairment rating.

On physical examination, it is apparent she has significant objective pathology, consistent with CRPS Type 1 that historically is contiguous with her physical injury. She really does not meet the criteria for a somatoform or malingering disorder. Using Table 16-4 (amputation table) her Maximum impairment rating would be 92% upper extremity. This is multiplied by 40% from Utah's Schedules for Calculating Neurological Loss, Spine Section.

3	Diminished light touch with some abnormal sensations or pain, interfering with activity	40

92% x 40 is 36% upper extremity. This value is combined with 18% for her loss of motion to her hand and wrist, equaling 48% upper extremity or 29% whole person.

Also see example 4 in the Lower Extremity Chapter.

2.2. Apportionment

It is important for physician/raters doing impairment ratings to be aware of some of the Utah laws to which they are reporting.

To facilitate this discussion and understanding, the standard terminology "prior impairment" will be used and replaces various other descriptors, such as: pre existing conditions, preexisting symptomatic conditions, previously existing conditions, and previously existing symptomatic conditions.

The allocation of damage among possible contributing causes is naturally imprecise. The chief problem is the lack of reliable measurement on body functions involved before and after each injury or point of

[44] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders Text, ReVision. 4th ed. Washington (DC); 2000.

damage. Measuring deterioration or limitation from non-occupational disease or from the aging process is also difficult.

Various assumptions are made and included based on reasonable medical probability, which in Utah generally means greater than 50% chance.

To arrive at the most reliable and valid conclusion, the rater needs information. Measurements on current physical condition can be ordered. Comparing these with previous measurements and history may be difficult. The physician may be constrained in what is available or what he or she can request. Unfortunately, data on prior injuries is often not available.

It should also be born-in-mind that prior permanent impairment requires the same standards as rating present permanent impairment.

2.2a. When and How Impairment Benefits are Apportioned:

When a permanent impairment results from the addition or combination of a prior impairment with the existing impairment from the industrial accident, then the permanent impairment is apportioned (or distributed) between the current injury and the prior impairment condition(s). Physicians/raters must understand that apportionment generally applies only to permanent impairments. Apportionment of the final rating is necessary if there is objective medical documentation that a prior ratable impairment existed before the industrial event for the same anatomical area, structure or condition. In order to apportion any condition as a prior impairment, the condition would need to have been ratable by either the AMA Guides 5th Edition or Utah' s Impairment Guides before the industrial event and must be based on reasonable medical probability (i.e., greater than 50%). The total impairment is calculated and then the prior impairment is calculated and deducted. The remaining amount would then be due to the industrial accident.

Not all cases can be apportioned. If the physician cannot, with a reasonable degree of medical probability, estimate the level of impairment that would have existed, absent the injury, then the physician cannot apportion the final impairment.

Apportionment cannot be based solely on the existence of a disease, abnormality, or disorder. If a person has an occult disorder (spondylolysis, spondylolisthesis or significant degenerative changes, etc.) that would not have qualified for a rating before an event, then the final rating is not subject to apportionment. (Such a condition, while not clearly increasing the incidence of injury, does increase the morbidity, lessen the degree of recovery and increases the likelihood of surgery. Those issues that cannot be measured in any reasonable, objective way cannot qualify for an apportionment.)

2.2b. The Schedule to Use When Apportioning Preexisting Conditions

If an individual has received a prior rating from Utah's 1994, 1997, 2002, 200 6, or Utah's 2024 Guides, the 4th or 5th Edition of the AMA Guides involving the same anatomical area as the industrial accident, then this prior rating would be subtracted from the new rating. If the person has received a prior rating for conditions from any other schedule than those listed above, the physician/rater is to subtract the prior rating from the new rating, up to the amount he/she *would have received for the same condition under this schedule*. If the person has a preexisting condition that is listed in these guidelines and has not been rated for this problem, the physician should use these guidelines to document, as best they can, a rating for the preexisting conditions, which is then subtracted from the current rating. (See Spine Example 24)

If the person has preexisting conditions that are not found in these guidelines and has not been rated for these problems, the physician should use the Fifth Edition of the AMA Guidelines with these 2024 Utah Supplemental Guides to document, as best they can, a rating for the pre-existing conditions, which is then subtracted from the current rating.

SCHEDULE 4 **What Schedule to Use When Apportioning Prior Ratable Conditions**	
Patient has a prior rateable condition for the same body area being rated	**What schedule to apply**
For all conditions other than spine, if the prior impairment was calculated from the AMA's 4th or the 5th *Edition Impairment Guides*, or the 1994,1997, 2002, 2006 or the 2024 Utah Guides	Subtract prior impairment directly for the new calculated impairment.
For spine ratings from the AMA's 4th or the 5th *Edition Impairment Guides*	Establish what the rating would have been under these "Utah's 2024 Guides". Subtract this % impairment from the total impairment %.
Prior impairment was calculated from any schedule other than the above:	Establish what the rating would have been under the schedule, "Utah's 2024 Guides". If the condition to be rated is not included there, use the AMA's Guides 5th Edition. Subtract this % impairment from the total impairment %.
A prior condition existed that was never rated, but contributes to the final rating.	Establish what the rating would have been under this schedule, "Utah's 2024 Guides". If the condition to be rated is not included here, use the 5*th Edition*. Subtract this % impairment from the total impairment %. If the condition is a non-operative spine injury and it does not directly fit into schedule I (history of injury type, imaging findings and written information indicating that the prior injury would have resulted in functional work restrictions lasting >6 months), the physician rater is to use Schedule V to establish the rating, beginning at 5% for soft tissue injury, 7% for a spondylolisthesis, or 10% for a radiculopathy. After applying schedule 5 to the above condition, Subtract this % impairment from the total impairment %. (See examples 5, 14, 15, 19 and 24 in the spine section.)

Chapter Three: Spinal Injuries and Conditions

3.0 Introduction

This is Chapter Three of a series of the Utah Labor Commission's Supplemental Guides and resources that have been developed by the Utah Labor Commission to assist workers' compensation authorities and physicians in the process of rating permanent impairments. Please see Chapter One for a general introduction and for principles of rating.

This part of the supplement deals with spinal injuries and conditions. The user should be aware that the use of Chapter Three may depend on, or amplify principles introduced in, Chapters One and Two. This is especially true of issues regarding the rating of pain.

The impairment methodology found within the current AMA Guides 5th Edition recommends two separate ways to calculate one rating. How one selects which method to use for rating remains subjective and unnecessarily complicated.[45] A number of studies have demonstrated that the spinal range of motion methodology lacks validity and reliability.[46] [47] [48] [49] [50] Further studies have shown that spinal range of motion is non-reliable and dependent on the age and sex of the patient,[51] [52] osteoarthritis,[53] the time of the day the measurements were taken,[54] and have no relationship to disability.[55]

The implication is that impairments calculated using the current AMA Guides 5th Edition methodology is inaccurate and costly to employees, employers, and insurers who rely on the AMA Guides 5th Edition system of assessment for legal and administrative determinations. With increased costs and emphasis on measurable outcomes, it is vital that unreliable methods not be accepted as "good enough" or "near enough."

With consideration of the medical literature and measurable outcomes, the Utah Impairment Rating Committee has further clarified the spinal DRE and ROM models found within the current AMA Guides 5th Edition, and developed the methodology listed below. This methodology is based on Functional-Anatomic and Diagnosis Based (FAD) information and has been found to provide thousands of consistent and reliable spinal ratings for the past 17 years in the State of Utah.[56]

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[45] Hsieh CY; Hong CZ; Adams AH; Platt KJ; Danielson CD; Hoehler FK; Tobis JS Interexaminer reliability of the palpation of trigger points in the trunk and lower limb muscles Arch Phys Med Rehabil 2000 Mar;81(3):258-64 (ISSN: 0003-9993)

[46] Nitschke JE , Nattrass CL ,et al, "Reliability of the American Medical Association Guides' Model for Measuring Spinal Range of Motion. Its Implication For Whole-Person Impairment Rating. Spine 1999, Feb 1; 24(3):262-8

[47] Madson TJ , Youdas JW , Suman VJ, Reproducibility of lumbar spine range of motion measurements using the back range of motion device. J Orthopedic Sports Physical Therapy 1999 Aug, 29(8):470-7

[48] Shirley FR , O'Connor P , Robinson ME , MacMillan M Comparison of lumbar range of motion using three measurement devices in patients with chronic low back pain. Spine 1994, Apr 1; 19(7): 779-83

[49] Sullivan MS , Dickinson CE , Troup JD, The Influence Of Age And Gender On Lumbar Spine Sagittal Plane Range Of Motion." (A study of 1,126 healthy subjects.) Spine 1994 Mar 15; 19(6):682-6

[50] Mayer RS , Chen IH , Lavender SA , et al, "Variance In The Measurement Of Sagittal Lumbar Spine Range Of Motion Among Examiners, Subjects, And Instruments." Spine 1995 Jul 1; 20(13):1489-93

[51] Nilsson N , Hartvigsen J , Christensen HW, Normal ranges of passive cervical motion for women and men 20-60 years old. J Manipulative Physical Therapy 1996 Jun; 19(5):306-9

[52] Russell P , Pearcy MJ , Unsworth, "A Measurement Of The Range And Coupled Movements Observed In The Lumbar Spine." Br J Rheumatol 1993 Jun; 32(6):490-7

[53] Weiner DK , Distell B , et al, "Does Radiographic Osteoarthritis Correlate With Flexibility Of The Lumbar Spine?" American Geriatrics Society, 1994 Mar; 42(3):257-63

[54] Ensink FB , Saur PM , Frese K , Seeger D , Hildebrandt J. "Lumbar Range Of Motion: Influence Of Time Of Day And Individual Factors On Measurements." Spine 1996 Jun 1;21(11):1339-43

[55] Poitras S, Loisel P, Prince F, Lemaire J Disability measurement in persons with back pain: a validity study of spinal range of motion and velocity. Arch Phys Med Rehabil 2000 Oct;81(10):1394-400

[56] Methodology To Reduce Variation For Impairment Ratings In Workers' Compensation. Feb 2001, Disability Medicine.

3.1 Spine and Pelvis Conditions

Physicians are to use the following sections to rate patients with residual spinal problems from an industrial accident. With these Utah Spinal Impairment Guides, the patient is placed in the category that best describes his/her condition. The physician should not combine two impairments for the same spinal areas, except for completely different problems, which situation would be unusual. For example, if one has an L1 compression fracture and a herniated disc at L4, these would be regarded separately and combined. There will be unusual cases that do not fit these categories and they should be rated in relationship to and the utilization of these categories.
Before an impairment rating is considered, the patient must be medically stable.

Medical stability, permanent and stationary, maximum medical improvement, (MMI), or fixed state of recovery,[57] refers to a date in which the period of healing has ended and the condition of the worker is not expected to materially improve or deteriorate in the ensuing year.[58] [59] [60] [61] [62] It is important to note that medical stability may not be used to terminate necessary medical care. The date of medical stability and the date when the worker qualifies for an impairment rating can be two separate dates.

The majority of patients with soft tissue spinal complaints resolve without any permanent residual injury. Regardless of the cause of back pain, approximately 70% of affected people recover in 2 to 3 weeks and 90% in 6 weeks (Andersson, Svensson, & Oden, 1983; Nachemson, 1982). This "recovery curve" plateaus at 6 months, and therefore it is the consensus of the impairment committee that before considering any patient with residual soft tissue, developmental and degheir enerative spine complaints at MMI for impairment, their symptoms have been present for a minimum of six consecutive months.

3.1a. Apportionment of Soft Tissue Impairment

We recognize that most impairment ratings are estimates. Apportionment in soft tissue spine impairments is particularly variable and unreliable. Schedule V, The Severity Indexing Schedule for Apportionment, in this guide is to be used with those with a prior history of non-surgical back pain that does not meet the criteria for direct apportionment of Schedule I. Although Schedule V may have shortcomings, many variables have been considered by the Committee. Schedule V appears to be a reasonable and logical approach to improve uniformity and reliability.

Each spinal area involved, the cervical, thoracic, and lumbar is considered a one-organ system. All numbers *within* Schedules I or II are to be combined. When ratings involve two or more spinal areas from Schedule I (Cervical-Thoracic and Thoraco-Lumbar) or Schedule II (Cervical, Thoracic and/or Lumbar) they are combined. When other organ systems are involved, such as neurological loss, their values are also combined with the spine.

3.1b. Spine Impairment Concepts

Following are some general definitions of key concepts used in this chapter.

- If a person has a clinically significant disc protrusion or extrusion excision, followed by a quiescent stabilized period and then, later, incurs a recurrent disc *at the same level,* this new protruded disc would be rated and the impairment rating for the initial disc injury/surgery would be apportioned from the current total impairment. This is true even though the circumstances that precipitated a recurrence may be minimal. There is no additional impairment for a recurrent disc

[57] Ibid
[58] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association 2001, p. 19.
[59] Ibid, p.19.
[60] Booms v. Rapp Const. Co. 720 p. 2d 1363 Supreme Court of Utah, June 6, 1986.
[61] Page 315, *AMA Guides 4th Edition*
[62] 1997 Utah's Impairment Guides, Page 3

treated conservatively, unless there is evidence of additional residual radiculopathy. [See Example 15]

- If a person has a disc herniation or excision followed by a stabilization period and later, incurs a herniation of a disc at a different level, the additional rating for the second herniation would be according to schedule I or II. The prior event should be included in the rating and apportioned off so the net result would be the same. [See Examples 15, 16, 24, 25]

- Combining impairments for additional levels II-B, II-D and II-F can be applied only one time for the same level.

- Repeat explorations at the same level, or repeat fusions at the same level, increase the impairment rating by 2% per surgery. [See II-C]

- If a person had only prior degenerative changes (no ratable conditions on Schedule V) and later he/she sustains a specific pathological condition, such as a herniated disc, no apportionment to the degeneration is made, as the previous condition was asymptomatic and not ratable.

- Two completely different spinal areas involved should be calculated separately and combined.

3.2 Spinal Translocation or Isolated Spinal Segmental Instability (ISSI)

Determining and awarding for ISSI has become a controversial issue that originated in the 3rd, 4th, and now the 5th Edition of the AMA Guides 5th Edition. The methodology currently utilized in the AMA Guides 5th Edition has a high rate of false-positive and false-negative tests.[63]

Currently there is no universally accepted criterion for evaluating ISSI, with the medical literature reporting a large range of "normal" motion values and a significant overlap of symptomatic and asymptomatic motion patterns.[64] [65] [66] [67] ISSI is an extremely rare condition and is only seen with a significant history of severe trauma or severe pre existing degenerative disc disease (not with minor low speed motor vehicle accidents) the committee recommends that until a more practical, consistent and universally accepted methodology evolves for assessing ISSI, ratings for this condition are only to be given utilizing the other methods described in Schedule 1 of this spine section.

[63] Shaffer WO, Spratt KF, Weinstein J, Lehmann TR, Goel V. 1990 Volvo Award in clinical sciences. The consistency and accuracy of roentgenograms for measuring sagittal translation in the lumbar vertebral motion segment. An experimental model. Spine. 1990 Aug;15(8):741-50.
[64] Boden SD, Wiesel SW. Lumbosacral segmental motion in normal individuals. Have we been measuring instability properly? Spine 1991 Jul;16(7):855.
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[66] Lee SW, Wong KW, Chan MK, Yeung HM, Chiu JL, Leong JC Development and validation of a new technique for assessing lumbar spine motion. Spine 2002 Apr 15;27(8):E215-20
[67] Boden SD, Wiesel SW. Lumbosacral segmental motion in normal individuals. Have we been measuring instability properly? Clin Biomech (Bristol, Avon) 2002 Jan;17(1):1-Spine 1991 Jul;16(7):855

.3.3 Schedules I – VI

Notes:
*This schedule should only be used if no surgery has been performed.

3.3a.SCHEDULE I-- SOFT TISSUE-NON SURGICALLY TREATED CONDITIONS BASED ON FUNCTIONAL-ANATOMIC and DIAGNOSTIC BASED CRITERIA (FAD) **(Whole Person Impairment)** Schedule I suggests a minimum duration of six months of symptoms from the time of the injury to the impairment rating and no surgical intervention. The rater is to use only one condition from category 1A through IE, one time.		
Placement of a patient within one of these categories is dependent primarily on the history and physical findings. The examiner should also consider any "pain behaviors" that may be present. (See 5TH Edition of the AMA Guides 5th Edition)	**CERVICAL-THORACIC**	**THORACIC-LUMBAR**
I-A. Medically documented injury events with subjective symptoms and clinical findings that are consistent with spinal pathology. No evidence of acute changes on imaging and no activity modifications required.	0%	
I-B. Medically documented minor injury events, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have evidence of none to minimal changes on imaging and may have permanent activity restrictions.	3%	
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%	
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%	
I-E. Medically documented moderate-severe injury event with subjective symptoms persisting for a minimum of six months with a spondylolisthesis, Grade III or IV.	8%	
Combining for above conditions in Schedule I. (Whole Person)		
I-F. Medically documented injury, subjective symptoms persisting for a minimum of six months, and clinical findings which are consistent with continued pain, decreased motion and Imaging evidence of a 2nd disc herniation that displaces nervous tissue that has occurred from a 2nd injury at another level than the first prior disc herniation, and neither disc herniation was treated surgically.	3% per level	
I-G. Neurological: Persisting Radicular Neurologic Deficit. If the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16, modified from the AMA Guides 5th, and combine the new radiculopathy rating, in place of the 3% listed here. [See Radiculopathy Schedule]	3% for each involved nerve root (Combined)	

3.3b. SCHEDULE II. SURGICALLY TREATED SPINE CONDITIONS BASED ON FUNCTIONAL-ANATOMIC and DIAGNOSTIC BASED CRITERIA (FAD) **(Whole Person Permanent Impairment)** For conditions found in Schedules II and IV, no amount of time is required from the injury to the calculation of impairment. Apportionment for conditions listed below is direct and Table V's methodology does not apply. (See Examples at the end of Chapter 2)	
Placement of a patient within one of these categories is dependent primarily on the history and physical findings. The examiner should also consider any "pain behaviors" that may be present as defined in the AMA Guides 5th Edition, 5th Edition.	**CERVICAL -THORACIC-LUMBAR**
II-A. First minimally invasive spinal surgery such as a percutaneous or an endoscopic procedure done as an attempt to decompress a herniated disc, performed at one level in a given spinal region, for a significant disc abnormality, (Assigned one time per patient.)	5% (one time per patient)
II-B. Minimally invasive spinal surgery, performed at another level than the first in a given spinal region, for significant disc abnormality,	2% (one time per disc)
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% (one time per patient)
Combining additional impairments for Schedule II-A. (Whole Person)	
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the first disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3% (one time per disc)
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	Combine 2% per operation
II-F. Spinal Fusions or placement of a single" artificial disc" (For the first level fused that spans 2 vertebrae.)	Combine 3% for first level (use one time only)
II-G. Fusions or placement with an "artificial disc", additional level(s) (i.e. a fusion that spans 3 or more vertebrae) This is to be used only one time per level.	Combine 2% for each additional level. This is to be used only one time per level
II-H. Neurological: Persisting Radicular Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. Modified from the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here.	Combine 3% for each involved nerve root
II-I. Minor procedures or operations, such as removal of internal fixation devices.	0%

3.3c.SCHEDULE III. RADICULOPATHY BASED ON FUNCTIONAL-ANATOMIC and DIAGNOSTIC BASED CRITERIA (FAD) Residual radicular pain >6 months after surgery is usually investigated with postoperative imaging. It is not the intent of this table to award 2 points for preoperative imaging changes when the surgery has resulted in major improvement in the size of the herniation and the radicular pain. (Must have a score greater than or equal to 3 to qualify)		
Objective Testing	**Documented Objective Findings at the Time of Rating**	**Score**
Imaging	Significant disc protrusions that displace nerve tissue (which correlates with clinical picture) and/or bony/mechanical nerve root encroachment on the imaging	2
Muscle Involvement	Objective muscle weakness and/or thigh atrophy >2 cm compared to uninvolved limb, or leg, arm, or forearm atrophy >1 cm	2
EMG Changes	Findings of fibrillation potentials and or high amplitude polyphasic potentials and decreased recruitment seen in at least 2 muscles in the distribution of a nerve root	2
Sensory Involvement	Reproducible alteration of sensation (sharp/dull, hot /cold, light touch,) consistent with specific dermatomal distribution	1
Reflex Changes	Loss of/or diminished deep tendon reflexes, (biceps-triceps-brachioradialis-patellar-or ankle jerk) as compared to non-affected side.	1
Tension –Compression Signs	Spurling's Sign [68] Straight Leg Raise [69] Femoral Stretch [70]	1

[68] Spurling's Sign is defined as **pain in the distribution of a cervical nerve root** that is produced by simultaneous neck extension, ipsilateral rotation, and axial compression.

