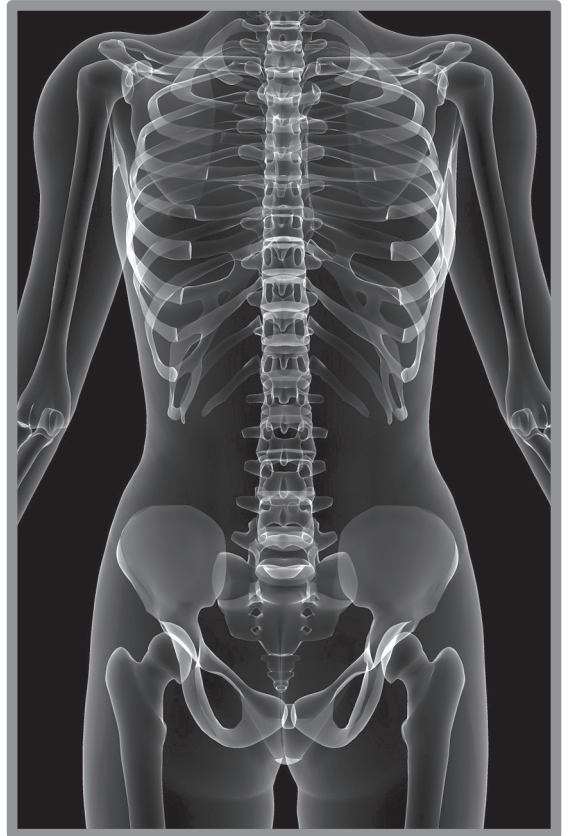


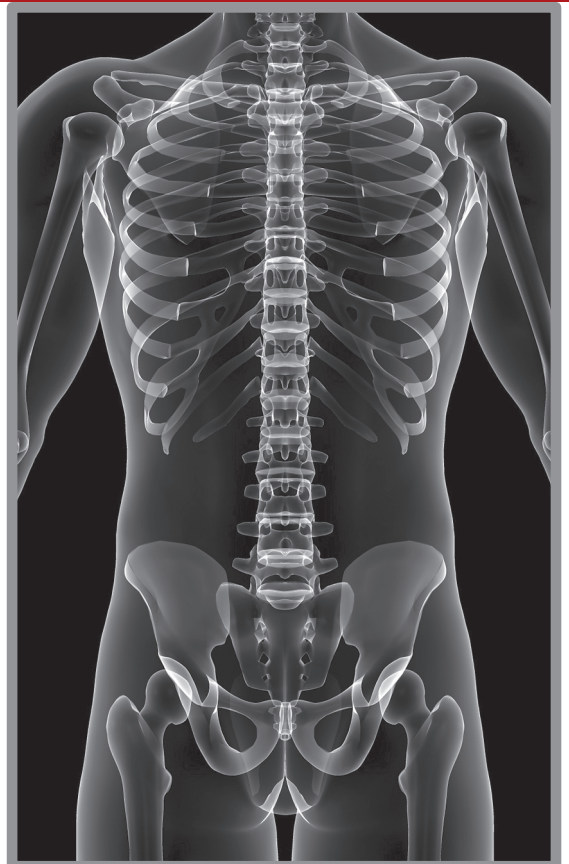


I OCTOBER 2007



Permanent Impairment Guidelines

Guidelines for the assessment of permanent impairment of a person injured as a result of a motor vehicle accident





Guidelines for the assessment of the degree of permanent impairment

1 October 2007

Guidelines for the assessment of the degree of permanent impairment of an injured person

Explanatory Note

These Motor Accidents Authority (MAA) Guidelines are issued pursuant to section 44(1)(c) of the Motor Accidents Compensation Act 1999 (“the Act”) and apply in respect of a motor accident occurring on or after 5 October 1999. These Guidelines replace the MAA “Guidelines for the assessment of the degree of permanent impairment of an injured person” published in Government Gazette No 92 of 22 July 2005 at page 3858.

The Act requires that damages for non-economic loss only be awarded where the permanent impairment of the injured person caused by the motor accident is greater than 10%. Further, the assessment of the degree of permanent impairment is to be made in accordance with the MAA Medical Guidelines issued for that purpose.

These Guidelines have been developed to fulfil that role. They use the American Medical Association Guides to the Evaluation of Permanent Impairment, Fourth Edition, Third Printing (1995) (AMA 4 Guides) as their basis. The AMA 4 Guides are widely used as an authoritative source for the assessment of permanent impairment. However, these MAA Guidelines make significant changes to the AMA 4 Guides to align them with Australian clinical practice and to better suit them to the purposes of the Act.

These Guidelines commence on 1 October 2007

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Chapter 1

Introduction to the MAA Guidelines

Introduction

- 1.1 These MAA Guidelines have been developed for the purpose of assessing the degree of permanent impairment arising from the injury caused by a motor accident, in accordance with section 133(2)(a) of the New South Wales Motor Accidents Compensation Act 1999.
- 1.2 The MAA Guidelines are based on the American Medical Association publication "Guides to the Evaluation of Permanent Impairment", 4th Edition, 3rd Printing (1995) (AMA 4 Guides). However, in these Guidelines there are some very significant departures from that document. Persons undertaking impairment assessments for the purposes of the NSW Motor Accidents Compensation Act 1999 must read these MAA Guidelines in conjunction with the AMA 4 Guides. **These MAA Guidelines are definitive with regard to the matters they address. Where they are silent on an issue, the AMA 4 Guides should be followed. In particular, Chapters 1 and 2 of the AMA 4 Guides should be read carefully in conjunction with this Chapter of the MAA Guidelines. Some of the examples in AMA 4 are not valid for the assessment of impairment under the Motor Accidents Compensation Act 1999. It may be helpful for assessors to mark their working copy of the AMA 4 Guides with the changes required by these MAA Guidelines.**
- 1.3 The convention used in these MAA Guidelines is that if the text is in bold, it is a directive as to how the assessment should be performed.

Application of Guidelines

- 1.4 **Original Assessments** - These Guidelines apply to all assessments of the degree of permanent impairment (under s58(1)(d) of the Act) conducted by a medical assessor on or after the commencement date.
- 1.5 **Further Assessments** - These Guidelines apply to a further medical assessment of the degree of permanent impairment (under s62 of the Act) conducted by a medical assessor on or after the commencement date.

If an original assessment under s58(1)(d) was conducted under a previous version of these Guidelines resulting in a certificate being issued that the claimant's injuries exceed the WPI threshold, an application may not be made under s62 for a further assessment if it is based solely on a change made in these Guidelines.

- 1.6 **Reviews of Assessments** – These Guidelines apply in the review of an assessment (under s63 of the Act) as follows:
- (a) Decisions of the Proper Officer under s63(1)(2)(3)
 - i) Where the assessment by the single medical assessor in question was made in accordance with these Guidelines, these Guidelines apply; or
 - ii) Where the assessment by the single medical assessor in question was made in accordance with a previous version of these Guidelines, that previous version of these Guidelines apply;
 - (b) Review Panel assessments under s63(4)

These Guidelines apply to all review panel assessments of the degree of permanent impairment (under s58(1)(d) of the Act) conducted by a review panel on or after the commencement date.

Causation of injury

- 1.7 An assessment of permanent impairment is as prescribed under section 58 (1)(d) of the Motor Accidents Compensation Act 1999. The assessment should determine the *degree of permanent impairment of the injured person as a result of the injury caused by the motor accident*. A determination as to whether the claimant's symptoms and impairment are related to the accident in question is therefore implied in all such assessments. Assessors should be aware of the relevant provisions of the AMA 4 Guides, as well as the common law principles that would be applied by a court (or claims assessor) in considering such issues.
- 1.8 Causation is defined in the Glossary at page 316 of the AMA 4 Guides as follows: "*Causation* means that a physical, chemical, or biologic factor contributed to the occurrence of a medical condition. To decide that a factor alleged to have caused or contributed to the occurrence or worsening of a medical condition has, in fact, done so, it is necessary to verify both of the following.
- (a) The alleged factor *could have caused* or contributed to worsening of the impairment, which is a medical determination.
 - (b) The alleged factor *did cause* or contribute to worsening of the impairment, which is a non-medical determination".
- This therefore involves a medical decision and a non-medical informed judgement.
- 1.9 There is no simple common test of causation that is applicable to all cases, but the accepted approach involves determining whether the injury (and the associated impairment) was caused or materially contributed to by the motor accident. The motor accident does not have to be a sole cause as long as it is a contributing cause, which is more than negligible. Considering the question "Would this injury (or impairment) have occurred if not for the accident?" may be useful in some cases, although this is not a definitive test and may be inapplicable in circumstances where there are multiple contributing causes.