[69] Straight Leg Raise is defined as **pain in the distribution of the L5 or S1 lumbar nerve root** that is produced when the ipsilateral hip is flexed from 10 degrees to 70 degrees, while the knee remains in full extension.

[70] Femoral Stretch is defined as a pain in the distribution of the L2-L3-L4 nerve root that is produced when the patient is prone, the involved knee is flexed and the hip extended.

3.3d. SCHEDULE IV. VERTEBRAL FRACTURES BASED ON FUNCTIONAL, ANATOMIC, and DIAGNOSTIC BASED CRITERIA (FAD)
(Whole Person Permanent Impairment)

The impairments listed below are the same with or without surgery. The rater is to use only the highest ratings from either sections IV-A or IV-B or IV-C. Non-adjacent fractures at distinctly different areas may be rated separately and combined. Accompanying impairments to other organ systems are calculated separately and combined with the fracture impairment.

Schedules for fractures, spinal soft tissue and surgical procedures are mutually exclusive for a given spinal region.

COMPRESSION FRACTURE THAT REMAINS AT MEDICAL STABILITY
The impairments listed below are the same with or without surgery.

If surgery, fusion, vertebroplasty, or kyphoplasty is performed, the pre-operative compression percentage amount is used for the rating. Pre-existing compression fractures should be rated only when there has been aggravation by a new injury, shown by objective radiological findings of worsening of the pre-existing fracture. These values should be addressed as a pre-existing factor.

	VERTEBRA		
IV-A: % VERTEBRAL COMPRESSION FRACTURE	**CERVICAL**	**THORACIC**	**LUMBAR**
IV-A-1: 10% or less	3%	2%	3%
IV-A-2: 11% to 25%	6%	4%	4%
IV-A-3: 26% to 50%	14%	6%	10%
IV-A-4: Greater than 50% (Burst Fracture)	19%	9%	(Include T12 with Lumbar) 15%
IV-A-5: Fusion- If it is required to extend the fusion over more than two vertebrae combine			5% one time
IV-A-6: For multiple fractures listed in IV-A, with more than one level involved			Combine 2% for each additional fracture
IV-A-7: Radiculopathy * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16. Modified from the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here.			Combine 3% one time

IV-B: X-RAY EVIDENCE OF VERTEBRAL BODY FRACTURE WITH ASSOCIATED FRACTURES/DISLOCATIONS INVOLVING POSTERIOR ELEMENTS (REGARDLESS OF DEGREE OF VERTEBRAL COMPRESSION) Including Those Fractures Which Involve the Pedicle, Lamina, Articular Process, Transverse or Spinous Process.	
IV-B-1: No Surgery is performed and reduction is to normal or "anatomic" position	6%
IV-B-2: Surgery performed and reduction is to normal or "anatomic" position (Includes fusion)	14%
IV-B-3: No surgery performed and reduction is not to normal or "anatomic" position	17%
IV-B-4: Surgery performed with significant persisting bony deformity (includes fusion)	20%
IV-B-5: Fusion- If it is required to extend the fusion more than three vertebra combine	5% one time
IV-B-6: For multiple fractures listed in IV-B, with more than two vertebrae involved	Combine 3% one time
IV-B-7: Persisting Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16. Modified from the AMA Guides 5th Edition, and combine the new radiculopathy rating, in place of the prior 3%	Combine 3% one time

3.3d.SCHEDULE IV. VERTEBRAL FRACTURES (Whole Person Permanent Impairment)
The impairments listed below are the same with or without surgery. If a fracture(s) is healed without any symptoms and without any functional limitations, without functional impairment there is no rating given. If there are no symptoms, no limitations with either a fracture or soft tissue injury, then an impairment award is not justified. Rater is to use only the highest ratings from either sections IV-A or IV-B or IV-C. Non-adjacent fractures at distinctly different areas may be rated separately and combined. Accompanying impairments to other organ systems are calculated separately and combined with the fracture impairment.

IV-C: OTHER FRACTURES NOT LISTED ABOVE: Fractures of Posterior Elements only, without vertebral body involvement The below listed impairments are the same with or without surgery.	
IV-C-1. Fracture of one or more transverse processes or spinous processes healed without significant displacement or symptoms.	0%
IV-C- 2. Fracture of one or more transverse processes or spinous processes fractures with or without displacement BUT WITH persistent symptoms remaining>6 months.	5%
IV-C-3. Fracture of posterior elements, healed without displacement or symptoms.	0%
IV-C-4. Fracture of Posterior element, healed with or without displacement, but requiring spinal surgical intervention.	10%
IV-C-5. Fracture of posterior elements healed with or without displacement requiring surgical fusion.	Combine 3%
IV-C-6. Fusions over more than two vertebrae combine: (This is not to be used in conjunction with IV-A-5.)	5% one time
IV-C-7. Persisting Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16. (Modified from the AMA Guides 5th Edition and combines the new radiculopathy rating, in place of the 3% listed here.)	Combine 3% one time

*See Radiculopathy Schedule

3.3e. Severity Indexing for Spine Injuries Schedule 1, Apportionment

It is recognized that impairment ratings involve best estimates. Arriving at apportionment for spine impairments in the past has been extremely variable and unreliable. While Schedule V (Severity Indexing for apportionment of Schedule I) may have some shortcomings, many variables have been considered and it appears to be a reasonable and logical approach to improve uniformity and reliability.

3.3f. Process to Apportion from Schedule I

Schedule V only applies to non-operative spine conditions. If the prior condition is not ratable in these impairment guides (does not have a documented history of the type of injury, imaging findings and written information indicating that the prior injury would have resulted in functional work restrictions lasting >6 months), the physician rather is to use Schedule V. The rater is to calculate the rating, beginning at 5% for all soft tissue spinal injuries, 7% for a spondylolisthesis, or 10% for a documented radiculopathy. After applying Schedule V, the rater is to subtract this prior impairment from the new calculated total impairment. (See examples 5, 14, 15, 19 and 24 in the spine section.)

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I BASED ON FUNCTIONAL, ANATOMIC, and DIAGNOSTIC BASED CRITERIA (FAD) (This applies only to the Impairment Process/Disability Process.) Schedule I requires a minimum of six months duration of symptoms, from the time of the injury and the impairment rating.			
	0	**1pt.**	**2pts.**
V-A. Time lost from work in the last 12 months because of symptoms in the same spinal region	0	1-3 days	>3 days
V- B. Number of prior episodes in the same spinal region	0	1-3	>3
V-C. Time elapsed since last episode/injury	>3 years	1-3 Years	<1year
V- D. Prior permanent work restrictions because of problems in the same spinal region	None	Temporary	Permanent
V-E. Prior objective testing to the same spinal region: EMG-NCV, X-ray, MRI-CT, Bone Scan	0	If any performed prior to 2 years	If any performed within the last 2 years
V-F. Prior to latest claim, what ongoing medical, chiropractic visits, physical therapy visits were received for an injury to the same spinal region	0 -2 times in last 3 yrs	3-6 times in last 3 yrs	>6 in last 3 yrs
V-G. Spondylolysis with Spondylolisthesis		<25% slip	>25% Slip
V-H. Radiculopathy at same level (As objectified by Radiculopathy Schedule)	No History		Prior History

Formula for apportionment using points generated in Schedule V:

1-2 pts. = no apportionment
3 pts. = 10% may be apportioned off as a prior rateable condition
4 pts. = 20% may be apportioned off as a prior rateable condition
5 pts. = 30% may be apportioned off as a prior rateable condition
6 pts. = 40% may be apportioned off as a prior rateable condition
7 pts. = 50% may be apportioned off as a prior rateable condition
8 pts. = 70% may be apportioned off as a prior rateable condition
9 pts. = 90% may be apportioned off as a prior rateable condition
≥ 10 pts. = 100% may be apportioned off as a prior rateable condition

Summary of Basic Principles of Apportionment

- Apportionment applies only to permanent impairment
- *Impairment that directly results from the current injury being evaluated is not apportioned*
- Ratable impairment that existed prior to the injury is subject to apportionment
- In all cases, the criteria for apportionment may not be speculative

Actual factors of prior impairments are to be discussed with sufficient reason in support of the apportionment.

3.3g. SCHEDULE VI. THE PELVIS (Whole Person Permanent Impairment)	
Healed Fracture **without displacement or residual symptoms**…0% Healed fracture with displacement and **without residual symptoms(s) involving:** **a.**Single ramus…..... 0% b. Rami, bilateral…..... 0% c. Ilium.....0% d. Ischium.....0% e. Symphysis pubis, without separation.....0% f. Sacrum.....0% g. Coccyx.....0%	Healed fracture(s) with or without displacement, deformity, **and residuals symptoms**(s) involving: a. Single ramus.....2% b. Rami, bilateral and /or superior and inferior.....5% c. Ilium .....2% d. Ischium, displaced 1 inch or more .....10% e. Symphysis pubis, displaced or separated .....15% Sacrum.....5% f. Sacrum, into sacroiliac joint or sacroiliac joint dislocation with anatomic reduction.....10% g. Sacroiliac joint dislocation with NON-anatomic reduction .....15% h. Coccyx, non-union or excision..... 5% i. Coccyx, displacement.....3%* j. Fracture into acetabulum..... Evaluate according to hip

3.3h. Schedules for Calculating Neurological Loss

The methodology and schedules to be used in the calculation of neurological loss is contained in the Spine section of the 5th Edition of the AMA Guides 5th Edition, page 424 with the following simplification of tables.

SENSORY DEFICITS CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO NERVE ROOT DISORDERS (Severity Multiplier)		
Class	**Description of sensory loss or pain**	**% Sensory**
5	No loss of sensibility, abnormal sensation, or pain	0
4	Diminished light touch with or without minimal abnormal sensations or pain, forgotten during activity	20
3	Diminished light touch with some abnormal sensations or pain, interfering with activity	40
2	Decreased protective sensation (sharp dull discrimination) with abnormal sensations or moderate pain that may prevent some activity	60
1	Deep pain present, but no protective sensation (no sharp dull discrimination), severe pain or that prevents most activity	80
0	Absent sensibility, abnormal sensations or severe pain that prevents all activity	100

* Adapted and modified from the AMA Guides 5th Edition, Table 15-15, page 424

SCHEDULE MOTOR DEFICITS CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO LOSS OF FUNCTION RESULTING FROM NERVE DISORDERS (Upper or Lower Extremity Value)		
Class	**Description of Muscle Function**	**% Motor Deficit**
5	Active movement against gravity with full resistance	0
4	Active movement against gravity with some resistance	20
3	Active movement against gravity only without resistance	40
2	Active movement with gravity eliminated	60
1	Slight contraction and no movement	80
0	No contractions	100

* Adapted and modified from the AMA Guides 5th Edition, Table 15-16, page 424

3.3i. Spine with Associated Severe Neurological Injuries

For consistency in evaluating spinal impairments with associated severe neurological involvement, the following should be used whenever possible, eliminating the need for multiple system evaluations. (These are best applied in more isolated circumstances or for other conditions.) They are included by identification or implications in the categories as listed below. For spinal conditions with related impairments that clearly fall within the following classifications, use the AMA Guides 5th Edition, "Rating Corticospinal Tract Damage" (page 395) and the related text in these Guides.

3.4 Schedule Forms

The following schedule forms may be of assistance to the rating physician. It is recommended that the following applicable forms, along with supporting documentation, be submitted for spine impairments ratings:

- Schedule I Form for Computing Spinal Impairments
- Schedule II Form for Computing Surgical Spinal Impairments

3.4a. FORM FOR COMPUTING SPINAL IMPAIRMENTS – SCHEDULE I BASED ON FUNCTIONAL, ANATOMIC, and DIAGNOSTIC BASED CRITERIA (FAD) Use this schedule if no surgery has been performed. Numbers are to be combined			
Patient's Name:		**Date:**	
Placement of a patient within one of these categories is dependent primarily on the history and physical findings. The examiner should also consider any "pain behaviors" that may be present.		**CERVICAL-THORACIC**	**THORACIC-LUMBAR**
I-A. Medically documented minor/mild injury and subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. No evidence of acute changes on imaging and none to minimal activity modifications required.	0%		
I-B. Medically documented minor injury events, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have evidence of none to minimal changes on imaging and may have permanent activity restrictions.	3%		
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%		
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%		
I-E. Medically documented moderate-severe injury event with subjective symptoms persisting for a minimum of six months with a spondylolisthesis, Grade III or IV.	8%		

Combining for additional conditions in Schedule I-D. or 1-E. (Whole Person)			
I-F. Medically documented injury, subjective symptoms persisting for a minimum of six months, and clinical findings which are consistent with continued pain, decreased motion and Imaging evidence of a 2nd disc herniation that displaces nervous tissue that has occurred from a 2nd injury at another level than the first prior disc herniation, and neither disc herniation was treated surgically.	3%		
Combine Impairment (Total Amount for Spine):			
I-G. Persisting Radicular Neurologic Deficit * If the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16 modified from the AMA Guides 5th Edition, and combine the new radiculopathy rating, in place of the 3% listed here.	3% Combined		
Total Impairment Value Without Apportionment:			
Apportionment:			
Final Impairment Related to the Last Event:			
Signature and Title of Physician doing Rating:			

* See Radiculopathy Schedule

3.4b. FORM FOR COMPUTING SURGICAL SPINAL IMPAIRMENTS – SCHEDULE II BASED ON FUNCTIONAL,ANATOMIC, and DIAGNOSTIC BASED CRITERIA (FAD) Use for surgically treated spine conditions. Numbers are to be combined.				
Patient's Name:	**Date:**			
Injury Events		**Initial Event**	**Second Event**	**Third Event**
II-A. First minimally invasive spinal surgery such as a percutaneous or and endoscopic procedure done as an attempt to decompress a herniated disc, performed at one level in a given spinal region, for a significant disc abnormality, (Assigned one time per patient.)	5%			
II-B. Minimally invasive spinal surgery, performed at another level than the first in a given spinal region, for significant disc abnormality, (one time per disc)	2%			
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% (one time per patient)			
Combining for additional impairments for Schedule II-A. (Whole Person)				
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the 1st disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3% (One time per level per patient)			
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	Combine 2% per operation			
II-F. Spinal Fusions or placement of a single" artificial disc" (For the first level fused that spans 2 vertebrae.)	Combine 3%			
II-G. Fusions or placement with an "artificial disc," additional level(s) (i.e., a fusion that spans 3 or more vertebrae). This is to be used only one time per level.	Combine 2%			
II-I. Minor procedures or operations, such as uncomplicated removal of internal fixation devices	0%			
Combine Impairment (Total Amount for Spine):				
II-H. Neurological: Persisting Radicular Neurologic Deficit (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. modified from the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here. [See Radiculopathy Schedule]	3% Combined			

3.4b. FORM FOR COMPUTING SURGICAL SPINAL IMPAIRMENTS – SCHEDULE II BASED ON FUNCTIONAL,ANATOMIC, and DIAGNOSTIC BASED CRITERIA (FAD) Use for surgically treated spine conditions. Numbers are to be combined.			
Patient's Name:	**Date:**		
Total Impairment Value Without Apportionment:			
Apportionment:			
Final Impairment Related to the Last Event:			
Signature and Title of Physician doing Rating:			

3.5 Examples of Spine Impairments

Experiences of the authors have shown that a series of examples (clinical scenarios) can greatly assist the practitioner in the calculation of impairment ratings. Included are 28 specific examples of spine injuries and rating methods.

Example 1: Mechanical Back Pain

A 34-year-old construction worker sustained a relatively minor low back event/injury six months ago after he lifted a 10-foot 2 x 4 off the ground. He had a course of physical therapy, medications, and chiropractic physician visits. Although he continued to work, he had subjective complaints of intermittent low back pain and over-the-counter medications are occasionally used. He was declared medically stable and released to full duty. X-rays were normal.

EXAMPLE 1 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS (Whole Person)	**THORACIC-LUMBAR**
I-A. Medically documented minor/mild injury and subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. No evidence of acute changes on imaging and none to minimal activity modifications required.	0%
Final Impairment Related to the Last Event:	0%

Example 2: Mechanical Back Pain

A 23 year-old construction worker had a low-back injury claim six months ago following a slip on the ice wherein he landed on his buttocks. He had no known medical history of prior back pain. His x-rays were read as normal and he has undergone a course of physical therapy and medications. Although he has continued to work, he still complains of intermittent low-back pain with referred pain into the back of the legs that does not go into his feet. These symptoms remained consistent without any pain behaviors noted. He primarily used over-the-counter medications, but occasionally requires a prescription anti-inflammatory. Occasionally he uses a brace to work. He was declared medically stable and released to full duty.

EXAMPLE 2 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS	THORACIC -LUMBAR
I-B. Medically documented minor injury events, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have evidence of none to minimal changes on imaging and may have permanent activity restrictions.	3%
Combine Impairments:	3%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I & V):	
Impairment Related to the Last Event:	3%

Example 3: Mechanical Back Pain

A 44-year-old female has a history of a low-back injury claim occurring six months ago, when a 3 foot bar stool collapsed under her at work and she landed on her buttocks. She had no known history of prior back trouble. She had a course of physical therapy and medications. She continued to complain of intermittent low back pain with referred pain into the back of the legs that does not go into her feet. She missed some time at work and now mostly uses a prescription anti-inflammatory and occasionally an L.S. brace to work. Her physical examination did not demonstrate any neurological deficit. She was declared medically stable and with a permanent 30-lb occasional lifting weight-restriction based on pain tolerance. X-rays show moderate to severe disc space narrowing.

EXAMPLE 3 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS	THORACIC-LUMBAR
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%
Combine Impairments:	5%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I & V):	
Impairment Related to the Last Event:	5%

Example 4: Mechanical Back Pain with Referred Pain

Six months ago, a 48-year-old male had a low-back injury claim after he lifted an 80-lb concrete panel. He had a course of physical therapy, medications, and chiropractic physician's care. He continued to work, still complaining of intermittent low back pain with referred pain into the back of the legs, which radiated into the lateral aspect of his right leg. He did not have reflex changes, weakness, or dermatomal sensory changes. He occasionally misses some time from work and mostly uses a prescription anti-inflammatory and an L.S. brace at work. He was declared medically stable with a permanent 50-lb occasional weight restriction, based on pain tolerance. X-rays showed early degenerative disc disease, with an MRI scan showing a disc bulge at L4-L5 touching, but not displacing the nerve roots. He had no prior significant history of prior back injury and exhibited no pain behaviors.

EXAMPLE 4 **SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS** **(Whole Person Permanent Impairment)**	**THORACIC LUMBAR**
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%
Combine Impairments:	5%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I &V):	
Impairment Related to the Last Event:	5%

Discussion: Although this patient has subjective referred pain into the lateral aspect of his right leg, this alone does not qualify as a radiculopathy.

Example 5: Mechanical Back Pain with Referred Pain and with Prior History

A 48-year-old male injured his back six months ago lifting an 80-lb concrete panel. He had a course of physical therapy, medications, and chiropractic physician's care. Although he continued to work, he still complains of intermittent low-back pain with referred pain into the back of the legs, which does go into the lateral aspect of his right foot. He did not have reflex changes, weakness, dermatomal sensory changes, or signs of pain behavior. He occasionally missed work. He has been declared medically stable with a permanent 50 lb occasional weight restriction, based on pain tolerance. X-rays showed early degenerative disc disease, with an MRI scan showing a disc bulge at L4-L5 touching, but not displacing the nerve roots. He had two prior episodes of back pain, one 4 years ago in which he had no lost time and a second episode 1 year ago, with a lost time of three days. He had ten chiropractic physician visits for the episode 1 year ago, with a CT scan completed then. Prior to his latest injury, he had formerly been given no permanent work restrictions.

Because he had no prior history of ongoing functional limitations >6 months, Schedule V would apply, beginning at 5% whole person.

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I (This applies only to the Impairment Process.)			
If the history was significant enough to automatically qualify for a rating in these Utah Guides, apportion directly. See Chapter 1 of this guide for methodological notes on apportionment.			
Score	**0**	**1 pt.**	**2 pts.**
V-A. Time Lost from Work in the Last 12 Months Because of Symptoms in the Same Spinal Region	0	1-3 days	>3 days
V- B. Number of Prior Episodes in the Same Spinal Region	0	**1-3**	>3
V-C. Time since Last Episode/Injury	0	**1-3 Years**	<1year
V- D. Prior Permanent Work Restrictions Because of Problems in the Same Spinal Region	**None**	Temporary	Permanent
V-E. Prior Objective Testing to the Same Spinal Region: EMG-NCV, X-ray, MRI-CT, Bone Scan	0	If ever taken	**If taken within the last 2 years**
V-F. Prior to latest claim, what ongoing Medical, Chiropractic Visits, Physical Therapy Visits were received for an injury to the Same Spinal Region	0 -2 times in last 3 yrs	3-6 times in last 3 yrs	**>6 in last 3 yrs**
V-G. Spondylolysis with Spondylolisthesis		<25% slip	>25% Slip
			Prior History

1-2 pts. = no apportionment
3 pts. = 10% may be apportioned off as a prior rateable condition
4 pts. = 20% may be apportioned off as a prior rateable condition
5 pts. = 30% may be apportioned off as a prior rateable condition
6 pts. = 40% may be apportioned off as a prior rateable condition
7 pts. = 50% may be apportioned off as a prior rateable condition
8 pts. = 70% may be apportioned off as a prior rateable condition
9 pts. = 90% may be apportioned off as a prior rateable condition
≥ 10 pts. = 100% may be apportioned off as a prior rateable condition

EXAMPLE 5 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS (Whole Person Permanent Impairment)	**THORACIC-LUMBAR**
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%
Combine Impairments:	5%
Less Apportionment= 6 pts from table V = 40%, 40% of 5% (I-C.) = 2% WP	- 2%
Impairment Related to the Last Event:	3%

Example 6: Cervical-Thoracic Pain without Radiculopathy

Six months ago while at work, a 28 year-old male was sitting in the driver's seat of the vehicle he was driving, waiting at a red light, when he was struck from behind by a pickup truck traveling approximately 50 miles per hour. His diagnostic workup included plain x-rays and an MRI, which demonstrated moderate degenerative disc disease with desiccation and moderate bulges. He was treated with chiropractic manipulation, physical therapy, anti-inflammatories, and muscle relaxers. Although these treatments helped, he continued to complain of neck pain and mid-scapular pain, with associated headaches. He continued with occasional medication and he had to permanently modify his occupation to avoid extensive overhead work. His physical examinations did not disclose any overt pain behaviors and he had no prior history of cervical or thoracic injuries.

EXAMPLE 6 **SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS** **(Whole Person Permanent Impairment)**	**CERVICAL-THORACIC**
I-C. Medically documented moderate injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have imaging evidence of moderate to severe changes. Likely to have permanent activity restrictions.	5%
Combine Impairments:	5%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I &V):	
Impairment Related to the Last Event:	5%

Discussion: Although he continues to have pain in both the cervical and thoracic area, these are both considered under I-C and awarded 5% Whole Person (WP). Any additional impairment for headaches would not be awarded.

Example 7: Cervical-Thoracic Pain without Radiculopathy and With Clinical Manifestations of Overt Pain Behaviors

Six months ago, while at work, a 32-year-old female was sitting in the driver's seat, waiting at a red light, when she was struck from behind by a pickup truck traveling approximately 5 miles per hour, incurring no damage to either vehicle. She continued to complain of neck and thoracic pain. Her diagnostic workup included plain x-rays and an MRI, which were found to be within normal limits. She was treated with chiropractic manipulation, physical therapy, anti-inflammatories, and muscle relaxers. Although these treatments helped, she continued to complain of neck and mid-scapular pain, with associated headaches. She required occasional medication and was given permanent activity restrictions to avoid extensive overhead work, based on pain tolerance. Her physical examinations demonstrated pain behavior with both verbal and non-verbal communication of distress and suffering, including embellishing her medical history, exaggerated pain drawings, and providing responses on the physical examination inconsistent with known physiology. She denies any prior trauma or symptoms to this area.

EXAMPLE 7 **SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS**	**CERVICAL-THORACIC**
I-B. Medically documented minor injury events, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology. May have evidence of none to minimal changes on imaging and may have permanent activity restrictions.	3%
Combine Impairments:	3%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I &V):	

Impairment Related to the Last Event:	3%

Discussion: Residual symptoms in both the cervical and thoracic areas are both considered under I-B and awarded 3% WP. For ratings that fall between categories, pain behaviors may be considered for placement in a lesser impairment percentage category.

Example 8: Low-Back Pain with Radiculopathy (No Surgery)

A 53-year-old female dock worker injured her lower back while lifting an 80-lb box eight months ago. She initially had pain in her right leg down to the ball of her foot, with associated numbness, tingling, and weakness. She underwent an MRI, which demonstrated a L5-S1 HNP with right S1 nerve root displacement. Treatment has included an epidural steroid injection, physical therapy, medications, and bracing. She now has been declared medically stable with persisting back pain and occasional radiation pain symptoms down to the ball of her foot. She was released for work with permanent restrictions of occasional lifts of 40 lbs. Her physical exam continued to show an absent right ankle jerk, straight leg lift at 40 degrees, and leg atrophy of 2 cm comparing right to left. She has no significant history of back problems.

EXAMPLE 8 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS		**THORACIC-LUMBAR**
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%	7%
Combine Impairment: (Total Amount for Spine):		7%
I-G. Neurological: Persisting Radicular Neurologic Deficit. If the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16 modified from the AMA Guides 5th Edition, and combine the new radiculopathy rating, in place of the 3% listed here.	3% Combined	3%
Total Impairment Value Without Apportionment:		10%
Apportionment (The amount apportioned from Schedule I must agree with Schedules I &V):		
Final Impairment Related to the Last Event:		10%

This patient should be followed up at one year to assess for any additional radiculopathy that may be present.
*See Radiculopathy Schedule.

Example 9: Low-Back Pain (Post-Surgery)

A 48-year-old female dock worker injured her low back while lifting an 80-lb box nine months ago. She initially had pain in her right leg down to the ball of her foot, with associated numbness, tingling, and weakness. She underwent an MRI, which demonstrated a L5-S1 HNP with a right S1 nerve root displacement. Treatment included an epidural, physical therapy, medications, bracing, and eventually an L5-S1 discectomy four months ago. She has been declared medically stable and released for work with restrictions as tolerated. Her physical exam has essentially returned to normal except for her Achilles reflex, with complaints of occasional back and leg pain, stopping at the knee. She had no significant history of prior back pain.

EXAMPLE 9 SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS		Initial Event
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%
Combine Impairments:		10%
Apportionment:		
Final Impairment Related to the Last Event:		10%

Example 10: Low-Back Pain with Radiculopathy (Post-Surgery)

A 35-year-old female warehouse worker injured her low back while lifting a 50 lb box eight months ago. She initially had pain in her right leg down to the ball of her foot, with associated numbness, tingling, and weakness. She underwent an MRI, which demonstrated a L5-S1 HNP with a right S1 nerve root displacement. Treatment included an epidural steroid injection, physical therapy, medications, bracing, and surgical discectomy at L5-S1. She now has been declared medically stable and released for work with permanent restrictions permitting occasional lifts of 40 lbs. Her physical exam continues to show an absent right ankle jerk. Straight leg lift at 30 degrees produces radicular leg pain in a S1 pattern. She has leg atrophy of 2 cm compared right to left. She has had no significant history of prior back pain.

EXAMPLE 10 SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS		Initial Event
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%
Combine Impairment (Total Amount for Spine):		10%
II-H. Neurological: Persisting Radicular Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. modified from the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here. [See Next Schedule] *	3% Combined	3%
Combine Impairments:		13%
Apportionment:		0
Final Impairment Related to the Last Event:		13%

This patient should be followed up at one year to assess for any additional radiculopathy that may be present.
*See Radiculopathy Schedule.

Example 11: Low Back Pain with Foot Drop(Post-Surgery with persistent radicular findings that exceed 3% whole person.

A 35-year-old female warehouse worker injured her low back while lifting a 50 lb box. She initially had pain in her right leg down to the lateral aspect of her leg, with associated numbness, tingling, and the inability to dorsiflex her foot against gravity. She had an MRI, which demonstrated a L4-L5 HNP with right L5 nerve root displacement. Treatment included an epidural steroid injection, physical therapy, medications, bracing, and surgical discectomy at L4-L5. She was declared medically stable and released for work with permanent restrictions permitting occasional lifts of 20 lbs. Her physical exam demonstrated the inability to dorsiflex her right foot through a full range of motion against gravity. She was required to wear a dorsiflexion assist brace. She has leg atrophy of 2 cm compared right to left. Her pain was

minimal, but she did have decreased light touch perception and decreased sharp-dull recognition in the L5 distribution. She had no significant history of prior back pain and is now one-year post-surgery.

SENSORY DEFICITS* CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO NERVE ROOT DISORDERS (Severity Multiplier)		
Class	**Description of sensory loss or pain**	**% Sensory**
5	No loss of sensibility, abnormal sensation, or pain	0
4	Diminished light touch with or without minimal abnormal sensations or pain, forgotten during activity	20
3	Diminished light touch with some abnormal sensations or pain, interfering with activity	40
2	Decreased protective sensation (sharp dull discrimination) with abnormal sensations or moderate pain that may prevent some activity	60
1	Deep pain present, but no protective sensation (no sharp dull discrimination), severe pain or that prevents most activity	80
0	Absent sensibility, abnormal sensations or severe pain that prevents all activity	100

* Adapted and Modified from the AMA Guides 5th Edition, Table 15-15, page 424

Sensory component, = 60% of nerve multiplied by the L5 Sensory Nerve Root value, 5%, (see page 424, Table 15-15) = 3% Lower Extremity

MOTOR DEFICITS CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO LOSS OF FUNCTION RESULTING FROM NERVE DISORDERS (Upper or Lower Extremity Value)		
Class	**Description of Muscle Function**	**% Motor Deficit**
5	Active movement against gravity with full resistance	0
4	Active movement against gravity with some resistance	20
3	Active movement against gravity only without resistance	40
2	Active movement with gravity eliminated	60
1	Slight contraction and no movement	80
0	No contractions	100

* Adapted and Modified from the AMA Guides 5th Edition, Table 15-16, page 424

Motor Deficit, = 60% of nerve value multiplied by the L5 (see page 424, Table 15-16) Motor nerve value 37%, = 22% Lower Extremity 22% for the motor value combined with 3% for the sensory value = 24% Lower Extremity
24% Lower Extremity = 10% WP (100% Lower Extremity = 40% WP)

EXAMPLE 11 SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITION		Initial Event
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, post traumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%
Combine Impairment (Total Amount for Spine):		10%
II-H. Neurological: Persisting Radicular Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. modified from the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here.		10%
Final Impairment Related to the Last Event:		19%

* See Radiculopathy Schedule

Example 12: Spondylolisthesis without History

A 45-year-old male slipped and fell four feet, landing flat on his back six months ago. An x-ray demonstrated an L5 spondylolysis with a grade one spondylolisthesis. He was treated with a course of physical therapy and medication, and used a brace occasionally. He continued to have back pain and occasional leg pain to the back of his legs, but no reflex changes, atrophy, or dermatomal changes. He was released to work with permanent restrictions not to lift over 40 lbs, based on pain tolerance. He had no significant history of back pain.

EXAMPLE 12 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS		THORACIC-LUMBAR
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%	7%
Combine Impairments:		7%
Apportionment:		0%
Impairment Related to the Last Event:		7%

No apportionment is calculated. Prior to his fall he would not have qualified for an impairment rating.

Example 13: Spondylolisthesis with Radiculopathy and Without Prior History

A 45-year-old male slipped and fell four feet, landing flat on his back seven months ago. An x-ray demonstrated a L5 spondylolysis with a grade one spondylolisthesis and L5 bilateral foraminal narrowing. He was treated with a course of physical therapy and medication, and uses a brace occasionally. He continues to have back pain and moderate right leg pain to the outside of his foot. His physical exam demonstrates that a straight leg raise at 30 degrees causes dermatome leg pain. There is sensory loss in the L5 distribution. An EMG demonstrated fibrillations, consistent with a right L5 radiculopathy. A CAT scan demonstrated bilateral pars defects at L5, old in nature with severe foraminal stenosis. He has declined surgery and has been released to work with a permanent restriction not to lift over 30 lbs.He uses occasional medications and bracing. Prior to his industrial accident, he had no history of back pain or leg pain.

EXAMPLE 13 SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS		**THORACIC-LUMBAR**
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%	7%
Combine Impairment (Total Amount for Spine):		7%
I-G. Neurological: Persisting Radicular Neurologic Deficit. If the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16. modified from the AMA Guides 5th, and combine the new radiculopathy rating, in place of the 3% listed here. [See Radiculopathy Schedule]*	3% Combined	3%
Total Impairment Value Without Apportionment:	10%	

No apportionment is calculated. Prior to his fall he would not have qualified for an impairment rating.

Example 14: Spondylolisthesis with Radiculopathy and With Prior History

A 45-year-old male slipped and fell four feet, landing flat on his back seven months ago. An X-ray demonstrated an L5 spondylolysis with a grade one spondylolisthesis and L5 bilateral foraminal narrowing. He was treated with a course of physical therapy and medication, and used a brace occasionally. He continued to have back pain and moderate right leg pain radiating to the outside of his leg and to the top of his foot. His physical exam demonstrates that straight leg raise at 30 degrees on the right causes right leg dermatomal pain. He did have sensory loss in the L5 distribution. An EMG demonstrated fibrillations, consistent with a right L5 radiculopathy. A CAT scan demonstrated a bilateral pars defect at right L5, old in nature. He was released to work with permanent restrictions not to lift over 50 lbs, based on pain tolerance. He uses occasional medications and bracing. He had a prior history of back pain from when he hurt himself taking out very heavy garbage 11 months ago. With that episode he had x-rays taken, missed three days of work and saw his personal physician two times. During these visits, the physician noted he had radiculopathy with a positive straight leg raise, and sensation loss at the L5 distribution. Between his first and second episode, he continued to use a brace and NSAIDs intermittently.

Because he had no prior written information that would have resulted in functional work restrictions lasting >6 months, Schedule V would apply, beginning at 10% whole person because of his preexisting spondylolisthesis and radiculopathy.

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I (This applies only to the Impairment Process/Disability Process)			
If the history was significant enough to automatically qualify for a rating in these Utah Guides, apportion directly.			
Score	**0**	**1 pt.**	**2 pts.**
V-A. Time lost from work in the last 12 months because of symptoms in the same spinal region	0	**1-3 days**	>3 days
V-B. Number of prior episodes in the same spinal region	0	**1-3**	>3
V-C. Time elapsed since last episode/injury	0	1-3 Years	**<1 year**

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I (This applies only to the Impairment Process/Disability Process)			
V-D. Prior permanent work restrictions because of problems in the same spinal region	**None**	Temporary	Permanent
V-E. Prior objective testing to the same spinal region: EMG-NCV, X-ray, MRI-CT, Bone Scan	0	If ever taken	**If taken within the last 2 years**
V-F. Prior to latest claim, what ongoing medical, chiropractic visits, physical therapy visits were received for an injury to the same spinal region	**0-2 times in the last 3 yrs.**	3-6 times in the last 3 yrs.	>6 in the last 3 yrs.
V-G. Spondylolysis with Spondylolisthesis		**<25% slip**	>25% Slip
V-H. Radiculopathy (As objectified by Radiculopathy Schedule)			**Prior History***

9 pts. = 90% may be apportioned off as a prior rateable condition

EXAMPLE 14 **SCHEDULE I FORM FOR COMPUTING SPINAL IMPAIRMENTS**		**THORACIC -LUMBAR**
I-D. Medically documented moderate-severe injury event, subjective symptoms persisting for a minimum of six months, and clinical findings that are consistent with spinal pathology including imaging evidence of disc herniation(s) that displaced nervous tissue or spondylolysis with or without spondylolisthesis (Grade I or II). Should have permanent activity restrictions.	7%	7%
Combine Impairment (Total Amount for Spine):		7%
I-G. Neurological: Persisting Radicular Neurologic Deficit. If the neurological deficits exceed 3% WP, then calculate the deficits as described from tables 15-15 and 15-16 modified from the AMA Guides 5th Edition, and combine the new radiculopathy rating, in place of the 3% listed here. [See Radiculopathy Schedule]*	3% Combined	3%
Total Impairment Value Without Apportionment:		10%
Apportionment (Amount apportioned from Schedule I must agree with Schedules I &V):		-9%
Final Impairment Related to the Last Event:		1%

If there was no radiculopathy before his industrial lifting episode, the radiculopathy (3%) could not be apportioned. This radiculopathy would be subject to apportionment because it existed prior to his industrial lifting event.

Example 15: Prior History of Disc Problems Requiring Surgery and Now with a Recurrent Disc Herniation, Needing another Surgery

Four months ago, a 30-year-old secretary fell from her roller stool and injured her back. She was found to have a recurrent L4-L5 disc herniation. Two years earlier she had a non-work related L4-L5 disc surgical excision with moderate remaining symptoms but no radiculopathy or activity modification. She has now undergone repeat surgery for the recurrent L4-L5 disc. She has done well, with occasional back and leg pain, but no radicular symptoms.

EXAMPLE 15 SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS		Initial Event	Second Event
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%	
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	2%		2%
Combine Impairments:			12%
Apportionment:		10%	
Final Impairment Related to the Last Event:			2%

There is no rating given for the first disc excision, but she would be entitled to a 2% rating for the second operation because of the recurrent disc excision at the same level. There is no additional impairment for a recurrent disc treated conservatively, unless there is evidence of residual radiculopathy.

Example 16: Second Disc Injury, Treated Nonoperatively

A 40-year-old female slipped and fell at work, which left her with pain in her right quadriceps area, with numbness and weakness on standing. Her healing was protracted and therefore a MRI was obtained, demonstrating a L4-L5 far lateral disc protrusion, displacing the right L4 nerve root. She underwent a conservative program and eventually was declared stable with residual problems and no radiculopathy. Her history was significant with a prior non-industrial problem of a disc herniation at L5-S1, and surgical discectomy five years prior.

EXAMPLE 16 SCHEDULE II FORM FOR COMPUTING SPINAL IMPAIRMENTS		THORACIC-LUMBAR
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the first disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%	3%
Combine Impairments:		3%
Apportionment:		
Impairment Related to the Last Event:		3%

This is a different disc and receives the rating for a subsequent disc. The prior surgery is unrelated to the L4-5 level. If one were to include the rating for the prior disc, it would be deducted as preexisting, so the net result is the same. If one is asked to include all of the prior rateable condition impairment rating, then report the 10% and deduct it under apportionment.

Example 17: First Industrial Disc Injury, Second Disc Herniation Requiring a Second Surgery

A 32-year-old secretary fell from her roller stool and injured her back. Two years earlier she had a non-work related L4-L5 disc excision with moderate remaining symptoms and permanent activity modifications. She incurred an occupational low back injury, causing an L5-S1 herniated disc. This eventually required surgery and she was left with no radiculopathy; however, her pain and functional

status were not quite as they were before her occupational fall. Her spinal motion was found to be mildly decreased.

EXAMPLE 17 **SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS**		**Second Event**
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	2%	2%
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the 1st disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%	3%
Combine Impairments:		5%
Apportionment:		
Final Impairment Related to the Last Event:		5%

This is a different disc and receives the rating for the second operation and level. No rating is given for the prior surgery. [See explanation above.]