Impairment and disability

- 1.10 It is critically important to clearly define the term *impairment* and distinguish it from the *disability* that may result.
- 1.11 *Impairment* is defined as an alteration to a person's health status. It is a deviation from normality in a body part or organ system and its functioning. Hence, impairment is a medical issue and is assessed by medical means.
- 1.12 This definition is consistent with that of the World Health Organisation (WHO) which has defined impairment as "any loss or abnormality of psychological, physiological or anatomical structure or function."⁽¹⁾
- 1.13 *Disability*, on the other hand, is a consequence of an impairment. The WHO definition is "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being".⁽¹⁾
- 1.14 Confusion between the two terms can arise because in some instances the clearest way to measure an impairment is by considering the effect on a person's 'activities of daily living' (that is, on the consequent disability). The AMA 4 Guides, in several places, refer to restrictions in the activities of daily living of a person. Hence the disability is being used as an indicator of severity of impairment.
- 1.15 Where alteration in activities of daily living forms part of the impairment evaluation, for example when assessing brain injury or scarring, refer to the Table of Activities of Daily Living on page 317 of AMA 4 Guides. The assessor should explain how the injury impacts on activities of daily living in the impairment evaluation report.
- 1.16 Two examples may help emphasise the distinction between impairment and disability.
- (i) The loss of the little finger of the right hand would be an equal impairment for both a bank manager and a concert pianist and so, for these Guidelines, the impairment is identical. But the concert pianist has sustained a greater disability.
 - (ii) An upper arm injury might make it impossible for an injured person to contract the fingers of the right hand. That loss of function is an impairment. However, the consequences of that impairment, such as an inability to hold a cup of coffee, or button up clothes, constitute a disability.
- 1.17 A *handicap* is a further possible consequence of an impairment or disability, being a disadvantage that limits or prevents fulfilment of a role that is/was normal for that individual. The concert pianist in the example above is likely to be handicapped by his/her impairment.
- 1.18 It must be emphasised, in the context of these MAA Guidelines, that it is not the role of the assessor to determine disability, other than as described in 1.14 above.

Evaluation of impairment

- 1.19 The assessor should consider the available evidence and be satisfied that there:
- (i) was an injury to the part being assessed caused by the accident;
 - (ii) is a defined diagnosis that can be confirmed by examination; and
 - (iii) is an impairment as defined at 1.11 of the MAA Guidelines.

- 1.20 An assessment of the degree of permanent impairment involves three stages:
- (i) A review of medical and hospital records, including:
 - all available treating and medico-legal doctor notes and reports (general practitioner, specialist and allied health), both prior to and following the accident; and
 - diagnostic findings from all available relevant investigations.
 - (ii) An interview and a clinical examination, wherever possible, to obtain the information specified in the MAA Guidelines and the AMA 4 Guides necessary to determine the percentage impairment; and
 - (iii) The preparation of a report using the methods specified in these MAA Guidelines which determines the percentage permanent impairment together with the evidence, calculations and reasoning on which the determination is based. The applicable parts of the MAA Guidelines and the AMA 4 Guides should be referenced.

Permanent impairment

- 1.21 Before an impairment evaluation is undertaken, it must be shown that the impairment has been present for a period of time, is static, well stabilised and unlikely to change substantially regardless of treatment. The AMA 4 Guides (page 315) state that permanent impairment is impairment that has become static or well stabilised with or without medical treatment and is not likely to remit despite medical treatment. A permanent impairment is considered to be unlikely to change substantially (i.e. by more than 3% whole person impairment) in the next year with or without medical treatment. If an impairment is not permanent, it is inappropriate to characterise it as such and evaluate it according to the Guidelines.
- 1.22 Generally, when an impairment is considered permanent, the injuries will also be stabilised. However, there could be cases where an impairment is considered permanent because it is unlikely to change in future months regardless of treatment, but the injuries are not stabilised because future treatment is intended and the extent of this is not predictable. Amputation and paraplegia are possible examples – the impairment is permanent and may be able to be assessed soon after the injury, as it is not expected to change regardless of treatment. However the injuries may not be stabilised for some time as the extent of future treatment and rehabilitation are not known.
- 1.23 The evaluation should only consider the impairment as it is at the time of the assessment.**
- 1.24 The evaluation should *not* include any allowance for a predicted deterioration, such as osteoarthritis in a joint many years after an intra-articular fracture, as it is impossible to be precise about any such later alteration. However, it may be appropriate to comment on this possibility in the impairment evaluation report.

Non-assessable injuries

- 1.25 Certain injuries may not result in an assessable impairment covered by the MAA Guidelines and AMA 4 Guides. For example, uncomplicated healed sternal and rib fractures do not result in any assessable impairment.

Impairments not covered by MAA Guidelines and AMA 4 Guides

- 1.26 A condition may present which is not covered in the MAA Guidelines or the AMA 4 Guides.
If objective clinical findings of such a condition are present, indicating the presence of an impairment, then assessment by analogy to a similar condition is appropriate. Include the rationale for the methodology chosen in the impairment evaluation report.

Adjustments for effects of treatment or lack of treatment

- 1.27 The results of past treatment (e.g. operations) must be considered, since the claimant is being evaluated as they present at the time of assessment.
- 1.28 Where the effective long-term treatment of the effects of an injury result in apparent, substantial or total elimination of a physical permanent impairment, but the claimant is likely to revert to the fully impaired state if treatment is withdrawn, the assessor may increase the percentage of whole person impairment by 1, 2 or 3% whole person impairment. This percentage should be combined with any other impairment percentage using the Combined Values Chart (pp 322-324, AMA 4 Guides). An example might be long-term drug treatment for epilepsy. This paragraph does not apply to the use of analgesics or anti-inflammatory drugs for pain relief.**
- 1.29 For adjustments for the effect of treatment on a permanent psychiatric impairment refer to 7.21 in Chapter 7 Mental and Behavioural Disorders Impairments of these Guidelines.**
- 1.30 If a claimant has declined a particular treatment or therapy that the medical assessor believes would be beneficial, this should not change the impairment estimate. However, a comment on the matter should be included in the impairment evaluation report.
- 1.31 Equally, if the assessor believes substance abuse is a factor influencing the clinical state of the claimant that should be noted in the impairment evaluation report.

Adjustments for the effects of prostheses or assistive devices

- 1.32 Whenever possible, the impairment assessment should be conducted without assistive devices, except where these cannot be removed. However, the visual system should be assessed in accordance with 8.14 to 8.17.

Pre-existing impairment

- 1.33 The evaluation of the permanent impairment may be complicated by the presence of an impairment in the same region that existed prior to the relevant motor accident. If there is objective evidence of a pre-existing symptomatic permanent impairment in the same region at the time of the accident, then its value should be calculated and subtracted from the current whole person impairment value. If there is no objective evidence of pre-existing symptomatic permanent impairment, then its possible presence should be ignored.
- 1.34 The capacity of an assessor to determine a change in physical impairment will depend upon the reliability of clinical information on the pre-existing condition. To quote the AMA 4 Guides page 10, "For example, in apportioning a spine impairment, first the current spine impairment would be estimated, and then impairment from any pre-existing spine problem would be estimated. The estimate for the pre-existing impairment would be subtracted from that for the present impairment to account for the effects of the former. Using this approach to apportionment would require accurate information and data on both impairments". Refer to 7.18 for the approach to a pre-existing psychiatric impairment.
- 1.35 Pre-existing impairments should not be assessed if they are unrelated or not relevant to the impairment arising from the motor vehicle accident.

Subsequent injuries

- 1.36 The evaluation of permanent impairment may be complicated by the presence of an impairment in the same region that has occurred subsequent to the relevant motor accident. If there is objective evidence of a subsequent and unrelated injury or condition resulting in permanent impairment in the same region its value should be calculated. The permanent impairment resulting from the relevant motor accident should also be calculated. If there is no objective evidence of the subsequent impairment its possible presence should be ignored.

Psychiatric impairment

- 1.37 Psychiatric impairment is assessed in accordance with Chapter 7 of these MAA Guidelines.

Psychiatric and physical impairments

- 1.38 **Impairment resulting from a physical injury is to be assessed separately from the impairment resulting from psychiatric or psychological injury.**
- 1.39 **When determining whether the degree of permanent impairment of the injured person resulting from the motor accident is greater than 10%, the impairment rating for a physical injury cannot be combined with the impairment rating for a psychiatric or psychological injury.**

Pain

- 1.40 Some Tables require the pain associated with a particular neurological impairment to be assessed. Because of the difficulties of objective measurement, **assessors should make no separate allowance for permanent impairment due to pain, and Chapter 15 of the AMA 4 Guides should not be used.** However, each chapter of the AMA 4 Guides includes an allowance for associated pain in the impairment percentages.

Rounding up or down

- 1.41 The AMA 4 Guides (p 9) permit (but do not require) that a final whole person impairment may be rounded to the nearest percentage ending in 0 or 5. This could cause inconsistency between two otherwise identical assessments. For this reason **assessors must not round whole person impairment values at any point of the assessment process. During the impairment calculation process however, fractional values might occur when evaluating the regional impairment (e.g. an upper extremity impairment value of 13.25%) and this should be rounded (in this case to 13%). Whole person impairment values can only be integers (not fractions).**

Consistency

- 1.42 Tests of consistency, such as using a goniometer to measure range of motion, are good but imperfect indicators of claimants' efforts. The assessor must utilise the entire gamut of clinical skill and judgement in assessing whether or not the results of measurements or tests are plausible and relate to the impairment being evaluated. If, in spite of an observation or test result, the medical evidence appears not to verify that an impairment of a certain magnitude exists, the assessor should modify the impairment estimate accordingly, describing the modification and outlining the reasons in the impairment evaluation report.
- 1.43 Where there are inconsistencies between the assessor's clinical findings and information obtained through medical records and/or observations of non-clinical activities, the inconsistencies should be brought to the claimant's attention, e.g. inconsistency demonstrated between range of shoulder motion when undressing and range of active shoulder movement during the physical examination. The claimant will then have an opportunity to confirm the history and/or respond to the inconsistent observations to ensure accuracy and procedural fairness.