Example 18: Disc Injury, Undergoing Three Surgeries, Including a Fusion

A 40-year-old office worker lifted and twisted with a computer monitor, which caused sudden pain in the back and down the leg. He eventually had a L5-S1 disc excision. He returned to work, only to have recurrent back pain and eventually he had a second surgical procedure with a disc excision at the L4-L5 level. He returned to work. One year later, without an intervening injury, he began to develop progressive worsening back pain with no radiculopathy. He had his third surgical procedure of a L4-L5 and a L5-S1 disc excision and fusion with instrumentation. His fusion was solid at twelve months, with continued leg pain to his foot, 2 cm of leg atrophy and EMG changes consistent with unilateral radiculopathy. He continued to have back pain and so had the instrumentation removed, without an appreciable change in his condition. Prior to lifting the monitor, he had no significant history of back pain.

EXAMPLE 18 **SCHEDULE II FORM FOR COMPUTING SPINAL IMPAIRMENTS FOR INDIVIDUAL AREAS**				
SCHEDULE II. Use for Surgically Treated Spine Conditions		**Initial Event**	**Second Event**	**Third Event**
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%		
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the first disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%		3%	
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	2%		2%	2%

EXAMPLE 18 SCHEDULE II FORM FOR COMPUTING SPINAL IMPAIRMENTS FOR INDIVIDUAL AREAS				
II-F. Spinal Fusions or placement of a single" artificial disc" (For the first level fused that spans 2 vertebrae.)	3%			3%
II-G. Fusions or placement with an "artificial disc", additional level(s) (i.e. a fusion that spans 3 or more vertebrae) This is to be used only one time per level.	2%			2%
Combine Impairment (Total Amount for Spine):		10%	5%	7%
II-H. Neurological: Persisting Radicular Neurologic Deficit * (If, after 6 months,** the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. modified from the 5th Edition of the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here.	3% Combined			3%
Total Impairment Value Without Apportionment:		22%		
Apportionment:				

*See Radiculopathy Schedule

This patient should be followed up at one year to assess for any additional radiculopathy that may be present.
Notes: These impairments are listed separately for clarity though all are due to the same event.
No impairment is given for internal fixation device removal.

Example 19: Degenerative Disc Disease with Two-Level Decompression

Ten years ago, a 50-year-old man who does moderately heavy work fell at home. This left him with recurrent LBP with episodes ten years, six years, and two years ago. X-rays taken 6 years ago showed moderate to severe degenerative changes. A chiropractic physician treated him each time with his last visit two months before his industrial claim. For all of his prior episodes, he has missed a total of approximately ten days of work, seven of which have been in the last 12 months with no radiculopathy documented. He has had no prior MRIs or CT scans. Eight months ago, while lifting the tongue of a trailer, he had the onset of severe back pain, with subsequent development of a radiculopathy. After two months of conservative care, he eventually underwent a L4-L5 and a L5-S1 discectomy. He obtained moderately good results, with no residual radiculopathy, but is unable to be as active in his work as he was before lifting the trailer. He has been released with a permanent restriction permitting occasional lifting of 20-30 lbs, due to tolerance and risk.

The reason that 5% apportionment is not direct is because there is no written information that would have resulted in functional work restrictions lasting >6 months. Schedule V would therefore apply, beginning at 5% whole person to apportion off what he would have had before his industrial event.

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I (This applies only to the Impairment Process/Disability Process)			
Schedule I requires a minimum of six months duration of symptoms, from the time of the injury and the impairment rating.			
Score	**0**	**1pt.**	**2pts.**
V-A. Time lost from work in the last 12 months because of symptoms in the same spinal region	0	1-3 days	**>3 days**
V-B. Number of prior episodes in the same spinal region	0	**1-3**	>3
V-C. Time elapsed since last episode/injury	0	1-3 Years	**<1year**

SCHEDULE V. SEVERITY INDEXING FOR APPORTIONMENT OF SCHEDULE I (This applies only to the Impairment Process/Disability Process)			
V-D. Prior permanent work restrictions because of problems in the same spinal region	**None**	Temporary	Permanent
V-E. Prior objective testing to the same spinal region: EMG-NCV, X-ray, MRI-CT, Bone Scan	0	**If taken prior to 2 years**	If taken within the last 2 years
V-F. Prior to latest claim, what ongoing medical, chiropractic visits, physical therapy visits were received for an injury to the same spinal region	0 -2 times in last 3 yrs	3-6 times in last 3 yrs	**>6 in the last 3 yrs.**
V-G. Spondylolysis with Spondylolisthesis		<25% slip	>25% Slip
V-H. Radiculopathy (As objectified by Radiculopathy Schedule.)	**None**		Prior History

8 pts. = 70% of his maximal soft tissue award would be apportioned off as a prior rateable condition

EXAMPLE 19 **SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITION**		**Initial Event**	**Second Event**
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient		10%
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the 1st disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%		3%
Combine Impairments:			13%
Apportionment: = 8 pts. =70% I-C = 5%, 5% X 70% severity index = 4%		-4%	
Final Impairment Related to the Last Event:			9%

He does not have apportionment due to degenerative changes alone, but rather to the symptomatic and prior ratable status of those changes.

Apportionment only applies to the initial 5% pre-existing rateable condition.

Example 20: Compression Fractures with Prior History and Rating

Eight months ago, a 33-year-old roofer fell 18 feet and landed on his feet. He had immediate back pain and was taken to the hospital where x-rays demonstrated acute compression fractures of T11 (20%), T12 (30%) and L1 (10%). He was treated surgically with a three-level vertebral fusion and has now been declared stable. His complaints continue to be back pain with referral into the back of his legs. He had no objective radicular signs or neurological sequelae. He did have a history of an industrial back claim from a lifting injury three years ago, for which he received a 5% rating and was given permanent lifting restrictions of 30 lbs.

EXAMPLE 20 SPINE IMPAIRMENT EXAMPLE COMPRESSION FRACTURES WITH PRIOR HISTORY	
Pathology	**Impairment**
IV-A-3: 26% to 50% T12 (30%) Worst	6%
IV-A-6: Multiple fractures: (Second, T11 (20% Compression) and third, L1 (10% Compression)	2% + 2%
IV-A-5: Fusion – If it is required to extend the fusion over three or more vertebral, combine	5% one time
Final Impairment Related to the Last Event (combined):	15%
(Prior rating not related) Apportionment:	0
Impairment Industrial is responsible for:	15%

The 5% prior rating is not considered for apportionment, as it bears no relationship to the current injury or impairment.

Example 21: Burst Fracture Requiring Fusion

Eighteen months ago, a 40-year-old male fell twenty-five feet, incurring a burst fracture at L1 of 60%, with partial neurological loss. He eventually underwent a fusion that extended from T10 to L3. He is now medically stable, and with complete restoration of his neurological deficit. He had no prior spinal pain.

EXAMPLE 21 SPINE IMPAIRMENT EXAMPLE BURST FRACTURES WITH FUSION	
Pathology	**Impairment**
IV-A-4: Burst Fractures-Compression of 60%	15%
IV-A-6: Fusion- If it is required to extend the fusion over three or more vertebral segments	5%
Impairment (combined):	19%
(Prior rating not related) Apportionment:	0
Impairment Industrial is responsible for:	19%

Example 22: Coccygodynia

Twelve months ago, a 33-year-old female slipped and fell on the ice, landing on her buttocks. She had x-rays taken, showing a deviated coccyx. No prior films were available for comparison and she denies having any significant history of problems prior to the fall. She has had conservative treatment and continued to have intermittent pain with trouble sitting. A rectal examination was significant for a palpable step off of the sacral-coccygeal joint and reproduction of her usual and typical pain with provocative motion.

EXAMPLE 22 SPINE IMPAIRMENT COCCYGODYNIA	
Pathology	**Impairment**
VI.3.3g i - Healed fracture(s) with displacement, deformity and residuals signs(s) involving: h. Coccyx, displacement	3%
Impairment:	3%
Apportionment:	0%
Impairment Industrial is responsible for:	3%

Example 23: Prior Non-Industrial Injury with Two Industrial Injuries and Ratings

An 18-year-old male injured his L4-L5 disc while playing high school football in 1985. He subsequently re-injured this same area a second time doing summer construction work 10 years later lifting heavy bags of concrete. X-rays were taken, showing degenerative disc disease. He was recommended to find work that would not require him lifting over 40 lbs. His treatment consisted of physical therapy following both incidents. Following this 1st work-related accident, he was rated in accordance with the 3rd Edition (Revised) of the AMA Guides 5th Edition, and was awarded a 10% (WP) impairment with 5% due to the 1985 football injury and 5% due to the 1987 construction industrial accident. 20 years later, while working on an oil rig, he injured his L4-L5 area again, requiring a lumbar discectomy. He has again been declared medically stable.

EXAMPLE 23 SPINE IMPAIRMENT PRIOR NON INDUSTRIAL INJURY WITH TWO INDUSTRIAL INJURIES AND RATINGS		
Date	**Pathology**	**Impairment**
3rd Injury	II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient
	Impairment:	10%
1985 & 1987 Injuries Apportionment of his prior rating by current Physical Impairment Guides I-C. Medically documented injury and subjective symptoms persisting for a minimum of six months with a clinical history of a significant injury event. May have imaging evidence of moderate to severe degenerative changes. Should have permanent activity restrictions.		-5%
	Additional Impairment Industrial is responsible for: (related to 1996)	5%

Discussion: From his 3rd industrial claim he incurred another separate injury, requiring surgery. Therefore, for the sake of consistency it is recommended that the impairment he would have been awarded for his 1st and 2nd injuries be deducted calculated using these current *Impairment Guides*. In this case he would have directly qualified for 5% WP for his prior injuries, (documentation of severity of injury, imaging findings and recommended work restrictions), which allow direct apportionment of his new total award.

Example 24: Prior Industrial Rating With Another System, Now With a New Injury

A 30-year-old male injured his back at work in 1991 after falling 3 feet landing on his back. He was treated and x-rays demonstrate degenerative disc disease. He was diagnosed with mechanical back pain and an impairment of 14% WP was calculated using the 3rd Edition of the *AMA Guides 5th Edition* "Range of Motion Model." He was given permanent restrictions to not lift over 40 lbs, probably based on pain tolerance. Three years later while working for another employer, he re-injured his back, which later required surgery, including a two-level discectomy and fusion with now persistent, worsened pain. He has now returned to work and has been declared medically stable.

EXAMPLE 24 SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS		**Initial Event**	**Second Event**
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient		10%
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the first disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%		3%
II-F. Spinal Fusions or placement of a single" artificial disc" (For the first level fused that spans 2 vertebrae.)	3%		3%
II-G. Fusions or placement with an "artificial disc", additional level(s) (i.e. a fusion that spans 3 or more vertebrae) This is to be used only one time per level.	2%		2%
Combine Impairments:			18%
Apportionment:		5%	
Final Impairment Related to the Last Event:			13%

Discussion: Apportionment is indicated. With his prior significant history, he would have qualified for 5% whole person according to these 2024 Utah Guides. This is based on his prior history, mechanism of injury and work restrictions. The 14% awarded prior for soft tissue complaints was inflated. He has incurred another separate injury. For the sake of consistency, it is recommended that the maximum impairment he would have been awarded under these current 2024 *U Guides* (5%), rather than the 14% would be used to apportion off his preexisting condition. In this case it is 5% WP, which is apportioned off of his new total award.

Example 25: Prior Industrial Rating With Another System, Now With a New Injury

A 40-year-old male incurred an industrial accident in 1985. He underwent a L5-S1 discectomy and was declared medically stable and given a 5% impairment. In 1988, he herniated another disc at L4-L5 and in 1989, underwent an L4-L5 discectomy. He was declared stable and was given another 5% impairment rating. In 2003, while working for another employer, he fell off a ladder, causing pain in his quadriceps area. He was later diagnosed with a L3-L4 disc herniation. He elected to have a third discectomy - this time with a fusion from L3-S1. This was carried out in 2004 and he was declared medically stable. He has continued to have pain in the quadriceps area, with a loss of quadriceps strength, loss of the knee reflex,

and a unilaterally positive EMG (with changes in the L4 nerve root distribution). His fusion is solid and he has been declared medically stable.

EXAMPLE 25
SCHEDULE II FORM FOR COMPUTING SPINAL IMPAIRMENTS FOR INDIVIDUAL AREAS

SCHEDULE II. Use for Surgically Treated Spine Conditions		**Initial Event**	**Second Event**	**Third Event**
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%		
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the 1st disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%		3%*	3%
II-E. Second or subsequent spinal operation (not to include minimal invasive surgical procedures) in a given spinal region, including herniated discs, spondylolisthesis, segmental instability, and spinal stenosis.	2%		2%*	2%
II-F. Spinal Fusions or placement of a single" artificial disc" (For the first level fused that spans 2 vertebrae.)	3%			L3-L4 3%
II-G. Fusions or placement with an "artificial disc", additional level(s) (i.e. a fusion that spans 3 or more vertebrae) This is to be used only one time per level.	2%			L5-S1 2%* L4-L5 2%*
Combine Impairment (Total Amount for Spine):		10%	5%	12%
II-H. Neurological: Persisting Radicular Neurologic Deficit * (If, after 6 months, the neurological deficits exceed 3% WP, then calculate the deficits as described using tables 15-15 and 15-16. modified from the 5th Edition of the AMA Guides 5th Edition, and combines the new radiculopathy rating, in place of the 3% listed here.	3% Combined			3%
Total Impairment Value Without Apportionment:		27%		
Apportionment:		10%	5%	12%

*See Radiculopathy Schedule

Example 26: Impairment Related to One Event and Operation on Two Discs

A 35-year-old male picked up a 100-lb container and fell, hurting his back. He had pain in his right leg and his foot. He had sensory changes, reflex changes, and muscle weakness that were all consistent with S1 radiculopathy. A MRI demonstrated a L5-S1 HNP, displacing his right S1 nerve root and a broad based L4-L5 central disc bulge, producing moderate spinal stenosis. Conservative treatment of six weeks did not give him acceptable relief; therefore, he elected L5-S1 and L4-L5 discectomies. He is now four months

post-op and he is left with occasional low back pain, but without radiculopathy. Prior to his industrial event, he had no significant history of back pain.

EXAMPLE 26 ***SCHEDULE II. USE FOR SURGICALLY TREATED SPINE CONDITIONS***		**Initial Event**
II-C. First spinal surgery at one level in a given spinal region, including significant disc abnormality, posttraumatic changes, spondylolisthesis, instability, and spinal stenosis (includes foraminal stenosis). (Assigned one time per patient.)	10% one time per patient	10%
II-D. Medically documented injury with continued pain, decreased motion, and imaging evidence of a 2nd disc herniation that displaces nervous tissue and has occurred from the same or subsequent injury at a different level than the 1st disc herniation and this 2nd disc space was treated either conservatively or surgically. This would also include surgery for posttraumatic changes, spondylolisthesis, segmental instability, and spinal stenosis. (This is applied only one time per level per patient and is not to be applied to levels explored, but not found to require partial discectomy or foraminotomy.)	Combine 3%	
Combine Impairments:		13%
Apportionment:		
Final Impairment Related to the Last Event:		13%

If instead of a 2-level discectomy during one operation, the second disc was operated on at a later time, there would be another 2%, II-C, combined.

Example 27: Impairment Related to Fractured Pelvis

A 40-year-old female was struck by a pickup truck, fracturing her sacrum with residual dislocation. After 6 months she was left with chronic sacroiliac pain. Prior to this industrial event, she had no significant history of back pain.

EXAMPLE 27 **SCHEDULE VI Fractures of the Pelvis**	**Initial Event**
VI g. Sacroiliac joint dislocation with non-anatomical reduction	15%
Apportionment:	0%
Final Impairment Related to the Last Event:	15%

Example 28: Impairment Related to Percutaneous Discectomy At 2 Levels

A 26-year-old male injured his back lifting a 45 box of automotive supplies. He complained of pain in his back and down to the back of his legs. An MRI was taken showing a concentric disc bulge, grade II at both the L4-L5 and the L5-S1 levels. Over 3 months he failed to make improvement with conservative treatment and was given a "percutaneous discectomy at the L4-5 and L5-S1 levels with minimal improvement. He is now 6 months post procedure with continued low back pain.

EXAMPLE 28 **SCHEDULE II. SURGICALLY TREATED SPINE CONDITIONS BASED ON FUNCTIONAL-ANATOMIC and DIAGNOSTIC BASED CRITERIA (FAD)** **(Whole Person Permanent Impairment)**	**Initial Event**
II-A. II-A. First minimally invasive spinal surgery such as a percutaneous or and endoscopic procedure done as an attempt to decompress a herniated disc, performed at one level in a given spinal region, for a significant disc abnormality, (Assigned one time per patient.)	5%
II-B. Minimally invasive spinal surgery, performed at another level than the first in a given spinal region, for significant disc abnormality. 2% (one time per disc)	2%
Apportionment:	0%
Final Impairment Related to the Last Event:	7%

Chapter Four: Upper Extremity

To be used to clarify the AMA 5th Edition Chapter 16

4.0 Introduction to Upper Extremity

The 5th Edition of the *American Medical Association Guides to the Evaluation of Permanent Impairment (AMA Guides 5th Edition)* provides a number of methods that can be utilized in the calculation of the impairment rating in the upper extremity. To provide rating methodology that facilitates consistency and objectivity the Utah impairment committee has reviewed, simplified and updated the upper extremity rating process within the Functional, Anatomic and Diagnostic (FAD) model as listed below. As with other sections of the *Utah Supplemental Guides for Rating Permanent Impairment (Utah Guides)*, the rater is reminded that the rating of a part should never be greater than that which is allowed for the whole part. This would mean that the maximum rating a physician could award for the upper extremity would be equal to 100% upper extremity (UE), (amputation of the upper extremity or shoulder disarticulation) which is equal to 60% Whole Person. Impairment ratings for the upper extremity have not been adjusted for hand dominance, therefore hand dominance should not be considered in the determination of disability (AMA 5th Edition, p. 435, 16.1B).

In that there are a number of different ways an extremity can be rated, Utah has adopted the following worksheet based upon the FAD methodology. This worksheet not only facilitates the process for those doing complicated impairment ratings, but greatly helps those reading the rating to better understand the derivation of the final number.

Only the following methods from the *AMA Guides 5th Edition* that are listed on this worksheet have been approved for rating impairments of the upper extremity. Physicians and/or raters are reminded that the individual components of this upper extremity chapter are to be combined.

The rater is requested to utilize this upper extremity worksheet along with the worksheets found on page 436-437 of the 5th Edition. The utilization of these worksheets not only facilitates the process for those doing these complicated ratings, but also those reviewing the rating to understand the derivation of the final number.

4.1 2024 Utah's Upper Extremity Rating Guidelines

4.1 2024 UTAH'S UPPER EXTREMITY RATING GUIDELINES WORKSHEET

Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to Utah Guides

Total impairment is not to exceed 60% whole person

Name:_____Age_____Sex_____Date_____

Side • R • L

Diagnosis:_____

Schedules to use for a rating of the Upper Extremity per Utah's Supplemental Impairment Guides		Section # (Page)	% Upper Ext
Functional	Range of Motion including Ankylosis	16-4 (450)	
Anatomic	Finger and Hand Impairment Methodology	16-1a (436)	
	Amputation	16-2 (441)	
	Peripheral Nerve Disorders	16-5 (480-495)	
	Utah's CRPS type 1 or 2 (See page 86)	16-5e (495)	
	Vascular	16-6 (497)	
	Shoulder bursitis/cuff tendinitis	Page 87 Utah's	
	Rotator cuff tear	Page 87 Utah's	
	Acromioclavicular joint	Page 87 Utah's	
	Other - Define	Page 87 Utah's	
Diagnosis Based	Entrapment Neuropathies	Page 87 Utah's	
	Dermatological	18 (173)	
	Impairments Due to Other Disorders (Specify)	16-7a (499)	
	Arthroplasty	16-7b, (505)	
	Musculotendinous Impairment	16-7c (506)	
	Utah's Specific Upper Extremity Neuro-Muscular Impairments	Page 90 Utah's	
Stand Alone: Utah's Specific Upper Extremity Painful Organic Syndromes Not to be Combined with Other Ratings		Page 90 Utah's	
Total Upper Extremity Impairment:			

4.1a. Schedules in AMA 5th Not to be Used for Upper Extremity Ratings in Utah

Carpal Tunnel Syndrome (495) *Use Utah's Upper Extremity Entrapment Neuropathies*
Strength Testing for Grip and Pinch, (507) except as found under Utah's Upper Extremity Neuro-Muscular Impairments.[71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81]
Tendonitis 16-7d (507) *Use Utah's Painful Upper Extremity Painful Disorders*
Manual Muscle Testing 16-8c (509) [82] *Must have true neurological weakness and use16-10, 16-11*
Criteria for Rating Impairment of One Upper Extremity 13-16 (338)
Criteria for Rating Impairments Related to Chronic Pain in One Upper Extremity Table 13-22 (343)

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[71] The coefficient of variation as a measure of sincerity of effort of grip strength, Part I: the statistical principle. Shechtman O. Journal of Hand Therapy, 14(3):180-187 20241.
[72] Sensitivity of the Jamar Dynamometer in detecting submaximal grip effort. Ashford RF, Nagelberg S, Adkins R. American Journal of Hand Surgery, Volume A, 21(3):402-405 1996.
[73] Shechtman O. The coefficient of variation as a measure of sincerity of effort of grip strength, Part II: sensitivity and specificity. Department of Occupational Therapy, College of Health Professions, University of Florida, Gainesville 32610, USA. oshechtm@hp.ufl.edu
[74] Coefficient of variation in maximal and feigned static and dynamic grip efforts. Dvir Z, American Journal of Physical Medicine and Rehabilitation, 78(3):216-221 1999.
[75] Grip strength testing reliability. Hamilton A, Balnave R, Adams R. Journal of Hand Therapy, 7(3):163-170 1994.
[76] Voluntary control of submaximal grip strength. Niebuhr BR, Marion R. American Journal of Physical Medicine and Rehabilitation, 69(2):96-101 1990.
[77] The injured upper extremity and the Jamar five-handle position grip test. Goldman S, Cahalan TD, An K-N, American Journal of Physical Medicine and Rehabilitation, 70(6):306-308 1991.
[78] Coefficient of Variation as a Measure of Subject Effort. Simonsen, JC. Archives of Physical Medicine and Rehabilitation, 76(6):516 1995
[79] Tredgett MW, Davis TR. British Journal of Hand Surgery, 25(4):372-375 20241.
[80] Tredgett M, Pimble LJ, Davis TR. British Journal of Hand Surgery, 24(4):426-428 1999.
[81] Taylor-Shechtman, Poor reliability of grip strength, *Journal of Hand Therapy*, July/Sept
[82] Strength evaluation: voluntary muscles strength testing remains subjective and therefore inconsistent. Until a precise way of measuring muscle contraction is developed, manual muscle testing is not to be used. It should also be noted that the correlation of strength with performance of activities of daily living is poor and that increased strength does not necessarily equate with increased function.

4.1b. Peripheral Nerve Tables to be Used – Sensory Deficits

SENSORY DEFICITS* CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO NERVE ROOT DISORDERS (Severity Multiplier) The following tables are to be used in the calculation of neurological impairments. They have been adapted and modified from the 5th edition of the AMA Guides 5th Edition, Table 15-15, page 424 and from tables 13-23 & 13-24 and are to be used		
Class	**Description of sensory loss or pain**	**% Sensory**
5	No loss of sensibility, abnormal sensation, or pain	0
4	Diminished light touch with or without minimal abnormal sensations or pain, forgotten during activity	20
3	Diminished light touch with some abnormal sensations or pain, interfering with activity	40
2	Decreased protective sensation (sharp dull discrimination) with abnormal sensations or moderate pain that may prevent some activity	60
1	Deep pain present, but no protective sensation (no sharp dull discrimination), severe pain or that prevents most activity	80
0	Absent sensibility, abnormal sensations or severe pain that prevents all activity	100

4.1c. Motor Deficits

MOTOR DEFICITS* CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO LOSS OF FUNCTION RESULTING FROM NERVE DISORDERS (Upper or Lower Extremity Value)		
Class	**Description of Muscle Function**	**% Motor Deficit**
5	Active movement against gravity with full resistance	0
4	Active movement against gravity with some resistance	20
3	Active movement against gravity only without resistance	40
2	Active movement with gravity eliminated	60
1	Slight contraction and no movement	80
0	No contractions	100

* Adapted from the 5th edition of the *AMA Guides,* Table 15-16

4.2 Utah's Chronic Regional Pain Syndromes (CRPS)Type 1 or 2 for Upper Extremities

Methodology for the calculation of CRPS for the upper extremity is found in section 2.1, on page 17.

The Rater is to first use the amputation values as found on page 440 table 16-4 that identifies the portion of the upper extremity that is involved. This percentage is then multiplied by the percentage of sensory deficits and pain as described on page 482, Table 1610 or 4.1b. Sensory Deficit Chart.

4.3 Upper Extremity Ratings for Shoulder Conditions

The following schedule is to be used for individuals who incur shoulder injuries related to work. These are to be combined with other ratings as indicated in the FAD worksheet.

SCHEDULE VII Upper Extremity Ratings for Shoulder Conditions Only The Findings with The Highest Rating Is to Be Used These Are Combined with Other Conditions as Described In The FAD Worksheet It is recommended that the findings be present for >6 consecutive months despite non-surgical or surgical treatment. Upper extremity impairment for these categories listed below are combined with ROM with the total not to exceed 18% Recommend MRI or arthroscopic pictures be available, confirming findings.		
Condition	**Findings/Treatment**	**Upper Ext Rating**
Shoulder bursitis/cuff tendinitis/Labral Tears Pain consistent with impingement/ tendonitis confirmed by impingement signs on exam and/or increased signal in the rotator cuff on MRI.	Non Surgical Treatment, Residual pain above 90 degrees of elevation (flexion or abduction)	2 %
	Surgery with good results, residual pain with minimal reduction in activity.	3 %
	Surgery with fair results, residual pain that prevents many activities,	5 %
Rotator cuff tears and/or SLAP Lesions	Medically documented injury with rotator cuff pathology involving the supraspinatus tendon and/or SLAP lesions confirmed arthroscopically. Treatment provided *non-surgically or surgically* with minimal residual symptoms.	3 %
	Medically documented injury, with rotator cuff tears or SLAP lesions confirmed arthroscopically. Treatment provided *non surgically or surgically* with moderate residual symptoms.	4%
	Medically documented injury involving a rotator cuff tears involving the supraspinatus, infraspinatus, and teres major and/or SLAP lesions confirmed arthroscopically with severe residual symptoms. *Treatment provided nonsurgically or surgically.*	6 %
Global Tear	Non Repairable tears, latissimus dorsi transfer or scaffolding techniques.	8 %
Acromioclavicular joint resection arthroplasty	Resection is primarily for chronic arthritic conditions and is curative. No impairment is indicated	0 %.
AC Joint Separations	Acute grade 1 Acute injury-grade 2	0% 2%
	Acute injury-grade 3 Significant dysfunction with image findings and physical findings of significant hypertrophy and/or subluxation	3%
Sternoclavicular joint dysfunction	Treated *surgically or nonsurgically.*	4%
Biceps tendon rupture/release	Proximal rupture/release treated *surgically or nonsurgically.*	3%
	distal rupture/release treated *surgically or nonsurgically.*	4%

4.4 Utah's Upper Extremity Neuro-Muscular Impairments

Upper Extremity Impairments Due to Entrapment Neuropathies should be severity indexed according to table VII with impairment assigned. It should be noted that healed entrapment neuropathies may not have an impairment.

Utah's Upper Extremity Strength Evaluations

Upper extremity strength evaluations, (grip and pinch strength) should only be used as described in this section. The rater is not to award grip strength alone or in combination with other ratings.

4.4a. Constrictive Tenosynovitis

Constrictive tenosynovitis is a condition that is readily corrected by surgery, therefore Table 16-29 should only be applied to post-operative patients.

4.4b. Peripheral Nerve Entrapment

Carpal Tunnel Syndrome (CTS) and Ulnar Nerve Wrist (UNW)

Median nerve entrapment neuropathy (Carpal Tunnel Syndrome) and ulnar nerve entrapment neuropathy (in Guyon's canal) are rated when the patient is at MMI whether or not surgery has been performed.The symptoms of entrapment neuropathy are pain and/or numbness in the distal distribution of the involved nerve.There are no reliable objective physical exam signs with sufficient sensitivity and specificity to be useful in mild or moderate entrapment neuropathy. For this reason, to qualify for an impairment rating, nerve conduction testing (electrodiagnostic studies) is required to prove the diagnosis is correct. Unfortunately, NCS/EMG is not 100% sensitive or specific. Needle examination (EMG) only records denervation changes seen in severe, long-standing entrapment.

The response to treatment is not an acceptable method of diagnosis for impairment rating purposes. Surgical relief of symptoms consistent with CTS in a person with normal nerve conduction studies may reflect true CTS with a false negative NCS, or may reflect a true negative NCS and a placebo response to treatment. Like other treatments for symptoms, surgery has a 40% placebo response rate.[83]

Post-operative nerve conduction testing is not necessary for impairment rating purposes. *A single clearly abnormal pre or post operative study (as defined below) is however necessary for any impairment rating other than zero.*

There is no national standard that defines how slow conduction should be, or how long distal latencies should be before a nerve conduction study is considered to be abnormal. Each professional society, laboratory and each electromyographer determines their own definitions. This unfortunately leads to some variability in the diagnosis of entrapment neuropathy. These studies should be interpreted by *physicians* qualified by training and experience to interpret the results. Limb temperature should be stated in the report, as normal nerves in cold limbs have slowed nerve conduction (hence prolonged latencies). Limb temperature should be > 31 degrees Celsius.

Very mild cases of entrapment neuropathy exist with "believable" symptoms, but normal nerve conduction studies. While a treating physician may choose to diagnose and treat based on believable symptoms with normal nerve conduction testing, these cases do not rise to the level of impairment.This is similar to tension headache, irritable bowel syndrome, and dysmenorrhea, in which believable symptoms are present with **no** impairment.

Grip strength is not used to rate impairment, as the post-operative palmar tenderness that limits grip can take up to 2 years to stop improving.[84] In symptomatic individuals pain limits grip and thus prevents the individual from exerting his/her true best effort.

The physical exam findings for impairment rating purposes are decreased sensation documented by 2-point discrimination testing (> 6 mm is abnormal), and then muscle atrophy and/or weakness of thumb

[83] *Acta Orthopaedica Scandinavia* 1972; 142 (supplement): 1-95
[84] Katz, *J of Hand Surgery* 1995; 20A: 549-555

opposition measured with a pinch dynamometer as specified in the JAMA.[85] Symptoms also include nocturnal symptoms, paresthesias with activity, and symptoms within the appropriate nerve distribution.

4.4c. Nerve Entrapment: Near the Elbow

Median Nerve (Anterior Interosseous or MNE), Ulnar Nerve Elbow (UNE), and Radial Nerve Elbow (RNE)

Median and ulnar nerve entrapment can be reliably confirmed, if moderate or severe, on nerve conduction testing and EMG. Radial nerve entrapment is rare and confirmation of entrapment can be problematic. Since these entrapments are more proximal, they affect the innervation of many more muscles than the entrapments at the wrist. Minimal entrapments may have more impairment than entrapment at the wrist. Surgical release of these entrapments (especially ulnar nerve entrapment) is more likely to leave residual problems than is entrapment surgical release at the wrist.

4.4d. Application of the Nerve Entrapment Tables

Cases that meet some of, but not all of, the criteria for one of the above categories should be rated using the adjacent category of lesser severity. For example, the extremely rare case of carpal tunnel syndrome with 2-point discrimination greater than 6 mm with delayed, but not with severely abnormal nerve conduction testing would be rated using category 3, not category 4.

Delayed nerve conduction means the distal motor latency and/or the distal sensory latency is prolonged according to established norms.

*Severely abnormal nerve conduction testing is defined as absent sensory latencies, or evidence of MOTOR axon loss manifest as decreased Compound Muscle Action Potential (CMAP) amplitude (usually < 5 millivolts) and/or with polyphasic motor action potentials, fibrillation potentials and positive waves on needle EMG of hand intrinsic muscles.

CRPS, Type 2 that follows carpal tunnel release surgery would be rated by use of the CRPS section (16-5e) (495) and not by use of the nerve entrapment section.

Severe entrapments that have severely abnormal nerve conduction testing (defined above) and total loss of sensibility and severe objective motor involvement, (2-point discrimination > 15 mm would be rated according to methodology found in the *AMA Guides 5th Edition, 5th Edition,* Upper Extremity Chapter, Section 16.5, pages 480-490.This would include complications of carpal tunnel infection either from steroid injection or from surgical carpal tunnel release that results in major nerve damage and those that require major corrective tendon transfer surgery to restore some of hand intrinsic muscle function.

Abnormal sensory exam is defined as distorted superficial tactile sensibility (2-point discrimination >6 mm), with some abnormal sensations or slight pain that interferes with some activities. Abnormal motor exam is defined as loss of >70% of strength of a normal contralateral extremity with acceptable effort being expended.

[85] D'Arcy, McGee. Does this Patient Have Carpal Tunnel Syndrome? JAMA 20240; 283; 3110-3117

4.4e. Guidelines for Placement of Patients within Schedule VIII

Schedule VIII a. **Residual Signs-Symptoms Grade**	**I**	**II**	**III**	**IV**
Nocturnal paresthesia	+	+	+	+
Paresthesia with Activity	+	+	+	+
2 pt discrimination	< 6mm	6-8mm	9-15mm	>15mm
Symptoms are within the anatomical distribution of the involved nerve	+	+	+	+
Atrophy	0	0	+/-	+
% of Strength loss Index 1.	<10	10-30	31-60	>61
Phalen's test positive	+	+	+	N/A
Tinel's test positive	+	+	+	+
Nerve Conduction Studies Positive 2.	+	+	++	++
Electromyographic changes present	-	+/-	+	++

1. Normal Strength - Abnormal Strength
   _____ = % of Strength loss Index
   Normal Strength

   These tests should be done with the methodology and validation of effort as described on page 508 of the AMA Guides-5th Edition. If there is bilateral involvement, use the normative data tables found in the AMA 5th Edition, Chapter 16, page 509.

2. For nerve conduction testing, the Impairment Committee recommends uniform adoption of the current AAEM Criteria

4.4f. Utah's Specific Upper Extremity Impairments Due to Entrapment Neuropathy

SCHEDULE VIII b. **Utah's Specific Upper Extremity Impairments Due to Entrapment Neuropathy**						
ENTRAPPED NERVE	**ENTRAPMENT SITE**	**Grade I**	**Grade II**	**Grade III**	**Grade IV**	**Complete Motor and Sensory Loss**
Median	Elbow	7	15	35	50	65
Median	Wrist	5	10	20	30	44
Ulnar	Elbow	3	10	30	40	50
Ulnar	Wrist	3	10	30	35	40

4.4g. Specific Upper Extremity Painful Organic Syndromes

Utah Specific Upper Extremity Painful Organic Syndromes is appropriate where there is the presence of a substantiated diagnosis and functional disability yet measurable impairment may be lacking. These are musculoskeletal conditions that are characterized by pain, weakness or diminished function with use of the affected member that is attributed to a lesion or condition in the soft tissue (capsule, ligament, tendon, fascia, muscle). Documentation must support a specific diagnosis that has been present for longer than six months, with consideration of the mechanism, history, duration of the injury, the initial presenting signs such as swelling and ecchymosis, changes on MRI, arthrogram, and/or intraoperative findings, swelling, pannus, or effusions). Maximum medical improvement (MMI) can occur with or without surgical treatment. If surgery is recommended but the patient elects not to proceed, MMI occurs on that day. The date the patient qualifies for an impairment rating or when the lesion or condition reaches medically stable may be different; however, both are required for the impairment.

4.4h Utah's Specific Upper Extremity Painful Organic

SCHEDULE IX. UTAH'S SPECIFIC UPPER EXTREMITY PAINFUL ORGANIC SYNDROMES Post Operative Trigger Finger or Thumb, Intrinsic tightness post trauma, Bursitis, Chronic Tendonitis, de Quervain's tendonitis, TFCC injuries, pisiformectomy, excision hook of the hamate, Wrist intersection syndrome, Ganglions and masses, Epicondylitis, medial or lateral, Strains or Sprains of Fingers, Thumb, Hand, Wrist, Elbow, Shoulder. Crush injuries of the digits with cold intolerance (These Upper Extremity percentages are 60% whole person)				
Residual Symptoms Grade	I	II	III	IV
History of Mechanism of Injury	Minimal	Mild	Moderate	Severe
Initial presenting signs	Minimal	Mild Swelling	Moderate Swelling	Significant Swelling-ecchymosis
Image Findings X Ray, CT, MRI, Arthrogram	None	Minimal	Moderate	Significant
Intraoperative Findings	N/A	Minimal	Significant swelling, pannus, or effusions	Significant swelling, pannus, or effusions
Impact on Activities	Minimal impact	abnormal sensations or pain that does not prevent most activities	pain or abnormal sensations that interferes or prevents some activities	pain or abnormal sensations that interferes or prevents most activities
Ratings: Shoulder and or Elbow and or Wrist and or Hand	0%	2%	4%	6%

These are standalone impairments that are otherwise not accounted for within these guides or the 5th Edition of the AMA Guides 5th Edition.The rater is to place the findings into each category and then average the grades to establish the Impairment.

As with all conditions, the impairment may be calculated using different methodologies, with the highest being reported.

4.5 Examples of Upper Extremity Impairment Ratings

Example 1: Rotator Cuff Repair

A 45-year-old postman is seen for shoulder pain after a fall at work 2 weeks earlier, where he slipped on some ice and landed on his outstretched arm. He was found to be unable to abduct his arm past 60 degrees with considerable pain. He was suspected of having a rotator cuff tear and was taken to surgery, where he was found to have a complete, full thickness (>5cm) tear of the rotator cuff. This was surgically repaired with an open procedure with a distal clavicle resection. He underwent a course of physical therapy and has been declared medically stable. He has been left with severe (3/5) weakness and associated loss of motion in his shoulder.

His ROM findings are listed below:

ROM Shoulder Impairment (Upper Extremity) Figures 16-40, 43, 43, 46. (AMA Guides 5th Edition, p. 466)					
Flexion (180°)	Extension (50°)	Abduction (170°)	Adduct (40°)	Internal Rotation (80°)	External Rotation (60°)
100/5%	30/1%	100/4%	30/1%	60/2%	60/0%
				Total Shoulder Range of Motion Impairment:	13%

His impairment for his rotator cuff:

Upper Extremity Ratings for Shoulder Conditions Findings must be present for >6 consecutive months despite non-surgical or surgical treatment upper extremity impairment for these categories listed below and combined with ROM is not to exceed 18% **Recommend MRI or Arthroscopic Pictures be Available, Confirming Findings**		
Condition	**Findings/Treatment**	**Rating**
Rotator cuff tear Partial or full thickness	Confirmed by MRI, treated non-surgically or surgically with residual pain that markedly limits activity.	6 %

His impairment is 6% for his rotator cuff repair. 6% combined with 13% is 18% upper extremity or 11% whole person.

2024 UTAH'S UPPER EXTREMITY RATING GUIDELINES WORKSHEET *Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to UTAH Guides*			
Schedules to use for a rating of the Upper Extremity per UTAH Guides		**Section # (Page)**	**% Upper Ext** Current [i]
Functional	Range of Motion including Ankylosis	16-4 (450)	13%
Diagnosis Based	Upper Extremity Rotator Cuff Impairments	Page * Utah's 2024 Guides	6%
		Total Upper Extremity Impairment:	18%

Example 2: Shoulder Fracture

One year ago, a 58-year-old male incurred a fracture to his right shoulder after a fall at work. He has undergone therapy and has been left with a weak, stiff and painful upper extremity with associated numbness secondary to a partial neuropathy of the radial nerve. After undergoing physical therapy, he has been declared medically stable. (ROMs are listed below.)