Assessment of children

- 1.44 The determination of the degree of permanent impairment in children may be impossible in some instances, due to the natural growth and development of the child (examples are injuries to growth plates of bones or brain damage). In some cases the effects of the injury may not be considered stable and the assessment of permanent impairment may be delayed until growth and development is complete.

Additional investigations

- 1.45 The claimant who is being assessed should attend with the results of all diagnostic tests. It is not appropriate for an assessor to order additional investigations such as further spinal imaging other than those required as part of the impairment assessment. If it is strongly believed there are clinical reasons to order an investigation, the suggestion should be made in the impairment evaluation report.
- 1.46 There are some circumstances where testing is required as part of the impairment assessment e.g. respiratory, cardiovascular, ENT and ophthalmology. In these cases it is appropriate to conduct the prescribed tests as part of the assessment.

Combining values

- 1.47 **In general, when separate impairment percentages are obtained for various impairments being assessed these are *not* simply added together, but must be *combined* using the Combined Values Chart (pp 322-324, AMA 4 Guides).** This process is necessary to ensure the total whole person or regional impairment does not exceed 100% of the person or region. The calculation becomes straightforward after working through a few examples (for instance, see page 53 of the AMA 4 Guides). Note, however, that in a few specific instances, for example, for ranges of motion of the thumb joints, (AMA 4 Guides p16), the impairment values are directly added. Multiple impairment scores should be treated precisely as the AMA 4 Guides or MAA Guidelines instruct.

Lifetime Care and Support Scheme

- 1.48 A claimant who has been accepted as a lifetime participant of the Lifetime Care and Support Scheme under section 9 of the Motor Accidents (Lifetime Care and Support) Act 2006 has a degree of permanent impairment greater than 10%.

References:

1. World Health Organisation. International Classification of Impairments, Disabilities and Handicaps. Geneva, 1980.

Chapter 2

Upper Extremity Impairment

Introduction

2.1 The hand and upper extremity is discussed in section 3.1 of Chapter 3 of the AMA 4 Guides (pp 15-74). This section provides guidelines on methods of assessing permanent impairment involving the upper extremity. It is a complex section that requires an organised approach with careful documentation of findings on a worksheet.

The approach to assessment of the upper extremity and hand

2.2 Assessment of the upper extremity involves a physical evaluation that can utilise a variety of methods. The assessment, in this Chapter, does not include a cosmetic evaluation, which should be done with reference to Chapter 13 of the AMA 4 Guides.

2.3 The assessed impairment of a part or region can never exceed the impairment due to amputation of that part or region. For an upper limb, therefore, the maximum evaluation is 60% whole person impairment.

2.4 Although range of motion appears to be a suitable method for evaluating impairment, it can be subject to variation because of pain during motion at different times of examination and/or possible lack of co-operation by the person being assessed.

Range of motion is assessed as follows:

(i) **A goniometer should be used where clinically indicated.**

(ii) Passive range of motion may form part of the clinical examination to ascertain clinical status of the joint, but impairment should only be calculated using active range of motion measurements.

(iii) If the assessor is not satisfied that the results of a measurement are reliable, active range of motion should be measured with at least three consistent repetitions.

(iv) If there is inconsistency in range of motion then it should not be used as a valid parameter of impairment evaluation. Refer to section 1.43 of these Guidelines.

(v) If range of motion measurements at examination cannot be used as a valid parameter of impairment evaluation, the assessor should then use discretion in considering what weight to give other available evidence to determine if an impairment is present.

2.5 **If the contralateral uninjured joint has a less than average mobility, the impairment value(s) corresponding with the uninjured joint can serve as a baseline and are subtracted from the calculated impairment for the injured joint only if there is a reasonable expectation the injured joint would have had similar findings to the uninjured joint before injury. The rationale for this decision should be explained in the impairment evaluation report.**

- 2.6 To achieve an accurate and comprehensive assessment of the upper extremity, findings should be documented on a standard form. **Figure 1 of the AMA 4 Guides (pp 16-17) is extremely useful to document findings and guide assessment of the upper extremity.** **Note however, that the final summary part of Figure 1 (pp 16-17, AMA 4 Guides) does not make it clear that impairments due to peripheral nerve injuries cannot be combined with other impairments in the upper extremities unless they are separate injuries.**
- 2.7 The hand and upper extremity are divided into the regions of the thumb, fingers, wrist, elbow, and shoulder. Close attention needs to be paid to the instructions in Figure 1 (pp 16-17, AMA 4 Guides) regarding adding or combining impairments.
- 2.8 Table 3 (p 20, AMA 4 Guides) is used to convert upper extremity impairment to whole person impairment. *Note that 100% upper extremity impairment is equivalent to 60% whole person impairment.*
- 2.9 **If the condition is not in the AMA 4 Guides it may be assessed using another like condition.** For example, a rotator cuff injury may be assessed by impairment of shoulder range of movement or other disorders of the upper extremity (pp 58-65, AMA 4 Guides).

Specific Interpretation of the AMA 4 Guides

Impairment of the upper extremity due to peripheral nerve disorders

- 2.10 **If an impairment results solely from a peripheral nerve injury the assessor should not evaluate impairment from Sections 3.1f to 3.1j (pp 24-45, AMA 4 Guides). Sections 3.1k and subsequent sections should be used for evaluation of such impairment.**
For peripheral nerve lesions use Table 15 (p 54, AMA 4 Guides) together with Tables 11a and 12a (pp 48-49, AMA 4 Guides) for evaluation. Table 16 (p 57, AMA 4 Guides) must not be used.
- 2.11 **When applying Tables 11a and 12a (pp 48-49, AMA 4 Guides) the maximum value for each grade should be used unless assessing Complex Regional Pain Syndrome.**
- 2.12 **For purposes of interpreting Table 11 (p 48, AMA 4 Guides) “abnormal sensation” includes disturbances in sensation such as dysaesthesia, paraesthesia and cold intolerance. “Decreased sensibility” includes anaesthesia and hypoaesthesia.**

Impairment of the upper extremity due to complex regional pain syndrome

- 2.13 **The section, "Causalgia and Reflex Sympathetic Dystrophy" (p 56, AMA 4 Guides) should not be used.** These conditions have been better defined since publication of the AMA 4 Guides. The current terminology is Complex Regional Pain Syndrome (CRPS) type I (referring to what was termed Reflex Sympathetic Dystrophy) and Complex Regional Pain Syndrome type II (referring to what was termed Causalgia).

- 2.14** For a diagnosis of Complex Regional Pain Syndrome at least eight (8) of the following 11 criteria must be present. The criteria are: skin colour that is mottled or cyanotic; cool skin temperature; oedema; skin dry or overly moist; skin texture that is smooth and non elastic; soft tissue atrophy (especially fingertips); joint stiffness and decreased passive motion; nail changes with blemished, curved or talon-like nails; hair growth changes with hair falling out, longer or finer; x-rays showing trophic bone changes or osteoporosis; bone scan showing findings consistent with CRPS.
- 2.15** When the diagnosis of Complex Regional Pain Syndrome has been established, impairment due to CRPS type I (previously Reflex Sympathetic Dystrophy) is evaluated as follows:
- (i)** Rate the upper extremity impairment resulting from the loss of motion of each individual joint affected by CRPS.
 - (ii)** Rate the upper extremity impairment resulting from sensory deficits and pain according to the grade that best describes the severity of interference with activities of daily living as described in Table 11a (p 48, AMA 4 Guides).
The maximum value is not applied in this case (see 2.11 above). The value selected represents the upper extremity impairment. A nerve multiplier is not used.
 - (iii)** Combine the upper extremity value for loss of joint motion (step 1) with the value for pain and sensory deficits (step 2) using the Combined Values Chart (pp 322-324, AMA 4 Guides).
 - (iv)** Convert the upper extremity impairment to whole person impairment by using Table 3 (p 20, AMA 4 Guides).
- 2.16** When the diagnosis of Complex Regional Pain Syndrome has been established, impairment due to CRPS type II (previously Causalgia) is evaluated as follows:
- (i)** Rate the upper extremity impairment resulting from the loss of motion of each individual joint affected by CRPS.
 - (ii)** Rate the upper extremity impairment present resulting from sensory deficits and pain according to the methods described in section 3.1k (pp 46-56, AMA 4 Guides) and Table 11a (p 48, AMA 4 Guides).
 - (iii)** Rate the upper extremity impairment resulting from motor deficits and loss of power of the injured nerve according to the determination method described in section 3.1k (pp 46-56, AMA 4 Guides) and Table 12a (p 49, AMA 4 Guides);
 - (iv)** Combine the upper extremity impairment percentages for loss of joint motion (step 1), pain and sensory deficits (step 2) and motor deficits (step 3) using the Combined Values Chart (pp 322-324, AMA 4 Guides).
 - (v)** Convert the upper extremity impairment to whole person impairment by using Table 3 (p 20, AMA 4 Guides).