An impairment is calculated using the Utah's Impairment Guides and the AMA 5th Edition.

For his neurological loss, the radial nerve is weighted at 45% UE.

Table 16-16 Maximum Upper Extremity Impairment due to Unilateral Sensory or Motor Deficits
AMA Guides 5th Edition (p. 492)

Nerve	Sensory Deficits	Motor Deficits	Combined Motor and Sensory deficits
Radial (upper arm) with Loss of Triceps	5	42	45

He qualifies for 20% loss of the radial nerve.

Table 16-11 Determining Impairment Of The Upper Extremity Due To Motor And Loss Of Power Deficits Resulting From Peripheral Nerve Disorders Based On Individual Muscle Rating
(Upper or Lower Extremity Value)
Adapted and modified from the AMA Guides 5th Edition, Table 15-15, page 424

Class	Description of Muscle Function	% Motor Deficit
3	Active movement against gravity only without resistance	20%

20% for the total value of the radial nerve x 45% equals 9% upper extremity for motor and sensory loss.

Loss of Motion

ROM Shoulder Impairment
(Upper Extremity)
Figures 40, 43, 44, 46 *AMA Guides 5th Edition* (p. 466)

Flexion (180°)	Extension (50°)	Abduction (170°)	Adduct (40°)	Internal Rotation (80°)	External Rotation (60°)
130/3%	30/1%	120/3%	30/1%	40/3%	70/0%
				Total Shoulder Range of Motion Impairment:	**11%**

For his loss of motion, he would have **11% Upper extremity.**

2024 UTAH'S UPPER EXTREMITY RATING GUIDELINES WORKSHEET *Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to UTAH Guides*			
Schedules to use for a rating of the Upper Extremity per UTAH Guides		**Section # (Page)**	**% Upper Ext** Recent
	Peripheral Nerve Damage	16-5 (480-495)	9%
Functional	Range of Motion including Ankylosis	16-4 (450)	11%
		Total Upper Extremity Impairment:	19%

These combine to equal 19% upper extremity or 11% whole person

Chapter Five: Lower Extremity

5.0 Introduction to Lower Extremity: AMA 5th Edition Chapter 17

The 5th Edition of the *American Medical Association Guides to the Evaluation of Permanent Impairment (AMA Guides 5th Edition)* provides a number of methods that can be utilized in the calculation of the impairment rating in the lower extremity. To provide a rating methodology that facilitates consistency, the impairment committee has reviewed and simplified the lower extremity rating methodology as listed below. As with other sections of the *Utah Supplemental Guides for Rating Permanent Impairment (Utah Guides)*, the rater is reminded that the total rating of a part of an extremity should never be greater than that which is allowed for the whole extremity. This would mean that the maximum rating that a physician can award would be equal to 100% amputation of the lower extremity (hip disarticulation), which is awarded 40% to the whole person.

In that there are a number of different ways an extremity can be rated, Utah has adopted the following worksheet. This worksheet not only facilitates the process for those doing complicated impairment ratings, but greatly helps those reading the rating to better understand the derivation of the final number.

Only those methods from the *AMA Guides 5th Edition* that are listed on the Lower Extremity Worksheet have been approved for rating impairments of the lower extremity. Physicians are reminded that these individual components of this lower extremity chapter are to be combined.

Lower Extremity Ratings for Specific Conditions

Lower Extremity Impairments due to the following conditions should be identified and combined as described and outlined in The Lower Extremity Worksheet. Findings should be present for greater than three to six consecutive months despite non-surgical or surgical treatment. Lower extremity impairment for the conditions listed below may be combined with other functional and diagnostic conditions.

5.1 2024 Lower Extremity Rating Guidelines Worksheet - See Below

5.1 2024 UTAH LOWER EXTREMITY RATING GUIDELINES WORKSHEET

Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to Utah Guides
100% Lower Extremity is 40% Whole Person

Name:_____Age_____Sex_____Date_____

Side • R • L
Diagnosis:_____

Schedules to use for a rating of the Lower Extremity per UTAH Guides			*Section # (Page)*	% Lower Ext Current [i]
Functional	Range of Motion including Ankylosis		17.2f (533)	
Anatomic	Limb Length Discrepancy		17.2b (528)	
	Amputation		17-2i (545)	
	Skin Loss		17-2k (550)	
	Peripheral Nerve Injury		17.2l (550)* 16-5 (480-495)	
	CRPS type 1 or 2		16-5e (495) Utah's	
	Vascular		17-38 (553)	
	These are Mutually Exclusive: Arthroscopic findings take Precedence	Arthritis of Joints (544)	17-2.h (544)	
		**Acute Arthroscopic Osteochondral Lesions:	UTAH's 2024 Guides	
Diagnosis Based (545)	Fractures		17.2j (546)	
	Ligament Injuries		17.2j (546)	
	Partial Meniscectomies (2% L.E. Per Partial Meniscectomy, up to a max of 7% L.E. For each meniscus) Meniscal repair: Rate like partial meniscectomy Meniscal transplant, rate 50% of total meniscectomy		17.2j (546)	
	Foot Deformities		17.2j (546)	
	Hip and Bursitis		17.2j (546)	
	Lower Extremity Joint Replacements		17.2j (546)	
Stand Alone: Lower Extremity Painful Organic Syndromes That Are Not Otherwise Accounted for Within These Guides or the AMA Guides 5th Edition - 5th Edition (Page #, Utah's 2024 Impairment Guides) Not to be Combined with Other Ratings			Utah's 2024 Guides	
Stand Alone: Patellofemoral pain and crepitation with a history of direct trauma			17-31 (544)	
Total Lower Extremity Impairment Value Without Apportionment:				
Final Impairment Related to the Last Event:				

Signature and Professional Title of Physician doing Rating:

5.1a. Motor Deficits Worksheet

MOTOR DEFICITS* CLASSIFICATION FOR DETERMINING IMPAIRMENT DUE TO LOSS OF FUNCTION RESULTING FROM NERVE DISORDERS (Lower or Lower Extremity Value) Adapted and modified from the AMA Guides 5th Edition, Table 15-16, page 424		
Class	**Description of Muscle Function**	**% Motor Deficit**
5	Active movement against gravity with full resistance	0
4	Active movement against gravity with some resistance	20
3	Active movement against gravity only without resistance	40
2	Active movement with gravity eliminated	60
1	Slight contraction and no movement	80
0	No contractions	100

* Adapted and modified from the 5th Edition of the *AMA Guides 5th Edition,* Table 15-16, page 42

5.1b. Schedules in AMA 5th not to be used for rating impairments in the Lower Extremity

Atrophy 17.2d (530)
Causalgia/Reflex Sympathetic Dystrophy 17.2m (553) *Use methodology as found in the upper extremity section describing CRPS type 1 or 2, 16-5e (495)*
Gait derangement (336, 529)
Manual Muscle Testing 17-2e [86] except for severe compartment syndromes and other conditions where there has been major muscle mass loss for which an impairment cannot be extrapolated any other way. *For weakness due to true neurological weakness and use 16-10, 16-11*

5.1c. CRPS for Lower Extremities

Methodology for the calculation of CRPS in the lower extremity will be done as described on

The Rater is to first use the amputation values as found on page 545 table 17-32 that identifies the portion of the lower extremity that is involved. This % is then multiplied by the % of sensory deficits and pain as described on table 16-10 in the upper extremity section.

[86] Strength evaluation: voluntary muscles strength testing remains somewhat subjective until a precise way of measuring muscle contraction is generally debatable. It should also be noted that the correlation of strength with performance of activities of daily living is poor and that increased strength does not necessarily equate with increased function. Page 507

5.2 Lower Extremity Arthroscopic Cartilaginous Impairments

It is readily recognized that arthroscopic findings are the most accurate in identifying a joint's current condition and prognosis, including findings expected from recent events compared to longstanding or degenerative conditions. Schedule X allows the impairment rater to outline what findings are present, the severity of the findings and why they are there, based on the arthroscopic findings. For cartilage implants, rate below as original lesion.

<table>
<tr><th colspan="4">SCHEDULE X. ACUTE ARTHROSCOPIC OSTEOCHONDRAL LESIONS
Impairments Lower Extremity
(Chondromalacia is not considered an acute lesion)
Recommend Pictures Be Taken, Confirming Findings
Calculate the lower extremity impairment by combining Size% + Stage %+ Location = Total %LE</th></tr>
<tr><th>Total Area of lesions

(Greatest Diameter of Lesion with sharp margins)</th><th>Stages of Acute Articular Cartilage Separation

(No Award for Successful Re-implantation or Transplantation)</th><th>Location

Weight Bearing Surface = 2%
Non-weight bearing Surface = 0%
(Patellofemoral Joint is Considered a Weight Bearing Joint)</th><th>Current Event i</th></tr>
<tr><td rowspan="6">< 1 cm = 2%

1-1.5 cm = 4%

>1.5 cm = 6%</td><td rowspan="6">Partial Thickness Cartilage Loss 3%

Full Thickness Cartilage loss, Bone Exposed 6%</td><td>Hip</td><td></td></tr>
<tr><td>Knee</td><td></td></tr>
<tr><td>Medial</td><td></td></tr>
<tr><td>Lateral</td><td></td></tr>
<tr><td>Patella femoral</td><td></td></tr>
<tr><td>Ankle</td><td></td></tr>
<tr><td colspan="3">Lower Extremity Cartilage Impairment:</td><td></td></tr>
</table>

5.3 Lower Extremity Painful Organic Syndromes

These are musculoskeletal conditions that are characterized by pain, weakness or diminished function with use of the affected member that is attributed to a lesion or condition in the soft tissue (capsule, ligament, tendon, fascia, muscle). Documentation must support a specific diagnosis that has been present for longer than six months, with consideration of the mechanism, history, duration of the injury and the initial presenting signs such as swelling and ecchymosis. Maximum medical improvement (MMI) can occur with or without surgical treatment. If surgery is recommended but the patient elects not to proceed, MMI occurs on that day. The date the patient qualifies for an impairment rating or when the lesion or condition reaches medically stable may be different; however, both are required for the impairment.

<table>
<tr><th colspan="5">SCHEDULE XI. UTAH'S SPECIFIC LOWER EXTREMITY PAINFUL ORGANIC SYNDROMES
Ganglions and masses, Chronic medial or lateral Strains or Sprains, Bursitis, tendonitis, Crush injuries of the digits with cold intolerance
(Lower Extremity% is 40% whole person)</th></tr>
<tr><td>Residual Symptoms Grade</td><td>I</td><td>II</td><td>III</td><td>IV</td></tr>
<tr><td>History of Mechanism of Injury</td><td>Minimal</td><td>Mild</td><td>Moderate</td><td>Severe</td></tr>
<tr><td>Initial presenting signs</td><td>Minimal</td><td>Mild Swelling</td><td>Moderate Swelling</td><td>Significant Swelling-ecchymosis</td></tr>
</table>

Image Findings X Ray, CT, MRI, Arthrogram	None	Minimal	Moderate	Significant
Intraoperative Findings	N/A	Minimal	Significant swelling, pannus, or effusions	Significant swelling, pannus, or effusions
Impact on Activities	Minimal impact	abnormal sensations or pain that does not prevent most activities	pain or abnormal sensations that interferes or prevents some activities	pain or abnormal sensations that interferes or prevents most activities
Ratings: Hip-Knee-Ankle and Foot (LE)	0%	2%	4%	6%

These are standalone impairments that are otherwise not accounted for within these guides or the AMA Guides 5th Edition. The rater is to place the findings into each category and then average the grades to establish the Impairment.

As with all conditions, the impairment may be calculated using different methodologies, with the highest being reported.

5.4 Examples of Lower Extremity Impairment Ratings

Example 1: Crush Injury

8 months ago, a 28-year-old male severely injured his foot when a car ran over it. Fortunately, there were no broken bones. Although initially he had significant swelling, it resolved over time with a residual painful foot. On physical examination, it was noted that he did not have vascularity, sweat, nail or hair pattern changes. He has been declared medically stable with normal ROM and residual pain that continues to interfere with high stress or loaded activities.

SCHEDULE XI. UTAH'S SPECIFIC LOWER EXTREMITY PAINFUL ORGANIC SYNDROMES Ganglions and masses, Chronic medial or lateral Strains or Sprains, Bursitis, tendonitis, Crush injuries of the digits with cold intolerance (Lower Extremity% is 40% whole person)				
Residual Symptoms Grade	I	II	III	IV
History of Mechanism of Injury	Minimal	Mild	**Moderate**	Severe
Initial presenting signs	Minimal	Mild Swelling	**Moderate Swelling**	Significant Swelling-ecchymosis
Image Findings X Ray, CT, MRI, Arthrogram	None	Minimal	Moderate	Significant
Intraoperative Findings	N/A	Minimal	**Significant swelling, pannus, or effusions**	Significant swelling, pannus, or effusions

SCHEDULE XI. UTAH'S SPECIFIC LOWER EXTREMITY PAINFUL ORGANIC SYNDROMES Ganglions and masses, Chronic medial or lateral Strains or Sprains, Bursitis, tendonitis, Crush injuries of the digits with cold intolerance (Lower Extremity% is 40% whole person)				
Impact on Activities	Minimal impact	abnormal sensations or pain that does not prevent most activities	**pain or abnormal sensations that interferes or prevents some activities**	pain or abnormal sensations that interferes or prevents most activities
Ratings: Hip-Knee-Ankle and Foot (LE)	0%	2%	**4%**	6%

This impairment would best fit into a Grade III category or 4% LE or 2% whole person

Example 2: Meniscus Tear

6 months ago, a 44-year-old male twisted his knee with symptoms of swelling and locking. He was diagnosed with a medial meniscus tear and taken to surgery where he was found to have a bucket handle tear of the medial meniscus. This was debrided back to a stable rim. His postoperative course was unremarkable and he has been declared stable with minimal symptoms.

2024 UTAH LOWER EXTREMITY RATING GUIDELINES WORKSHEET *Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to Utah Guides* *100% Lower Extremity is 40% Whole Person*			
Schedules to use for a rating of the Lower Extremity per UTAH Guides		***Section # (Page)***	**% Lower Ext** Current [i]
	Partial Meniscectomies (2% L.E. Per Partial Meniscectomy, up to a max of 7% L.E. For each meniscus) Meniscal repair: Rate like partial meniscectomy Meniscal transplant, rate 50% of total meniscectomy	17.2j (546)	2%
		Total Lower Extremity Impairment Value Without Apportionment:	**2%**
		Final Impairment Related to the Last Event:	**2%**

Example 3: ACL, Meniscus Tear, Osteochondral Lesion

A 33-year-old male is seen for an impairment rating for the residual loss that he has of his left knee. He states that he was in his usual state of health until February 5, 1999. At that time, he was driving freight and in the process of doing his job, he slipped off the freight truck trailer approximately four feet straight down, putting full weight on the left knee and as a result it buckled underneath him. He eventually had an MRI that showed an ACL tear and a partial lateral meniscus tear. He was taken into surgery, where he was found to have a complete tear of the anterior cruciate ligament of the left knee and a longitudinal tear of the posterior horn of the lateral meniscus of his left knee, for which he underwent a partial meniscectomy. He was also found to have an acute osteochondral defect, with its greatest diameter of 1.6

cm, full thickness to bone on the weight bearing surface of the lateral femoral condyle left knee. His rehabilitation was completed with full ROM, and mild ACL laxity (17-33)

Schedule X and the Lower Extremity Worksheet are used below in rating the impairment:

SCHEDULE X. ACUTE ARTHROSCOPIC OSTEOCHONDRAL LESIONS Impairments Lower Extremity Recommend Pictures Be Taken, Confirming Findings Calculate the lower extremity impairment by combining Size% + Stage %+ Location = Total %LE			
Total Area of lesions (Greatest Diameter of Lesion)	**Stages of Acute Articular Cartilage Separation** (No Award for Successful Re-implantation or Transplantation)	**Location** Weight Bearing Surface = 2% Non-weight bearing Surface = 0% (Patellofemoral Joint is Considered a Weight Bearing Joint)	**Current Event** i
< 1 cm = 2% 1-1.5 cm = 4% **>1.5 cm = 6%**	Partial Thickness Cartilage Loss 3% **Full Thickness Cartilage loss, Bone Exposed 6%**	Knee	
		Medial	
		Lateral	14%
		Patella femoral	
		Subtalar	
		Lower Extremity Cartilage Impairment:	**14%**

[i] That which precipitated the need for care as compared to those findings that are present, absent the new findings from the current event

2024 UTAH LOWER EXTREMITY RATING GUIDELINES WORKSHEET *Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to UTAH Guides*				
Schedules to use for a rating of the Lower Extremity in UTAH			***Section No# (Page)***	**% Lower Ext** Current i
Functional	Range of Motion including Ankylosis		17.2f (533) 17-10	0
Anatomic	Limb Length Discrepancy		17.2b (528)	
	Amputation		17-2i (545)	
	Skin Loss		17-2k (550)	
	Peripheral Nerve Injury		17.2l (550) 16-5 (480-495)	
	CRPS type 1 or 2		16-5e (495)	
	Vascular		17-38 (553)	
	These are Mutually Exclusive: Arthroscopic findings take Precedence	Arthritis of Joints (544)	17-2.h (544)	
		**Acute Arthroscopic Osteochondral Lesions: Schedule IX	Page * Utah's 2024 Guides	14
Diagnosis Based (545)	Fractures		17.2j (546)	
	Ligament Injuries		17.2j (546)	7
	Partial Meniscectomies (2% L.E. Per Partial Meniscectomy, up to a max of 7% L.E. For each meniscus)		17.2j (546)	2

	Foot Deformities	17.2j (546)	
	Hip and Bursitis	17.2j (546)	
	Lower Extremity Joint Replacements	17.2j (546)	
Stand Alone: Lower Extremity Painful Organic Syndromes That Are Not Otherwise Accounted for Within These Guides or the AMA Guides 5th Edition - 5th Edition (Page #, Utah's 2024 Impairment Guides) Not to be Combined with Other Ratings		Utah's 2024 Guides	
Stand Alone: Patellofemoral pain and crepitation with a history of direct trauma		17-31 (544)	
		Combined Value Final Impairment Related to the Last Event:	**22% LE 9% WP**

[i]That which precipitated the need for care as compared to those findings that are present, absent the new findings from the current event

Example 4: CRPS

A 22-year-old male slipped off the second rung of a ladder, falling backwards. His right ankle sustained an inversion injury as he landed on a rock. Due to persistent symptoms, he eventually underwent an ankle reconstruction surgery. Post-operatively, he developed progressive allodynia initially over the dorsal foot, and later over the entire foot up to the ankle. Symptoms persisted despite treatment. He is able to ambulate without a cane, but his gait is antalgic. A triple phase bone scan confirmed asymmetric delayed pooling in the affected limb, and x-rays demonstrated localized osteoporosis. Edema, allodynia and mottling were noted on the exam. The affected foot was 2 degrees C cooler than the left foot. Nail appearance in the right foot showed curved, "talon-like" nails, which were different from the left foot. The skin appearance was smooth, and non-elastic, and there was a lack of hair on the dorsal right foot when compared with the left. Joint stiffness, with decreased passive motion was noted. Ankle plantarflexion was to 15 degrees, with extension to 5 degrees. He has been declared medically stable and an impairment rating is calculated.

Rating:
From Table 16-10, on page 482 of the 5th Edition, the severity index is graded as 40% (grade 3, with pain that interferes with some activities). This is multiplied by the maximal impairment for an amputation at the level of the ankle (Syme), which is 100% foot (62% lower extremity, or 25% whole person, as noted in Table 17-32, on page 545), yielding a 40%-foot impairment (25% lower limb or 10% whole person) 40% x 62% = 25% LE

For CRPS, the patient would receive a 40%-foot (25% lower limb or 10% whole person) impairment.

The patient would receive a 10% foot (7% lower extremity or 3% whole person impairment) for decreased plantar flexion, and another 10% foot (7% lower extremity or 3% whole person impairment) for decreased extension.

This results in a 36% lower extremity or 14% whole person.

2024 UTAH LOWER EXTREMITY RATING GUIDELINES WORKSHEET

Section/Page numbers correspond to 5th Edition of the AMA Guides 5th Edition unless stated to correspond to UTAH Guides

Schedules to use for a rating of the Lower Extremity in UTAH			***Section No# (Page)***	**% Lower Ext** Current i
Functional	Range of Motion including Ankylosis		17.2f (533) 17-10	14%
Anatomic	Limb Length Discrepancy		17.2b (528)	
	Amputation		17-2i (545)	
	Skin Loss		17-2k (550)	
	Peripheral Nerve Injury		17.2l (550) 16-5 (480-495)	
	CRPS type 1 or 2		16-5e (495)	25%
	Vascular		17-38 (553)	
	These are Mutually Exclusive: Arthroscopic findings take Precedence	Arthritis of Joints (544)	17-2.h (544)	
		**Acute Arthroscopic Osteochondral Lesions: Schedule IX	Page * Utah's 2024 Guides	
Diagnosis Based (545)	Fractures		17.2j (546)	
	Ligament Injuries		17.2j (546)	
	Partial Meniscectomies (2% L.E. Per Partial Meniscectomy, up to a max of 7% L.E. For each meniscus)		17.2j (546)	
	Foot Deformities		17.2j (546)	
	Hip and Bursitis		17.2j (546)	
	Lower Extremity Joint Replacements		17.2j (546)	
Stand Alone: Lower Extremity Painful Organic Syndromes That Are Not Otherwise Accounted for Within These Guides or the AMA Guides 5th Edition - 5th Edition (Page #, Utah's 2024 Impairment Guides) Not to be Combined with Other Ratings			Utah's 2024 Guides	
Stand Alone: Patellofemoral pain and crepitation with a history of direct trauma			17-31 (544)	
			Combined Value Final Impairment Related to the Last Event:	**36% LE 14% WP**

Chapter Six: Introduction To Traumatic Brain Injuries (TBI) or Concussions

6.0 Traumatic brain injuries, (TBI) or Concussion

For severe residual from head trauma, the rater is to utilize "Table 13-2 of the AMA Guides for rating impairment of consciousness and awareness secondary to head trauma." For those residual symptoms that occur from TBI or concussions can be challenging to prove and therefore become difficult to calculate defensible and consistent impairment ratings. Schedule XII compliments and more accurately clarifies Class 1 of Table 13-2 of the AMA Guides for rating impairment of consciousness and awareness secondary to head trauma.

For a worker to qualify for an impairment rating secondary to a residual TBI or concussion the rater should wait at least 6 months, following the injury, to make certain the residual symptoms have become permanent. Because residual headaches are often associated with neck pain, the 5% whole person impairment calculated under the Utah 2024 non-surgical spinal section, schedule 1-b or 1-c, encompasses any impairment for residual headaches related to cervical impairments.

To calculate the % of impairment for a TBI injury, the rater is to note the severity percentage of each of the 17 identified categories. If there is not enough information to rate a category, the rate is to use 0% and not include that question in the denominator.

SCHEDULE XII Traumatic Brain Injury[87] or Concussions **For an impairment rating to be considered as Traumatic brain injury (TBI), one of the following Mechanisms of injury the following *must* have occurred:** ● **Head being struck with an object** ● **Head striking a hard object or surface** ● **Forces generated from a blast or explosion**				
Percent Whole Person for Residual TBI Symptoms or Concussions				
Mechanism of Injury				
	Grade 1 Severity 0%	**Grade 2 Severity 5%**	**Grade 3 Severity 9%**	**Grade 4 Severity 14%**
Mechanism of Injury	Relatively minor harm to the affected individual's head with no visual soft tissue damage Example: A person is involved in a minor MVA with minimal vehicle damage. The head is not bumped or contused. They are able to walk and talk without any noticeable difficulties	These injuries typically involve minimal tissue damage, such as soft tissue swelling, limited pain or discomfort, and a low likelihood of long-term complications. Example: A person slips on a wet floor and hits their head against a wall. They experience a brief moment of dizziness and a small bump forms on their forehead. They are able to walk and talk without any noticeable difficulties.	Moderate injuries may require medical evaluation and treatment to prevent complications or to facilitate proper healing. Example: A cyclist is involved in a collision with a car and is thrown off their bike, hitting their head on the pavement. They lose consciousness for a short period and experience confusion upon regaining consciousness. There's a visible laceration on their scalp, and they complain of a persistent headache and some nausea. They are taken to the emergency room, where a CT scan reveals a minor concussion. The individual is kept under observation for a few hours and is advised to follow up with a neurologist.	Severe injuries require immediate and intensive medical intervention to stabilize the individual, manage pain, and prevent further harm. Example: A construction worker falls from a significant height and lands on their head. They are unconscious when first responders arrive at the scene. There's a visible deformity in the skull, and bleeding is evident. The person is rushed to the hospital, where a CT scan reveals a severe traumatic brain injury with multiple fractures and intracranial bleeding.
Immediate Clinical Signs				
Glasgow Coma Scale	Score of 15	Score of 14-13, brain injury	Score of 12, moderate injury	Score <11, severe brain injury.

[87] Medicine Diagnostic Criteria for Mild Traumatic Brain Injury Physical Medicine and Rehabilitation Archives of The American Congress of Rehabilitation 2023;104: 1343−55 journal homepage: www.archives-pmr.org

Loss of consciousness immediately following injury	No Loss of consciousness	Loss of consciousness approximately 5 min	Loss of consciousness approximately 6-15 min	Loss of consciousness greater than 15 min
Alteration of mental status immediately following the injury as evidenced by: -reduced responsiveness or inappropriate responses to external stimuli; slowness to respond to questions or instructions; agitated behavior; -inability to follow two-part commands; -disorientation to time,	None	Mild	Moderate	Severe
Complete or partial amnesia for events immediately following the injury (or after regaining consciousness). If post-traumatic amnesia cannot be reliably assessed (eg, due to polytrauma or sedating analgesics), retrograde amnesia (ie, a gap in memory for events immediately preceding the injury) can be used as a replacement for this criterion.	None	Post-traumatic amnesia up to 12 hours after the event.	Post-traumatic amnesia 12-24 hours after the event.	Post-traumatic amnesia greater than 24 hours
Acute Signs and Symptoms				
Acute neurologic signs	None	Some observed motor incoordination upon standing	Significant observed motor incoordination upon standing	Seizure, or tonic posturing immediately following injury).
Acute physical symptoms: headache, nausea, dizziness, balance problems, vision problems, sensitivity to light, and/or sensitivity to noise.	None	Minimally present	Moderately present	Markedly present
Clinical Imaging and Laboratory Findings				
Trauma-related intracranial abnormalities on computed tomography or structural magnetic resonance imaging. Objective Findings: X Ray, CT, MRI, EEG	None	Contusions-lacerations	Significant soft tissue contusions-lacerations	Skull fractures Brain parenchymal damage
Elevated blood biomarker(s) indicative of intracranial injury.	None	None	Present	Markedly present
Chronic Symptoms				
Cognitive symptoms: feeling slowed down, "mental fog," difficulty concentrating, and/or memory problems.	None	Minimally present	Moderately present	Markedly present

Residual Headaches	Minimal headaches, one to 2 a month.	Moderate headaches, 2x a week, Characterized as throbbing in nature with minimal impact on activities.	Frequent vascular headaches 3x to 6x a week, characterized as throbbing in nature, with or without nausea and vomiting, and associated with moderate impact on activities	Daily headaches characterized as throbbing in nature, accompanied by nausea and vomiting, and associated with an inability to perform activities
Emotional symptoms: uncharacteristic emotional lability and/or irritability.	None	Minimally present	Moderately present	Markedly present
Medications needed	None	Daily preventive	Daily preventive and occasional abortive- two - three time a week	Daily preventive and frequent abortive-more than 3 times a week
Impact on Activities	Minimal impact	Abnormal sensations or pain that does not prevent most activities.	Pain or abnormal sensations that interfere or prevent some activities.	Pain or abnormal sensations that interfere or prevent most activities.

Glasgow Coma Scale [88] The Glasgow Coma Scale is the most widely used scoring system used in quantifying level of consciousness following traumatic brain injury. It is used primarily because it is simple, has a relatively high degree of interobserver reliability, and because it correlates well with outcome following brain injury.

Glasgow Coma Scale

Chose one response in each category	Score
Eye Opening Response	
Spontaneous	**4**
· To Speech	**3**
· To Pain	**2**
· None	**1**
Best Motor Response	
Obeys Command	**6**
· Localizes Pain	**5**
· Flexor Withdrawal to Pain	**4**
· Abnormal Spastic Stereotypes Flexion Posture	**3**
· Extensor Response at Elbow	**2**
· No Movement	**1**
Verbal Response	
Oriented Conversation	**5**
· Confused Conversation	**4**
· Inappropriate Words	**3**
· Incomprehensible Sounds	**2**
· No Vocalization	**1**
Total Score Possible	**3 to 15**

[88] Teasdale, C., & Jennett, B. (1974). Assessment of coma and impaired consciousness. A practical scale. Lancet, 2, 81-84.

Worksheet for the Calculation of Residual TBI Symptoms or Concussions				
Mechanism of Injury				
	Grade 1 Severity 0%	**Grade 2 Severity 5%**	**Grade 3 Severity 9%**	**Grade 4 Severity 14%**
1. Mechanism of Injury				
2. Glasgow Coma Scale				
3. Loss of consciousness				
4. Alteration of mental status immediately following the injury				
5. Complete or partial amnesia				
6. Acute neurologic signs				
7. Acute Physical Symptoms				
8. Trauma-related intracranial abnormalities				
9. Elevated blood biomarker(s)				
10. Cognitive symptoms:				
11. Residual Headaches				
12. Emotional symptoms:				
13. Medications needed				
14. Impact on Activities				
Score				
	Score /14 = or % whole person			

Example 1: TBI-Concussion.

A 23-year-old male was working on a scaffolding project, 20 feet in the air, when he lost his footing and fell, striking his head as he landed on the ground. He was found to be unconscious for about 10 min and regained consciousness enroute to the hospital. Upon arrival at the hospital, he was confused, with his Glasgow coma score at 12. He was found to be somewhat unstable with balance, having headaches and photophobia. A CT scan revealed a small parietal skull fracture with a small epidural hematoma. He was kept overnight for observation and discharged with a neurologist follow-up. Upon discharge, he continued to have amnesia 24 hours after the event with some dizziness and photophobia. Over the next few months, he participated in cognitive therapy, to improve his memory and concentration. He also worked with a physical therapist to regain his balance and coordination. His headaches became less frequent, 2-5 x a month, his dizziness subsided, and he was able to engage in longer conversations without becoming overwhelmed. He started incorporating light exercise into his routine, helping him regain his strength and confidence. As the weeks went by, he began a gradual return to normalcy. At 6 months, he was declared MMI and returned to his full duties, without restrictions. He continued with his Cymbalta daily with no abortive medications needed, for his persistent headache prophylaxis.

Worksheet for the Calculation of Residual TBI Symptoms or Concussions				
Mechanism of Injury				
	Grade 1 Severity 0%	**Grade 2 Severity 5%**	**Grade 3 Severity 9%**	**Grade 4 Severity 14%**
1.Mechanism of Injury			**X**	
2. Glasgow Coma Scale			**X**	
3. Loss of consciousness			**X**	
4. Alteration of mental status immediately following the injury			**X**	
5. Complete or partial amnesia				**X**
6. Acute neurologic signs	**X**			
7. Acute Physical Symptoms		**X**		
8. Trauma-related intracranial abnormalities			**X**	
9. Elevated blood biomarker(s)	**0**	**0**	**0**	**0**
10. Cognitive symptoms:	**X**			
11. Residual Headaches			**X**	
12. Emotional symptoms:	**X**			
13. Medications needed			**X**	
14. Impact on Activities	**X**			
Score	4 x 0 = 0	1x 5 =5	7 x 9 =63	1 x 14=14
	Score 82/13= 6.31 or 6% whole person			

Medicine Diagnostic Criteria for Mild Traumatic Brain Injury Physical Medicine and Rehabilitation Archives of The American Congress of Rehabilitation 2023;104: 1343−55 journal homepage: www.archives-pmr.org

Teasdale, C., & Jennett, B. (1974). Assessment of coma and impaired consciousness. A practical scale. Lancet, 2, 81-84.

Chapter Seven: Miscellaneous Impairments

7.0 Impairment Rating Schedule Secondary to Rib Fractures

Residual Symptom Complex Secondary to Rib Fractures		
0% whole person	**3% whole person**	**5% whole person**
Rib fractures, nondisplaced. No pneumothorax. No hemothorax. Healed with minimal discomfort that does not significantly interfere with life activities including work.	Rib fractures, displaced. Minimal pneumothorax or hemothorax. Healed with moderate discomfort that does interfere with life activities including work.	Multiple rib fractures, displaced. Presence of pneumothorax /or hemothorax. Requiring open reduction internal fixation Healed with moderate discomfort that interferes with life activities including work.

7.1 Loss of Teeth Secondary to an Industrial Event

Maximum of 10% WP to Be Awarded

Impairment in Whole Person

Upper Incisors.....1% (Each)
All other Teeth.....1/2% (Each)

7.2 TEMPOROMANDIBULAR JOINT

Impairment in Whole Person

The temporomandibular joint is unique in that it is a bilateral joint, but functions in relationship to only a single bone, the mandible, which moves as a unit with complex motions. This joint is not comparable to the situation of bilateral joints of the extremities that are independent from each other. The following schedule should be used in reporting impairment related to the temporomandibular joint.

Schedule XIII Temporomandibular Joint Impairment (Whole Person)	
Use either the Range of Motion or the Structural Change Model, *Whichever is Greater**	
Range of Motion Model	**Structural Change Model**
Range of Motion in Millimeters (Only the vertical opening from incisal edge of maxillary teeth to incisal edge of mandibular teeth measured in mm) 0 -10....(Traumatic Microstomia)..... ...10% 11-20..... 8% 21-30..... 6% 31-40[89].....3%	**Recurrent Subluxation or dislocation disc** Unilateral.....1% Bilateral.....2% **Recurrent Subluxation or dislocation joint** Unilateral.....3% Bilateral..... 4% **Meniscal Repair or Meniscectomy** Unilateral..... 3% Bilateral.....4% **Meniscectomy and implant alloplastic or soft tissue** Unilateral.....7% Bilateral.....10% **Arthroplasty (Total Joint) reconstruction, resection** Unilateral.....7% Bilateral.....10%

[89] Saunders, D, Krauss, S., Evaluation, Treatment and Prevention of Musculoskeletal Disorders, Pg 181.

Schedule XIII Temporomandibular Joint Impairment (Whole Person)	
Use either the Range of Motion or the Structural Change Model, *Whichever is Greater**	
	Arthroscopic surgical debridement/synovectomy Unilateral.....2% Bilateral.....3%

* In severe cases, the range of motion model or the structural change model may be combined with weight loss[90], speech impediment[91], or disfigurement[92] as defined in the *AMA Guides 5th Edition, 5th Edition.*

7.3 Utah's Burn Impairment Methodology

The current methodology found in 5th Edition of the AMA Guides 5th Edition chapter 8, table 8-2 page 178 is vague as to how best be utilized in the calculation of the impairment ratings for burns. Burns can occur with significant diverse and different severity over any or all body surfaces and damage the integrity of the skin making the skin more sensitive to physical and chemical insult. The skin may become sensitive to the touch and breakdown more easily with friction, etc. Burns can cause scarring that limits function of other tissues or motion in affected joints. Burns can also cause disfigurement if in exposed surface areas (face, neck and hands).

To provide rating methodology that facilitates consistency and fairness, the Impairment Committee has reviewed and updated the burn rating process.

As with other sections of the Impairment Guides, the rater is reminded that the rating of a part should never be greater than that which is allowed for a whole amputation. This would mean that the maximum rating a physician could award for the upper extremity would be equal to 100% upper extremity or 60% whole person.

The extent of skin involvement should be documented. If the patient has burns or scars, describe the location, exact measurements (cm. x cm.), shape, depression, type of tissue loss (superficial, deep, full thickness, etc.), adherence to underlying tissue or free mobility, and tenderness. Note breakdown, ulceration, large keloid formation, and whether or not a graft is present and its effectiveness. For each burn scar, state if due to a 2nd or 3rd degree burn. Describe any limitation of activity or limitation of motion due to scarring or other skin lesions. **NOTE:** If there are disfiguring scars (of face, head, or neck), color photographs are extremely helpful of the affected area(s) to submit with the examination report. In rating burns, the following items should be described in the repo

1. Review of Medical Records

2. Medical History (Subjective Complaints)

1. Type of burn injury causing scar, its date, the treatment used and the response to such treatment.
2. Current symptoms.

3. Physical Examination (Objective Findings)

For every scar to be examined, address EACH of the following and fully describe the current findings. Note that, in addition to measuring the scar itself, measurements of areas with certain abnormal characteristics must also be provided. All measurements should be reported in inches or centimeters.

1. Describe the precise location of each scar. Draw diagrams if necessary.
2. Give MEASUREMENT of length and width (at its widest part) of each scar.
3. Is there pain in the scar on examination?

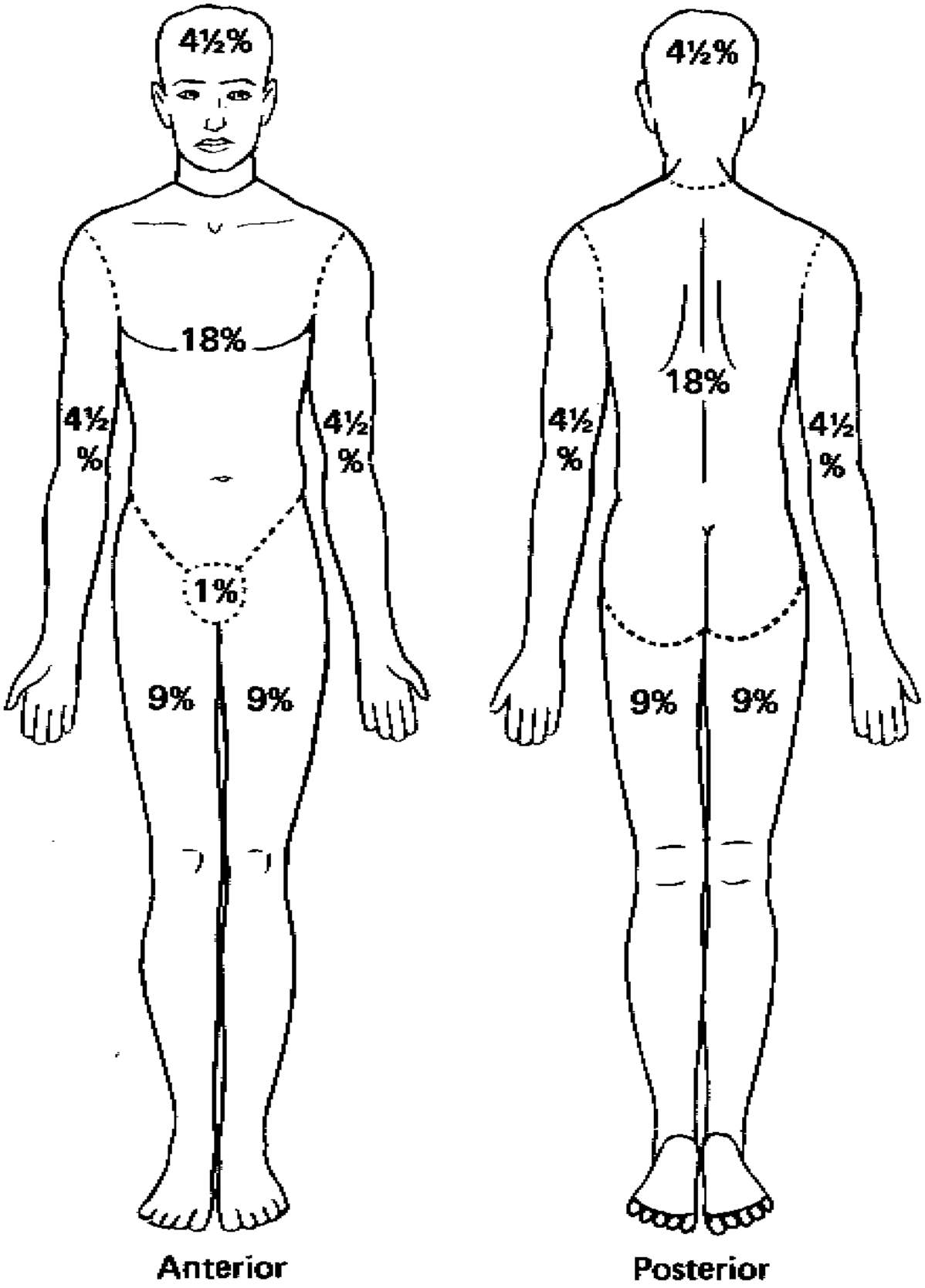
[90] The Guides to the Evaluation of Permanent Impairment, 4th Edition, Chicago, IL, American Medical Association. p.236.
[91] Ibid, p.232.
[92] Ibid, p.27.