Impairment due to other disorders of the upper extremity

- 2.17 The section, “Impairment Due to Other Disorders of the Upper Extremity” (section 3.1m, pp 58-65 AMA 4 Guides), should be rarely used in the context of motor vehicle injuries. The assessor must take care to avoid duplication of impairments.
- 2.18 Radiographs for carpal instability (p 61, AMA 4 Guides) should only be considered, if available, along with the clinical signs. X-ray examination should not be performed solely for the impairment evaluation.
- 2.19 Strength evaluations (pp 64-65, AMA 4 Guides) and Table 34 must not be used, as they are unreliable indicators of impairment. Where actual loss of muscle bulk has occurred the assessment can be completed by analogy, for example with a relevant peripheral nerve injury. Similar principles can be applied where tendon transfers have been performed or after amputation reattachment, if no other suitable methods of impairment evaluation are available.

Chapter 3

Lower Extremity Impairment

Introduction

3.1 The lower extremity is discussed in section 3.2 of Chapter 3 in the AMA 4 Guides (pp 75-93). This section provides a number of alternative methods of assessing permanent impairment involving the lower extremity. It is a complex section that requires an organised approach. Findings should be carefully documented on a worksheet.

The approach to assessment of the lower extremity

3.2 Assessment of the lower extremity involves a physical evaluation that can utilise a variety of methods. **In general, the method that most specifically addresses the impairment present should be used.** For example, impairment due to a peripheral nerve injury in the lower extremity should be assessed with reference to that nerve rather than by its effect on gait.

3.3 There are several different forms of evaluation that can be used as indicated in sections 3.2a to 3.2m (pp 75-89 AMA 4 Guides). Table 3.3 in these MAA Guidelines indicates which evaluation methods can and cannot be *combined* for the assessment of each injury. This table can only be used to assess one combination at a time. It may be possible to perform several different evaluations as long as they are reproducible and meet the conditions specified below and in the AMA 4 Guides. **The most specific method, or combination of methods, of impairment assessment should be used.** When more than one equally specific method or combination of methods of rating the same impairment is available, the method providing the highest rating should be chosen. Table 3.4 can be used to assist the process of selecting the most appropriate method(s) of rating lower extremity impairment.

3.4 If there is more than one injury in the limb, each injury is to be assessed separately and then the whole person impairments combined. For example, a fractured tibial plateau and laxity of the medial collateral ligament are separately assessed and their whole person impairment combined.

3.5 **If the contralateral uninjured joint has a less than average mobility, the impairment value(s) corresponding with the uninjured joint can serve as a baseline and are subtracted from the calculated impairment for the injured joint, only if there is a reasonable expectation the injured joint would have had similar findings to the uninjured joint before injury. The rationale for this decision should be explained in the impairment evaluation report.**

3.6 The assessed impairment of a part or region can never exceed the impairment due to amputation of that part or region. For a lower limb, therefore, the maximum evaluation is 40% whole person impairment.

- 3.7 When the Combined Values Table is used, the assessor must ensure that the values all relate to the same system (i.e. whole person impairment, or lower extremity impairment, or foot impairment). Lower extremity impairment can then be combined with impairments in other parts of the body using the same Table and ensuring only whole person impairments are combined.
- 3.8 Table 3.3 should be referred to frequently in order to determine which impairments can be combined and which cannot.

Specific Interpretation of the AMA 4 Guides

Leg length discrepancy

- 3.9 **When true leg length discrepancy is determined clinically (p 75, AMA 4 Guides) the method used must be indicated** (for example, tape measure from anterior superior iliac spine to medial malleolus). Clinical assessment of leg length discrepancy is an acceptable method, but if computerised tomography films are available they should be used in preference. Such an examination should not be ordered solely for determining leg lengths.
- 3.10 **Table 35 (p 75, AMA 4 Guides) should have the element of choice removed such that impairments for leg length should be read as the higher figure of the range quoted**, being 0, 3, 5, 7, or 8 for whole person impairment, or 0, 9, 14, 19, or 20 for lower limb impairment.

Gait derangement

- 3.11 **Assessment of impairment based on gait derangement should be used as the method of last resort (pp 75-76 AMA 4 Guides). Methods most specific to the nature of the disorder should always be used in preference. If gait derangement is used it cannot be combined with any other impairment evaluation in the lower extremity. It can only be used if no other valid method is applicable and reasons why it is chosen should be provided in the impairment evaluation report.**
- 3.12 **The use of any walking aid must be necessary and permanent.**
- 3.13 **In the application of Table 36 (p 76, AMA 4 Guides) Item b. is deleted as the Trendelenburg sign is not sufficiently reliable.**

Muscle atrophy (unilateral)

- 3.14 This section (p 76, AMA 4 Guides) is not applicable if the limb other than that being assessed is abnormal (for example, if varicose veins cause swelling, or if there is other injury).
- 3.15 **In the use of Table 37 (p 77, AMA 4 Guides) the element of choice should be removed in the impairment rating and only the higher figure used.** Therefore, for the thigh, the whole person impairment should be assessed as 0, 2, 4, or 5%, or lower limb impairment as 0, 8, 13, or 13% respectively. For the calf, the equivalent figures have the same numerical values.

Manual muscle strength testing

- 3.16 The Medical Research Council (MRC) gradings for muscle strength are universally accepted. They are not linear in their application, but ordinal. Only six grades (0-5) should be used, as they are reproducible among experienced assessors. The descriptions in Table 38 (p 77, AMA 4 Guides) are correct. The results of electrodiagnostic methods and tests are not to be considered in the evaluation of muscle testing which can be performed manually. Table 39 (p 77, AMA 4 Guides) is to be used for this method of evaluation.

Range of motion

- 3.17 Although range of motion (pp 77-78, AMA 4 Guides) appears to be a suitable method for evaluating impairment, it can be subject to variation because of pain during motion at different times of examination and/or possible lack of co-operation by the person being assessed.

Range of motion is assessed as follows:

- (i) **A goniometer should be used where clinically indicated.**
 - (ii) Passive range of motion may form part of the clinical examination to ascertain clinical status of the joint, but impairment should only be calculated using active range of motion measurements.
 - (iii) If the assessor is not satisfied that the results of a measurement are reliable, active range of motion should be measured with at least three consistent repetitions.
 - (iv) If there is inconsistency in range of motion then it should not be used as a valid parameter of impairment evaluation. Refer to section 1.43 of these Guidelines.
 - (v) If range of motion measurements at examination cannot be used as a valid parameter of impairment evaluation, the assessor should then use discretion in considering what weight to give other evidence available to determine if an impairment is present.
- 3.18 If range of motion is used as an assessment measure, Tables 40 to 45 (p 78, AMA 4 Guides) are selected for the joint or joints being tested. Where a joint has more than one range of motion, and the impairment assessment is different (i.e. mild, moderate or severe) for the different directions, then only the highest level of impairment is selected.

Ankylosis

- 3.19 **For the assessment of impairment when a joint is ankylosed (pp 79-82, AMA 4 Guides) the calculation to be applied is to select the impairment if the joint is ankylosed in optimum position, and then, if not ankylosed in the optimum position, by adding (not combining) the values of whole person impairment using Tables 46 - 61 (pp 79-82, AMA 4 Guides).**

Note: The example listed under the heading “Hip” on p 79 AMA 4 Guides is incorrect.

Table 3.1 Impairment for ankylosis in the optimum position is:

JOINT	Whole Person	Lower Extremity	Ankle or Foot
HIP	20%	50%	
KNEE	27%	67%	
ANKLE	4%	10%	14%
FOOT	4%	10%	14%

3.20 Note that the whole person impairment from ankylosis of a joint, or joints, in the lower limb cannot exceed 40% whole person impairment or 100% lower limb impairment. *If this figure is exceeded when lower limb impairments are combined then only 40% can be accepted as the maximum whole person impairment.*

Arthritis

3.21 Impairment due to arthritis (pp 82-83, AMA 4 Guides) can be assessed by measuring the distance between the subchondral bone ends (“joint space”) if radiography is performed in defined positions. It indicates the thickness of articular cartilage. No notice is to be taken of other diagnostic features of arthritis such as osteophytes, or cystic changes, in the bone.

Hip radiography can be done in any position of the hip, but specified positions for the knee and ankle (p 82, AMA 4 Guides) must be achieved by the radiographer.

3.22 Table 62 (p 83, AMA 4 Guides) indicates the impairment assessment for arthritis based on articular cartilage thickness.

3.23 If arthritis is used as the basis for impairment assessment in this way, then the rating *cannot be combined* with gait derangement, muscle atrophy, muscle strength or range of movement assessments. It can be combined with a diagnosis-based estimate (See Table 3.3).

3.24 When interpreting Table 62 (p 83, AMA 4 Guides) if the articular cartilage interval is not a whole number, round to the higher impairment figure.

Amputation

3.25 Where there has been amputation of part of a lower extremity Table 63 (p 83, AMA 4 Guides) applies. In that Table the references to 3 inches for below the knee amputation should be converted to 7.5 centimetres.