4. Is there adherence to underlying tissue?
5. Texture of skin. If irregular, atrophic, shiny, scaly, etc., give MEASUREMENT of length and the width of the area is so affected.
6. Is the scar unstable, meaning is there frequent loss of covering of skin over the scar, such as from ulceration or breakdown of skin?
7. Is there elevation or depression of the surface contour of the scar on palpation?
8. Is the scar superficial (meaning there is no underlying soft tissue damage)?
9. Is the scar deep (meaning there is underlying soft tissue loss or damage)? If yes, give MEASUREMENT of length and width of underlying soft tissue damage.
10. Describe any inflammation, edema, or keloid formation.
11. Describe color of scar compared to normal areas of skin (give MEASUREMENT of length and width of any hypopigmentation or hyperpigmentation).
12. For face, discuss whether there is gross distortion or asymmetry of any feature or set of paired features (nose, chin, forehead, eyes ((including eyelids)), ears ((auricles)), cheeks, lips).
13. Is there an area of induration and inflexibility of skin in the area of the scar? If so, give MEASUREMENT of length and width of area of induration.
14. Describe any limitation of motion or other limitation of function caused by a scar.
15. With disfigurement or disfiguring scar of head, face, or neck, submit COLOR PHOTOGRAPHS.
16. Specify if any exposed areas (head, face, neck, and hands) are affected. Provide the percent affected by exposed areas. Provide the% affected of the entire body.

Also, using the rule of nines, the skin surface area involved should be documented as a% of total body surface area as well as a second recording for the% of involved area (in terms of total surface area percentage) that is exposed surface area.

7.3a Rule of 9's:

The major body areas are divided such that each area is a multiple of nine. The head represents 9% of the body surface, and each arm is 9%. The front of each leg (to the groin) is 9%, and the back 9%. The front of the torso is 18%, and the back is 18%. See image below:


4½%
18%
4½ %
4½ %
1%
9%
9%
Anterior
4½%
18%
4½ %
4½ %
9%
9%
Posterior

Utah's Burn Schedule **Methodology for calculating Impairment for burns (whole person)** Loss of Motion, Amputation, Sexual Dysfunction and Neurological Loss Would Also Be Combined For Each Extremity. Each Extremity Is Then Converted To Whole Person And Combined With Any Other Areas Of The Body.			
Estimated % of Burn	Severity of Burn Multiplier	Location of burn combine 3% WP	Disfigurement involves areas where scars are visible when fully clothed (face, neck, hand)
Rule of Nines	Partial-thickness x .5	Deep burns over flexion creases, hands, face, feet and/or Genital areas.	**Extreme:** likely to interfere with obtaining employment in any setting, including those without public contact: **Combine 5%** **Moderate:** likely to impair some employment in jobs requiring frequent public contact. **Combine 3%** **Minimal:** unlikely to significantly limit employment in public contact positions. **Combine 1%**
	Area of full-thickness keloid, adhesions to underlying tissue and frequent breakdown, x 1		

Example 1: Burn

A 42-Year-old male is severely burned on both upper extremities and the chest area from a thermal fire 15 months prior. His medical records indicated that he had an estimated 5% full thickness burn on his right upper forearm to include the palm of the hand. His left upper extremity had an estimated 3% partial thickness burn to his forearm and 3% full thickness burn to his chest. He has required extensive therapy and now has been declared stable with a painful contractured right upper extremity.

His impairment rating at this time would be:
Burns:

Right Arm 5% for estimated burn area x 1 for severity = 5% combined with 3% for inclusion of his palm = 8% WP
Left Arm 3% x .5 = 1.5% WP
Chest 3% x 1 = 3% WP

Total impairment for his burns is 9.5% or 10% WP (Combined)

For his contractured right hand with associated loss of sensation, he would have calculated 33% of his hand, or 30% upper extremity or 18% whole person.

10% for his burn and 18% for his loss of motion, sensation is combined to equal **26% whole person.**

Appendix 1

AMA 5th Edition Review
Utah's 2024 Clarification of the
AMA Guides 5th Edition to the Evaluation of Permanent Impairment

The relative scale of 0 to 100% is inconsistent throughout the different chapters.

Definitions established in Chapters 1 and 13, establish the entire relative scale of the rating process.

Chapter 1

90% to 100% whole person impairment indicates a very severe organ or body system impairment requiring the individual to be fully dependent on others for self-care, approaching death. (P. 5)

Chapter 13

90%, persistent vegetative state due to cerebral contusion and intracranial hemorrhage. 90% of the whole person. Persistent vegetative state is defined as a clinical condition of complete unawareness of the self and the environment **(Page 311, Exp 13-4).**

Location and Inconsistencies

This chapter's relative scale is inconsistent with the prior defined definitions.

Page 30, 3.2 a, table 3-5

Signs of physical examination valvular heart disease and symptoms at rest or in performance of less than ordinary activities **50% -100% impairment of the whole person**. Out of line with impairment relative scale.

Page 34, Ex. 3-8
Unable to do most activities of daily living without assistance. **90 to 100% impairment of the whole person**. Out of line with impairment relative scale

Page 46, 3-25 Ex. 3-25

Comfortable during exertion for short periods: weak and breathless on more moderate exertion. **80 to 90**% **impairment of the whole person**. Out of line with impairment relative scale

Page 46, Ex. 3-26

Recent activity markedly limited because of fatigue with minimal exertion. **95 to 100% of the whole person**. Out of line with impairment relative scale

Page 51, Ex. 3-34

Dyspnea on exertion with one flight of stairs or ambulation over 25 feet**. 80 to 89% of the whole person**. Out of line with impairment relative scale

Page 54, Ex. 3-41

Able to walk on a little surface and do activities of living. **80 to 89% of the whole person**. Out of line with impairment relative scale

Page 59, Ex. 3-49

70 to 90% impairment of the whole person. Out of line with impairment relative scale

Page 69, Ex. 4-8

Marked tiredness and breathlessness with ordinary activities. 80% whole people. Out of line with impairment relative scale

Page 110, Ex. 5-7

Increasing dyspnea for 5 years: difficulty keeping up with others the same age. Unable to walk upstairs past the second flight. **26 to 50% of the whole person**. Out of line with impairment relative scale

Page 111, Ex. 5-10

Severe dyspnea: unable to perform activities of daily living, try pain to and from work, walking on little ground, said dress. **51 to 100% whole person**. Out of line with impairment relative scale

Page 344 Ex. 13-44

Routine venipuncture causing post traumatic neuralgia of the superficial radial nerve secondary to injury. **25% of the whole person**. Out of line with impairment relative scale

Utah Clarification

Utah will adopt the scale of 0% represents a complete and independent individual with 90% to 100% whole person impairment indicating a very severe organ or body system impairment requiring the individual to be fully dependent on others for self-care, approaching death. Page 5. Raters are to use this relative scale in interpreting all ratings throughout the Guides in Utah.

Chapter 7 Gynecological Impairments are out of line with accepted scales.

Page 167, Ex. 7-46

A symptomatic female with radical hysterectomy and pelvic lymphadenectomy, ovaries conserved. **30% whole person**. Out of line with impairment relative scale

Page 168, Ex. 7-48

Pelvic pain is secondary to recurrent endometriosis. **20% whole people**. Out of line with impairment relative scale

Page 169, Ex. 7-49

Bilateral salpingectomy. **30% whole person**. Out of line with impairment relative scale.

Page 169, Ex. 7-50
Infertility due to primary ovarian failure. **30% of the whole person**. Out of line with impairment relative scale

Utah Clarification

Utah raters are to calculate their ratings as specific as possible with written justification of their derivations. Utah will maintain the methodology that, "In certain instances, the treatment of an illness may result in apparent total remission of the person's signs and symptoms. Examples include individuals with deep vein thrombosis with chronic anti-coagulants for more than a year. Yet it is debatable whether, with treatment, the patient has actually regained the previous status of normal good health. In these instances, the physician may choose to increase the impairment estimate by **three%**."

Inconsistencies exist for the defining, diagnosing and rating RSD, Causalgia and C.R.P.S. 1 & 2

The Guides states in Chapter 13, Page 343, 13.8, not to use the terminology C.R.P.S. 1 & 2, and to only use the terms RSD, Causalgia.

Yet Chapter 16, states that RSD and Causalgia terms are not to be used, but a very comprehensive review is given for C.R.P.S. 1 & 2

Utah Clarification

Utah raters are to calculate their ratings for these conditions using the methodology found in Chapter 16.5e, p.495, for both the upper and lower extremity.

Dominate Extremity Inconsistencies:

Controversy exists as to whether to allow an increase of 5-10% impairment for the dominant extremity.

Chapter 13 Table 13-22
Page 338, 13.6, table 13-16 Chapter 15, Table 15-6, Page 396, awarded five to ten percent more for the dominant upper extremity.

Chapter 16 16.1 B. page 435
Impairment ratings in this chapter have not been adjusted for hand dominance.

Utah Clarification

Utah raters are not to consider hand dominance, except as specified for corticospinal tract impairment (page 396).

Rating Subjective Complaints:

Instructions for the ratings of subjective complaints of pain.

Utah Clarification

It is believed that the methodology found in the prior editions of the Guides adequately considered pain. Utah raters are **not to award additional percentages for pain under Chapters 13, 16, 17 and 18, of the AMA 5th Edition of the Guides**, until advances in diagnostic technology and clinical experience make pain related impairment ratings feasible.

Spinal Chapter 15

Remains very confusing. Two separate ways are described to calculate a rating, with little or no consideration for current published literature. How one selects which method to use remains unnecessarily complicated and confusing.

Utah Clarification

In Utah, Chapter 15 for spinal rating is not to be used, except as specified in the Utah 2024 Impairment Guides.

Strength Testing

Chapters 16 and 17
Strength evaluation: those who have contributed to the guides believe that further research is needed before loss of grip & strength is given a larger role in impairment evaluation page 507

Utah Clarification

In Utah, strength testing is not to be utilized, except as specified in these Guides.

Atrophy Chapter 16

Utah Clarification

In Utah, atrophy is not to be used.

Combining range of motion in upper extremities and lower extremities:

Fifth Edition is confusing, therefore ROM to be combined throughout the impairment guides.

Utah Clarification

In Utah, ROM is to be combined with upper and lower extremities as specified.

Errors Identified in the Calculation Process of the 5th Edition:

Error: In calculation of impairment for the same example found in two different chapters
Page 75, Ex. 4-19, Ex. is the same case that is found on page 498 16-62. The impairment of 49% of the whole person is calculated wrong, the Ex. of page 498 calculates a rating of 44% whole person and appears correct.

Error: The Skin chapter. Impairment exceeds total amount that can be awarded (amputation)
Page 185, Ex. 8-17, post thrombophlebitic syndrome with stasis dermatitis and ulceration; scar formation secondary to chemical burn. Fifty-five% whole people. The maximum award for complete leg amputation is 40% whole person.

Error: Award for whole person instead of upper extremity
Table 13-22: rating for chronic pain in one upper extremity.
Uses dominant and nondominant extremity with ranges of 5 to 10% whole person difference. Is awarded as the whole person, not upper extremity.

Error: Reference made that is not found
Page 346 a reference is made to a section 13.8 B. that does not appear to be in the book.

Error: Award for whole person instead of lower extremity
Page 348, Ex. 13-46 Ex. calculates the impairment as a whole person first and not as a lower extremity and then converting to a whole person.

Error: In calculation

Page 349, Ex. 13-47, Ex. is calculated entirely wrong, concluding with a 31% whole person rating.

The correct calculation is 15% of the whole person. (Not only is the methodology incorrect, but the numbers utilized to calculate the rating are also incorrect.)

Error: Award for whole person instead of upper extremity
Page 424 to 15-17 and table 15-18 should be for the upper extremity rather than the whole person. Refer to page 346 and is inconsistent refer to page 489

Error: Award for whole person instead of lower extremity
Example 425 should be 1% and 5% lower extremity or 6% lower extremity, not whole person. (See page 489)

Error: Wrong calculations process
Page 438 wrong, to begin with the biggest number and combine

Error: Wrong calculation process
Page 346 nerve pain, the sensory and motor impairments are first combined to upper extremity and then converted to a whole person impairment page 347.

Error: Inconsistent: Ratings of conditions that become asymptomatic should be 3%
Page 218, Ex. 10-5, Hashimoto's thyroiditis. 5 % whole person. Inconsistent: Ratings of conditions that become asymptomatic should be 3%

Inconsistency: Vestibular system
Chart 11-4, p 253 demonstrates 95% WP for dysequilibrium whereas table 13-13, p 334 is 70% for the same condition. In Utah, Chapter 13 is to be used for dysequilibrium.

Glossary of Terms

Definitions of clinical findings accepted by the Utah Glossary of Terms

Medical stability

Medical Stability sometimes referred to maximum medical improvement (MMI), or fixed state of recovery, [93] refers to a date in which the period of healing has ended and the condition of the worker is not expected to materially improve or deteriorate in the ensuing year.[94] [95] [96] [97] [98] It is important to note that medical stability may not be used to terminate necessary medical care. The date of medical stability and the date when the worker qualifies for an impairment rating can be two separate dates.

Causation

Causation means an identifiable factor, e.g., accident or exposure to hazards of the disease that brought on and worsened a medically identifiable condition. Medical or scientifically based causation requires a detailed analysis of whether the factor, **based on a reasonable probability, greater than 50% likelihood**, could have caused the condition, or temporarily-permanently aggravated the condition, based upon scientific evidence and specifically experienced judgment as to whether the alleged factor in the existing environment did cause the permanent impairment.[99]

Apportionment of Permanent Impairment Ratings

Apportionment represents a distribution or allocation of causation among multiple factors that caused or significantly contributed to the injury or disease and resulting impairment. The factor could be a pre-existing injury, illness, or impairment. Before determining apportionment, the physician needs to verify that all the following information is true for an individual. No. 1, there is documentation of a prior factor. No. 2, the current permanent impairment is greater as a result of the prior factor, by impairment, the injury, or illness. No. 3, there is evidence indicating the prior factor caused or contributed to the impairment, based on a reasonable probability, greater than 50% likelihood.[100]

The apportionment analysis must consider the nature of the impairment and its possible relationship to each alleged factor and must provide an explanation of the medical basis for all conclusions and opinions. [101]

Aggravation: Temporary

Temporary aggravation refers to a factor, e.g., physical, chemical, biological, or medical condition that temporarily alters the course or progression of the medical condition, without a new added dimension of medical impairment.

Aggravation: Permanent

Permanent aggravation refers to a factor, e.g., physical, chemical, biological, or medical condition that alters the course or progression of the medical condition, with a new added dimension of impairment expected.[102]

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[93] WC Law 34A-2-418-sub 1
[94] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association, 2001. p. 19.
[95] Ibid, p.19.
[96] Booms v. Rapp Const. Co. 720 p. 2d 1363 Supreme Court of UTAH UTAH UTAH, June 6, 1986.
[97] Page 315, *AMA Guides, 4th Edition*
[98] 1997 Utah's Impairment Guides, Page 3
[99] The Guides to the Evaluation of Permanent Impairment, 5th Edition, Chicago, IL, American Medical Association p. 11.
[100] Ibid, p. 11.
[101] Ibid, p. 12.
[102] Ibid, p. 12.

Muscle Spasm

Muscle spasm is a sudden, involuntary contraction of a muscle or group of muscles, Paravertebral muscle spasm is common after acute spinal injury but is rare in chronic back pain. It is occasionally visible as a contracted paraspinal muscle but is more often diagnosed by palpation (a hard muscle). To differentiate true muscle spasm from voluntary muscle contraction, the individual should not be able to relax the contractions. The spasm should be present standing as well as in the supine position and frequently causes scoliosis.The physician can sometimes differentiate spasm from voluntary contraction by asking the individual to place all his or her weight first on one foot and then the other while the physician gently palpates the paraspinous muscles. With this maneuver, the individual normally relaxes the paraspinal muscles on the weight bearing side. If the examiner witnesses this relaxation, it usually means that true muscle spasm is not present.

Muscle Guarding

Guarding is a contraction of muscle to minimize motion or agitation of the injured or diseased tissue. It is not true muscle spasm because the contraction can be relaxed. In the lumbar spine, the contraction frequently results in loss of the normal lumbar lordosis and it may be associated with reproducible loss of spinal motion.

Asymmetry of Spinal Motion

Asymmetric motion of the spine in one of the three principal planes is sometimes caused by muscle spasm or guarding. That is, if an individual attempts to flex the spine, he or she is unable to do so moving symmetrically; rather, the head or trunk leans to one side. To qualify as true asymmetric motion, the finding must be reproducible and consistent and the examiner must be convinced that the individual is cooperative and giving full effort.

Non-verifiable Radicular Root Pain

Non-verifiable pain is pain that is in the distribution of a nerve root but has no identifiable origin; i.e., there are no objective physical, imaging, or electromyographic findings. For dermatomal distributions see Figures 15-1 and 15-2.

Reflexes

Reflexes may be normal, increased, reduced, or valid, the involved and normal limb(s) should show marked asymmetry between arms or legs through repeated testing. Once lost because of previous radiculopathy, a reflex rarely returns. Abnormal reflexes such as Babinski signs or clonus may be signs of corticospinal tract involvement.

Weakness and Loss of Sensation

To be valid, the sensory findings must be in a strict anatomic distribution, i.e., follow dermatomal patterns (see Figures 15-1 and 15-2). Motor findings should also be consistent with the affected nerve structure(s). Significant, long-standing weakness is usually accompanied by atrophy.

Atrophy

Atrophy is measured with a tape measure at identical levels on both limbs.

Radiculopathy (As defined in the Radiculopathy Schedule, V)

Radiculopathy for the purposes of the Guides is defined as significant alteration in the function of a nerve root or nerve roots and is usually caused by pressure on one or several nerve roots. The diagnosis requires a dermatomal distribution of pain, numbness and/or paresthesias in a dermatomal distribution. A root tension sign is usually positive.The diagnosis of a nerve root compression must be substantiated by an appropriate finding on an imaging study. The presence of findings on an imaging study in and of itself does not make the diagnosis of radiculopathy. There must also be clinical evidence as described above.

Electrodiagnostic Verification of Radiculopathy

Unequivocal electrodiagnostic evidence of acute nerve root pathology includes the presence of multiple positive sharp waves or fibrillation potentials in muscles innervated by one nerve root. However, the skill of the person performing and interpreting the study is critical. Electromyography should be performed only by a licensed physician qualified by reason of education, training and experience in these procedures. Electromyography does not detect all compressive radiculopathies and cannot determine the cause of the nerve root pathology. On the other hand, electromyography can detect non-compressive radiculopathies, which are not identified by imaging studies.

Cauda Equina Syndrome

Cauda Equina Syndrome is manifested by bowel or bladder dysfunction, saddle anesthesia and variable loss of motor and sensory function in the lower extremities. Individuals with Cauda Equina Syndrome usually have loss of sphincter tone on rectal examination and diminished or absent bladder, bowel and lower limb reflexes.

Urodynamic Tests

Cystometrograms are useful in individuals where a Cauda Equina Syndrome is possible but not certain. A normal cystometrogram makes the presence of a nerve-related bladder dysfunction unlikely. Occasionally, more extensive urodynamic testing is necessary.