Diagnosis-based estimates (lower extremity)

3.26 Section 3.2i (pp 84-88, AMA 4 Guides) lists a number of conditions that fit a category of diagnosis-based estimates. They are listed in Table 64 (pp 85-86, AMA 4 Guides). When using this Table it is essential to read the footnotes carefully. Only permanent impairments should be assessed (see section 1.21).

3.27 It is possible to *combine* impairments from Table 64 for diagnosis-based estimates with other components (e.g. nerve injury) using the Combined Values Chart (pp 322-324, AMA 4 Guides).

- 3.28 **Pelvic fractures should be assessed using section 3.4 (p 131 AMA 4 Guides). Fractures of the acetabulum should be assessed using Table 64 (pp 85-86, AMA 4 Guides).**
- 3.29 In interpreting Table 64 - reference to the hindfoot, intra-articular fractures, the words *subtalar joint*, *talonavicular joint*, and *calcaneocuboid joint* imply that the bone is displaced on one or both sides of the joint mentioned.
- 3.30 In order to avoid the risk of double assessment, if avascular necrosis with collapse is used as the basis, it cannot be combined with intra-articular fracture of the ankle with displacement, or intra-articular fracture of the hind foot with displacement in Table 64, column 1 (p 86 AMA 4 Guides).
- 3.31 Table 65 and Table 66 (pp 87-88, AMA 4 Guides) use a different concept of evaluation. A point score system is applied, and then the total of points calculated for the hip or knee joint respectively, is converted to an impairment rating from Table 64. Tables 65 and 66 refer to the hip and knee joint replacement respectively. Note that, while all the points are *added* in Table 65, some points are *deducted* when Table 66 is used.
- 3.32 In Table 65 references to “distance walked” under “b. Function” should be construed as six blocks being 600 metres, and three blocks being 300 metres.

Skin loss (lower extremity)

- 3.33 **Skin loss** can only be included in the calculation of impairment if it is in certain sites and meets the criteria listed in Table 67 (p 88, AMA 4 Guides).

Impairment of the lower extremity due to peripheral nerve injuries

- 3.34 When assessing the impairment due to peripheral nerve injury (pp 88-89, AMA 4 Guides) assessors should read the text in this section. Note that the separate impairments for the motor, sensory and dysaesthetic components of nerve dysfunction in Table 68 (p 89, AMA 4 Guides) are to be *combined*.
- 3.35 Note that the (posterior) tibial nerve is not included in Table 68, but its contribution can be calculated by subtraction of common peroneal nerves from sciatic nerve ratings. The tibial nerve can be assessed as follows with reference to Table 68. The values in brackets are lower extremity impairment values.

	Motor	Sensory	Dysaesthesia
Sciatic nerve	30 (75)	7 (17)	5 (12)
Common peroneal nerve	15 (42)	2 (5)	2 (5)
Tibial nerve	15 (33)	5 (12)	3 (7)

- 3.36 Peripheral nerve injury impairments can be *combined* with other impairments, but not those for *muscle strength, gait derangement, muscle atrophy and CRPS*, as shown in Table 3.3.
- 3.37 When using Table 68 refer to Tables 11a and 12a (pp 48-49, AMA 4 Guides) and 2.10, 2.11 and 2.12 of MAA Guidelines.

Impairment of the lower extremity due to complex regional pain syndrome

3.38 The section, "Causalgia and Reflex Sympathetic Dystrophy" (p 89, AMA 4 Guides) **should not be used**. These conditions have been better defined since the publication of the AMA 4 Guides. The current terminology is Complex Regional Pain Syndrome type I (referring to what was termed Reflex Sympathetic Dystrophy) and Complex Regional Pain Syndrome type II (referring to what was termed Causalgia).

3.39 When complex regional pain syndrome occurs in the lower extremity it should be evaluated as for the Upper Extremity using 2.13 - 2.16, MAA Guidelines.

Impairment of the lower extremity due to peripheral vascular disease

3.40 Lower extremity impairment due to Peripheral Vascular Disease is evaluated from Table 69 (p 89, AMA 4 Guides). **Table 14 (p 198, AMA 4 Guides) should not be used**. In Table 69 there is a range of lower extremity impairments, not whole person impairment, within each of the Classes 1 to 5. As there is a clinical description of conditions that place a person's lower extremity impairment in a particular class, the assessor has a choice of impairment rating within a class, the value of which is left to the clinical judgment of the assessor.

3.41 Lower extremity impairment values from Table 69 (p 89, AMA 4 Guides) must be converted to whole person impairment using Table 3.2.

Table 3.2 Whole person impairment values calculated from lower extremity impairment

% Impairment of		% Impairment of		% Impairment of		% Impairment of	
Lower Extremity	Whole Person	Lower Extremity	Whole Person	Lower Extremity	Whole Person	Lower Extremity	Whole Person
1	= 0	26	= 10	51	= 20	76	= 30
2	= 1	27	= 11	52	= 21	77	= 31
3	= 1	28	= 11	53	= 21	78	= 31
4	= 2	29	= 12	54	= 22	79	= 32
5	= 2	30	= 12	55	= 22	80	= 32
6	= 2	31	= 12	56	= 22	81	= 32
7	= 3	32	= 13	57	= 23	82	= 33
8	= 3	33	= 13	58	= 23	83	= 33
9	= 4	34	= 14	59	= 24	84	= 34
10	= 4	35	= 14	60	= 24	85	= 34
11	= 4	36	= 14	61	= 24	86	= 34
12	= 5	37	= 15	62	= 25	87	= 35
13	= 5	38	= 15	63	= 25	88	= 35
14	= 6	39	= 16	64	= 26	89	= 36
15	= 6	40	= 16	65	= 26	90	= 36
16	= 6	41	= 16	66	= 26	91	= 36
17	= 7	42	= 17	67	= 27	92	= 37
18	= 7	43	= 17	68	= 27	93	= 37
19	= 8	44	= 18	69	= 28	94	= 38
20	= 8	45	= 18	70	= 28	95	= 38
21	= 8	46	= 18	71	= 28	96	= 38
22	= 9	47	= 19	72	= 29	97	= 39
23	= 9	48	= 19	73	= 29	98	= 39
24	= 10	49	= 20	74	= 30	99	= 40
25	= 10	50	= 20	75	= 30	100	= 40

Table 3.3 Permissible combinations of lower extremity assessment methods

	Limb Length Discrepancy	Gait Derangement	Muscle Atrophy	Muscle Strength	Range of Motion or Ankylosis	Arthritis	Amputations	Diagnosis -Based Estimates	Skin Loss	Peripheral Nerve Injuries	Complex Regional Pain Syndrome	Vascular Disorders
Limb Length Discrepancy	-		✓	✓	✓	✓		✓	✓	✓	✓	✓
Gait Derangement		-										
Muscle Atrophy	✓		-						✓			✓
Muscle Strength	✓			-			✓		✓		o	✓
Range of Motion or Ankylosis	✓				-		✓		✓	✓	o	✓
Arthritis	✓					-	✓	✓	✓	✓	✓	✓
Amputations				✓	✓	✓	-	✓	✓	✓	✓	✓
Diagnosis-Based Estimates	✓					✓	✓	-	✓	✓	✓	✓
Skin Loss	✓		✓	✓	✓	✓	✓	✓	-	✓	✓	✓
Peripheral Nerve Injuries	✓				✓	✓	✓	✓	✓	-		✓
Complex Regional Pain Syndrome	✓			o	o	✓	✓	✓	✓		-	
Vascular Disorders	✓		✓	✓	✓	✓	✓	✓	✓	✓		-

✓ You may combine these methods of assessment

o See specific instructions for CRPS in lower extremity

Source: American Medical Association, The Guides Newsletter, January/February, 1998; Lower Extremity Section, pp3/75-3/93, The AMA 4 Guides to the Evaluation of Permanent Impairment, Fourth Edition

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Table 3.4: Lower extremity worksheet

Line	Impairment	Table	AMA 4 page	Potential Impairment	Selected Impairment
1	Gait derangement	36	76		
2	Unilateral muscle atrophy	37	77		
3	True muscle weakness	39	77		
4	Range of motion	40-45	78		
5	Joint ankylosis	46-61	79-82		
6	Arthritis	62	83		
7	Amputation	63	83		
8	Diagnosis-based estimates	64	85-86		
9	Limb length discrepancy	35	75		
10	Skin loss	67	88		
11	Peripheral nerve deficit	68	89		
12	Peripheral vascular disease	69	89		
13	Complex Regional Pain Syndrome	See sections 3.38 and 3.39	AMA 4 not used		
	Combined Impairment Rating (refer to Table 3.3 for permissible combinations)				

Chapter 4

Spinal Impairment

Introduction

- 4.1 The spine is discussed in section 3.3 of Chapter 3 in the AMA 4 Guides (pp 94-138). That Chapter presents several methods of assessing impairments of the spine. **Only the diagnosis-related estimate (DRE) method is to be used for evaluation of impairment of the spine, as modified by this Chapter.** The AMA 4 Guides use the term 'Injury Model' for this method.
- 4.2 The "Injury Model" relies especially on evidence of neurological deficits and uncommon, adverse structural changes, such as fractures and dislocations. Under this model DREs are differentiated according to clinical findings that are verifiable using standard medical procedures.
- 4.3 **The assessment of spinal impairment is made at the time a person is examined, provided the assessor is convinced the condition is stable and permanent. If surgery has been performed then the effect of the surgery, as well as the structural inclusions, must be taken into consideration when making the assessment of impairment.**
Refer also to section 1.22 in these MAA Guidelines.
- 4.4 The AMA 4 Guides use the terms cervicothoracic, thoracolumbar and lumbosacral for the three spine regions. These terms relate to the cervical, thoracic and lumbar regions respectively.

The approach to assessment of the spine

- 4.5 The Range of Motion (ROM) model is not to be used for spinal impairment evaluation. (Pages 112-130, AMA 4 Guides, including Table 75 are not to be used.)
- 4.6 The assessor should start with Table 4.1 of these MAA Guidelines to establish the appropriate category for the spine impairment. Its principal difference from Table 70 (p 108, AMA 4 Guides) is the removal of the term 'motion segment integrity' wherever it appears (see section 4.13 below).

Table 4.1: Assessing spinal impairment

Patient's condition	Diagnosis-related estimate category				
	I	II	III	IV	V
Low back pain, neck pain [back pain (lumbago), WAD* I] complaints or symptoms	I				
Vertebral body compression, < 25%		II			
Low back pain or neck pain with guarding or non-verifiable radicular complaints or nonuniform range of motion (dysmetria)		II			
Posterior element fracture, healed, stable, no dislocation or radiculopathy		II			
Transverse or spinous process fracture with displacement of fragment, healed, stable		II			
Low back or neck pain with radiculopathy [WAD III]			III		
Vertebral body compression fracture 25–50%			III		
Posterior element fracture with spinal canal deformity or radiculopathy, stable, healed			III		
Radiculopathy			III		
Vertebral body compression > 50%				IV	V
Multilevel structural compromise				IV	V
Spondylolysis with radiculopathy			III	IV	V
Spondylolisthesis without radiculopathy	I	II			
Spondylolisthesis with radiculopathy			III	IV	V
Vertebral body fracture without radiculopathy		II	III	IV	
Vertebral body fracture with radiculopathy			III	IV	V
Vertebral body dislocation without radiculopathy		II	III	IV	
Vertebral body dislocation with radiculopathy			III	IV	V
Previous spine operation without radiculopathy		II	III	IV	
Previous spine operation with radiculopathy			III	IV	V
Stenosis, facet arthrosis or disease, or disc arthrosis	I	II			
Stenosis, facet arthrosis or disease, or disc arthrosis with radiculopathy			III		

*Whiplash associated disorder. WAD 1: Neck complaint of pain, stiffness or tenderness only. No physical sign(s). WAD II: Neck complaint AND musculoskeletal sign(s). Musculoskeletal signs include nonuniform range of motion and point tenderness. WAD III: Neck complaint AND neurological sign(s). Neurological signs include decreased or absent deep tendon reflexes, weakness and sensory deficits. WAD IV: Neck complaint AND fracture or dislocation. Motor Accidents Authority. *Update of Quebec Task Force Guidelines for the Management of Whiplash-associated Disorders*. January 2001: p5. Note: DRE Categories VI, VII and VIII involve spinal cord injuries and should be assessed according to sections 4.41- 4.42 of these Guidelines.

- 4.7 The evaluation should not include any allowance for predicted long-term change. For example, a spinal stenosis syndrome after vertebral fracture, or increased back pain due to osteoarthritis of synovial joints after intervertebral disc injury should not be factored in to the impairment evaluation.
- 4.8 All impairments in relation to the spine should be calculated in terms of whole person impairment and assessed in accordance with this Chapter and Chapter 1 of these MAA Guidelines and Chapter 3.3 of AMA 4 Guides.**
- 4.9 A chart similar to Figure 61 (pp 96-97, AMA 4 Guides) can be utilised for a summary of the spinal history.
- 4.10 The assessment should include: a comprehensive accurate history; a review of all pertinent records available at the assessment; a comprehensive description of the individual's current symptoms; a careful and thorough physical examination; and all findings of relevant laboratory, imaging, diagnostic and ancillary tests available at the assessment. Imaging findings that are used to support the impairment rating should be concordant with symptoms and findings on examination. The assessor should record whether diagnostic tests and radiographs were seen or whether they relied on reports.
- 4.11 While imaging and other studies may assist medical assessors in making a diagnosis, it is important to note that the presence of a morphological variation from what is called 'normal' in an imaging study in and of itself does not make the diagnosis. Several reports indicate that approximately 30% of persons who have never had back pain will have an imaging study that can be interpreted as 'positive' for a herniated disc, and 50% or more will have bulging discs. Further, the prevalence of degenerative changes, bulges and herniations increases with advancing age. To be of diagnostic value, imaging findings must be concordant with clinical symptoms and signs. In other words, an imaging test is useful to confirm a diagnosis, but an imaging result alone is insufficient to qualify for a DRE category.
- 4.12 The assessor should include in the report a description of how the impairment rating was calculated, with reference to the relevant Tables and/or figures used.

Specific Interpretation of the AMA 4 Guides

Loss of motion segment integrity

- 4.13 The section on Loss of Motion Segment Integrity (pp 98-99, AMA 4 Guides) and all subsequent references to it should not be applied, as all conditions in which it might be pertinent are considered to be covered by the "Injury Model" (DRE method).**

Definitions of clinical findings used to place an individual in a DRE category

- 4.14 Definitions of clinical findings which are used to place an individual in a DRE category are provided in the box below.

Definitions of clinical findings

Muscle spasm

Muscle spasm is a sudden, involuntary contraction of a muscle or a 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 assessor 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 assessor gently palpates the paraspinal muscles. With this manoeuvre, the individual normally relaxes the paraspinal muscles on the weight-bearing side. If the assessor witnesses this relaxation, it usually means that true muscle spasm is not present.

Muscle guarding

Guarding is a contraction of muscle to minimise 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.

Nonuniform loss of spinal motion (dysmetria)

Nonuniform loss of motion of the spine in one of the three principle planes is sometimes caused by muscle spasm or guarding. To qualify as true nonuniform loss of motion, the finding must be reproducible and consistent and the assessor must be convinced that the individual is co-operative and giving full effort.

Non-verifiable radicular complaints

Non-verifiable radicular complaints are symptoms (e.g. shooting pain, burning sensation, tingling) that follow the distribution of a specific nerve root, but there are no objective clinical findings (signs) of dysfunction of the nerve root (e.g. loss or diminished sensation, loss or diminished power, loss or diminished reflexes).

Reflexes

Reflexes may be normal, increased, reduced or absent. For reflex abnormalities to be considered valid, the involved and normal limbs should show marked asymmetry on repeated testing. 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. 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. For reasons of reproducibility, the difference in circumference should be 2cm or greater in the thigh and 1 cm or greater in the arm, forearm or calf. The assessor can address asymmetry due to extremity dominance in the report. Measurements should be recorded to the nearest 0.5cm. The atrophy should be clinically explicable in terms of the relevant nerve root affected.

Sciatic nerve root tension signs

Sciatic nerve tension signs are important indicators of irritation of the lumbosacral nerve roots. While most commonly seen in individuals with a herniated lumbar disc, this is not always the case. In chronic nerve root compression due to spinal stenosis, tension signs are often absent. A variety of nerve tension signs have been described. The most commonly used is the straight leg raising test (SLR). When performed in the supine position, the hip is flexed with the knee extended. In the sitting position, with the hip flexed 90 degrees, the knee is extended. The test is positive when thigh and/or leg pain along the appropriate dermatomal distribution is reproduced. The degree of elevation at which pain occurs is recorded.

Research indicates that the maximum movement of nerve roots occurs when the leg is at an angle of 20 degrees to 70 degrees relative to the trunk. However, this may vary depending on the individual's anatomy. Further, the L4, L5, and S1 nerve roots are those that primarily change their length when straight leg raising is performed.

Thus, pathology at higher levels of the lumbar spine is often associated with a negative SLR. Root tension signs are most reliable when the pain is elicited in a dermatomal distribution. Back pain on SLR is not a positive test. Hamstring tightness must also be differentiated from posterior thigh pain due to root tension.

Diagnosis-related estimates (DRE) model

4.15 To determine the correct DRE category, the assessor should start with Table 4.1 (MAA Guidelines), and use this Table in conjunction with the DRE descriptors (pp 102-107 AMA 4 Guides), as clarified by the definitions in the box above with the following amendments to pp 102-107 of the AMA 4 Guides:

- “or history of guarding” is deleted from DRE category I for the lumbosacral spine (p 102) and DRE category I for the cervicothoracic spine (p 103)
- “documented or” as it relates to muscle guarding is deleted from DRE category I for the thoracolumbar spine (p 106)
- replace “that has been observed and documented by a physician” with “that has been observed and documented by the assessor” in DRE category II for the lumbosacral spine (p 102)
- replace “observed by a physician” with “observed by the assessor” in the descriptors for DRE category II for the cervicothoracic spine (p 104) and thoracolumbar spine (p 106)
- replace “or displacement” with “with displacement” in the descriptors for DRE category II for the thoracolumbar spine (p 106).

- 4.16 If an assessor is unable to distinguish between two DRE categories, then the higher of those two categories should apply. **The inability to differentiate should be noted in the assessor's report and explained.**
- 4.17 Table 71 (p 109 AMA 4 Guides) is not to be used. The Definitions of Clinical Findings in the box above should be the criteria by which a diagnosis and allocation of a DRE category are made.

Applying the DRE method

- 4.18 The Specific Procedures and Directions Section (Section 3.3f, p 101, AMA 4 Guides) indicates the steps that should be followed. Table 4.1 (MAA Guidelines) is a simplified version of that section, and should be interpreted in conjunction with the amendments listed above.
- 4.19 DRE I applies when the injured person complains about symptoms but there are no objective clinical findings by the assessor. DRE II applies when there are clinical findings made by the assessor, as described in the sections "Description and Verification", (pp 102–107 AMA 4 Guides) with the amendments, for each of the three regions of the spine. Note that symmetric loss of movement is not dysmetria and does not constitute an objective clinical finding.
- 4.20 When allocating the injured person to a DRE category the assessor must reference the relevant differentiators and/or structural inclusions.
- 4.21 Separate injuries to different regions of the spine should be combined.
- 4.22 Do not combine multiple impairments **within** one spinal region. The highest DRE category within the region should be chosen.

Loss of structural integrity

- 4.23 The AMA 4 Guides (p 99) use the term 'structural inclusions' to define certain spine fracture patterns that may lead to significant impairment and yet not demonstrate any of the findings involving differentiators. Some fracture patterns are clearly described in the examples of DRE categories in sections 3.3g, 3.3h and 3.3i. They are not the only types of injury in which there is a loss of structural integrity of the spine. In addition to potentially unstable vertebral body fractures, loss of structural integrity can occur by purely soft tissue flexion-distraction injuries.

Spondylolysis and spondylolisthesis

- 4.24 Spondylolysis and spondylolisthesis are conditions that are often asymptomatic and are present in 5-6% of the population. In assessing their relevance the degree of slip (antero-posterior translation) is a measure of the grade of spondylolisthesis and not in itself evidence of loss of structural integrity. To assess a claimant as having symptomatic spondylolysis or spondylolisthesis requires a clinical assessment as to the nature and pattern of the injury, the claimant's symptoms, and the assessor's findings on clinical examination. **Table 4.1 can be used to allocate spondylolysis or spondylolisthesis to categories I - V depending on the descriptor's clinical findings in the appropriate DRE. The patient's DRE must fit the description of clinical findings described in the box above.**
- 4.25 Assessors should be aware that acute traumatic spondylolisthesis is a rare event.

Sexual functioning

- 4.26 Sexual dysfunction should only be assessed as an impairment related to spinal injury where there is *other* objective evidence of spinal cord, cauda equina or *bilateral* nerve root dysfunction (Table 19, p 149, AMA 4 Guides). There is no additional impairment rating system for impotence in the absence of objective clinical findings.
- 4.27 Chapter 11 (The Urinary and Reproductive System of the AMA 4 Guides) should only be used to assess impairment for impotence where there has been a direct injury to the urinary tract. If this occurs the impairment for impotence could be *combined* with a spine-related whole person impairment. An example is provided in the AMA 4 Guides (p 257) where there is a fracture and dissociation of the symphysis pubis and a traumatic disruption of the urethra.

Radiculopathy

- 4.28 Radiculopathy is the impairment caused by dysfunction of a spinal nerve root or nerve roots. **To conclude that a radiculopathy is present two or more of the following signs should be found:**
- (i) **loss or asymmetry of reflexes (see the definitions of clinical findings in the box above)**
 - (ii) **positive sciatic nerve root tension signs (see the definitions of clinical findings in the box above)**
 - (iii) **muscle atrophy and/or decreased limb circumference (see the definitions of clinical findings in the box above)**
 - (iv) **muscle weakness which is anatomically localised to an appropriate spinal nerve root distribution**
 - (v) **reproducible sensory loss which is anatomically localised to an appropriate spinal nerve root distribution.**
- 4.29 Note that complaints of pain or sensory features that follow anatomical pathways but cannot be verified by neurological findings do not by themselves constitute radiculopathy. They are described as 'non-verifiable radicular complaints' in the definitions of clinical findings in the box above.
- 4.30 Global weakness of a limb related to pain or inhibition or other factors does not constitute weakness due to spinal nerve malfunction.
- 4.31 Electrodiagnostic tests are rarely necessary investigations and a decision about the presence of radiculopathy can generally be made on clinical grounds if a competent examination is performed. The diagnosis of radiculopathy should not be made solely from electrodiagnostic tests.

Multilevel structural compromise

- 4.32 Multilevel structural compromise is mentioned in Table 70 (p 108, AMA 4 Guides) and refers to those DREs that are in categories IV and V. It is constituted by "structural inclusion", which by definition (p 99, AMA 4 Guides) is related to "spine fracture patterns" and is different from the differentiators and clinical findings in the box above.

- 4.33 Multilevel structural compromise is to be interpreted as fractures of more than one vertebra.** To provide consistency of interpretation of the meaning of multiple vertebral fractures the definition of a vertebral fracture includes any fracture of the vertebral body, or of the posterior elements forming the ring of the spinal canal (the pedicle or lamina). It does not include fractures of transverse processes or spinous processes, even at multiple levels (see also 4.36 of these Guidelines).
- 4.34 Multilevel structural compromise also includes spinal fusion and intervertebral disc replacement.**
- 4.35 Multilevel structural compromise or spinal fusion across regions are assessed as if they are in one region. The region giving the highest impairment value should be chosen. A fusion of L5 and S1 is considered to be an intervertebral fusion.**
- 4.36 A vertebroplasty should be assessed on the basis of the fracture(s) for which it was performed.**
- 4.37 Compression Fracture(s): In determining the percentage loss of height of a compression fracture, the loss of vertebral height should be measured at the most compressed part and must be documented in the impairment evaluation report. The estimated normal height of the compressed vertebra should be determined where possible by averaging the heights of the two adjacent (unaffected) vertebrae.
- 4.38 Fractures of transverse or spinous processes (one or more) with displacement within a spinal region are assessed as DRE category II because the fracture(s) does not disrupt the spinal canal (p 104, AMA 4 Guides), and they do not cause multilevel structural compromise.
- 4.39 One or more end plate fractures in a single spinal region without measurable compression of the vertebral body are rated as DRE category II.
- 4.40 In the application of Table 4.1 to persons with multilevel structural compromise:**
- **Multiple vertebral fractures without radiculopathy are classed as Category IV; and**
 - **Multiple vertebral fractures with radiculopathy are classed as Category V.**

Spinal cord injury

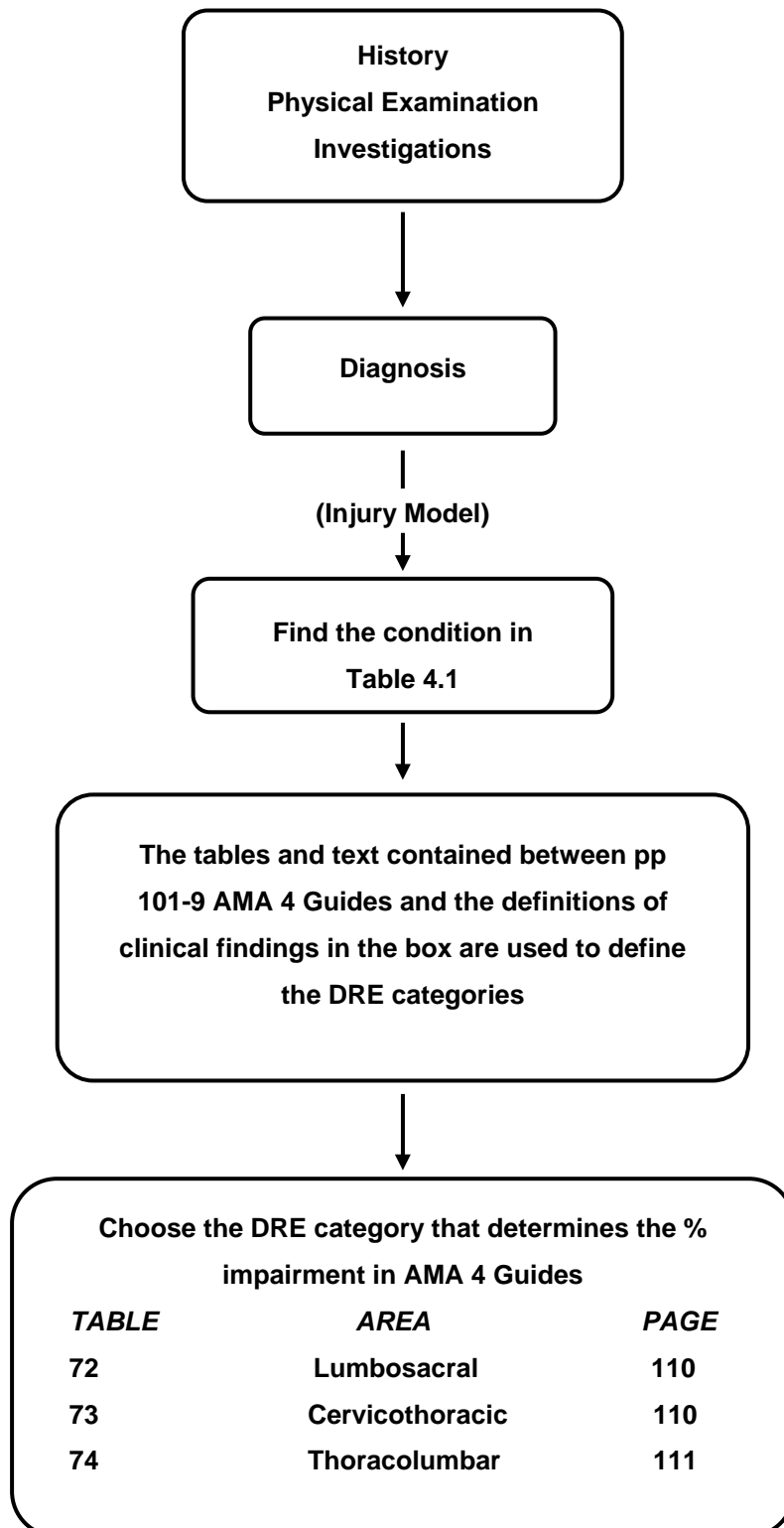
- 4.41 The assessment of spinal cord injury is covered in section 5.6 of these Guidelines.
- 4.42 Cauda equina syndrome:** In the AMA 4 Guides this term does not have its usual medical meaning. For the purposes of the AMA 4 Guides a person with cauda equina syndrome has objectively demonstrated permanent, partial loss of lower extremity function bilaterally. This syndrome may, or may not, have associated objectively demonstrated bowel or bladder impairment.

Pelvic fractures

- 4.43 Pelvic fractures should be assessed using section 3.4 (p 131 AMA 4 Guides). Fractures of the acetabulum should be assessed using Table 64 (pp 85-86, AMA 4 Guides).**
- 4.44 Multiple fractures of the pelvis should be assessed separately and then combined.

TABLE 4.2: Spine: Summary of spinal DRE assessment

(The terms cervicothoracic, thoracolumbar, and lumbosacral have been defined in section 4.4)



Chapter 5

Nervous System Impairment

Introduction

- 5.1 Chapter 4 in the AMA 4 Guides (pp 139-152) provides guidelines on methods of assessing permanent impairment involving the central nervous system. Elements of the assessment of permanent impairment involving the peripheral nervous system can be found in relevant parts of the Upper Extremity, Lower Extremity and Spine sections.
- 5.2 Chapter 4 is logically structured and consistent with the usual sequence of examination of the nervous system. Cortical functions are discussed first, followed by the cranial nerves, the brain stem, the spinal cord and the peripheral nervous system.
- 5.3 Spinal cord injuries should be assessed using the Nervous System Chapter and the Musculoskeletal System Chapter of the AMA 4 Guides and MAA Guides. See section 5.6 of these Guidelines.
- 5.4 **The relevant part of the Upper Extremity, Lower Extremity and Spine sections of the AMA 4 Guides should be used to evaluate impairments of the peripheral nervous system.**

The approach to assessment of permanent neurological impairment

- 5.5 The introduction to Chapter 4 (the Nervous System) of the AMA 4 Guides is ambiguous in its statement about combining nervous system impairments. **The most severe impairment in the categories of (1) disturbances of consciousness and awareness (permanent and episodic), (2) aphasia or communication disorders, (3) mental status and integrative functioning abnormalities, or (4) emotional and behavioural disturbances *only* should be assessed. Select the highest rating from categories 1 to 4. This rating can then be combined with ratings from other body regions.**
- 5.6 A different approach is taken in the assessment of spinal cord impairment (section 4.3, pp 147-148, AMA 4 Guides). In this case impairments due to this pathology can be combined using the Combined Values Chart (pp 322-324 AMA 4 Guides). **It should be noted that section 4.3 The Spinal Cord should be used for motor or sensory impairments caused by a central nervous system lesion.** Impairment evaluation of SCI should be combined with the associated DRE 1-5 from section 3.3 in the Musculoskeletal System Chapter (pp 101-107, AMA 4 Guides). Thus, this section covers hemiplegia due to cortical injury as well as spinal cord injury.
- 5.7 Headache or other pain potentially arising from the nervous system, including migraine, is assessed as part of the impairment related to a specific structure. The AMA 4 Guides state that the impairments percentages shown in the Chapters of the AMA 4 Guides make allowance for the pain that may accompany the impairing condition.
- 5.8 The Nervous System Chapter of the AMA 4 Guides lists many impairments where the range for the associated whole person impairment is from 0 to 9% or 0 to 14%. **Where there is a range of impairment percentages listed, the assessor should nominate an impairment percentage based on the complete clinical circumstances revealed during the consultation.**

Specific Interpretation of the AMA 4 Guides

The central nervous system - cerebrum or forebrain

- 5.9 For an assessment of Mental Status Impairments and Emotional and Behavioural Impairments there should be:**
- (i) evidence of a significant impact to the head, or a cerebral insult, or that the motor accident involved a high velocity vehicle impact; and**
 - (ii) one or more significant medically verified abnormalities such as an abnormal initial post-injury Glasgow Coma Scale score, or Post Traumatic Amnesia, or brain imaging abnormality.**
- 5.10 The results of psychometric testing, if available, should be taken into consideration.**
- 5.11 Assessment of disturbances of Mental Status and Integrative Functioning**
The assessor should use Table 5.1 of these MAA Guidelines, the Clinical Dementia Rating (CDR) which combines cognitive skills and function.
- 5.12 When using the CDR the individual's cognitive function for each category should be scored independently. The maximum CDR score is 3. Memory is considered the primary category, the other categories are secondary. If at least three secondary categories are given the same numeric score as memory then the CDR = M. If three or more secondary categories are given a score greater or less than the memory score, CDR = the score of the majority of secondary categories unless three secondary categories are scored less than M and two secondary categories are scored greater than M. In this case CDR = M. Similarly if two secondary categories are greater than M, two are less than M and one is the same as M, CDR=M.**
- 5.13 Corresponding impairment ratings for CDR scores are listed in Table 5.2 below.**
- 5.14 Assessment of Emotional or Behavioural Disturbances is done using Table 3 of the AMA 4 Guides (p 142).**
- 5.15 Assessment of Arousal and Sleep Disorders, (pp 143-144 and Table 6, p 143, AMA 4 Guides).**
The assessor should make ratings of Sleep and Arousal Disorders based on the clinical assessment normally done for clinically significant disorders of this type.
- 5.16 Visual Impairment Assessment (p 144, AMA 4 Guides).**
An ophthalmologist should assess all impairment of visual acuity, visual fields or extra-ocular movements.

5.17 Trigeminal Nerve Assessment (p 145, AMA 4 Guides).

Sensory impairments of the trigeminal nerve should be assessed with reference to Table 9 (p 145, AMA 4 Guides). The words “or sensory disturbance” should be added to the Table after the words “neuralgic pain” in each instance. Impairment percentages for the three divisions of the trigeminal nerve should be apportioned with extra weighting for the first division (e.g. division 1 40%, and division 2 & 3 30% each).

If present, motor loss for the trigeminal nerve should be assessed in terms of its impact on mastication and deglutition (p 231, AMA 4 Guides).

5.18 Assessment of Sexual Functioning, (p 149, AMA 4 Guides)

Sexual dysfunction is assessed as an impairment only if there is an associated objective neurological impairment. This is consistent with sections 4.26 and 4.27 in these MAA Guidelines.

5.19 Olfaction and Taste

The assessment of olfaction and taste is covered in sections 6.15 and 6.16 of these Guidelines.

Table 5.1 Clinical Dementia Rating

	Impairment Level and CDR Score				
	None 0	Questionable 0.5	Mild 1.0	Moderate 2.0	Severe 3.0
Memory (M)	No memory loss or slight inconsistent forgetfulness	Consistent slight forgetfulness; partial recollection of events; “benign” forgetfulness	Moderate memory loss; more marked for recent events; defect interferes with everyday activities	Severe memory loss; only highly learned material retained; new material rapidly lost	Severe memory loss; only fragments remain
Orientation (O)	Fully oriented	Fully oriented except for slight difficulty with time relationships	Moderate difficulty with time relationships; oriented in place at examination; may have geographic disorientation else where	Severe difficulty with time relationships; usually disoriented to time, often to place	Oriented to person only
Judgement and Problem Solving (JPS)	Solves everyday problems and handles business and financial affairs well; judgement good in relation to past performance	Slight impairment in solving problems, similarities and differences	Moderate difficulty in handling problems, similarities, and differences; social judgement usually maintained	Severely impaired in handling problems, similarities, and differences; social judgement usually impaired	Unable to make judgements or solve problems
Community Affairs (CA)	Independent function at usual level in job, shopping, volunteer and social groups	Slight impairment in these activities	Unable to function independently at these activities although may still be engaged in some; appears normal to casual inspection	No pretence of independent function outside home Appears well enough to be taken to functions outside a family home	No pretence of independent function outside home Appears too ill to be taken to functions outside a family home
Home and Hobbies (HH)	Life at home, hobbies and intellectual interests well maintained	Life at home, hobbies and intellectual interests slightly impaired	Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned	Only simple chores preserved; very restricted interests, poorly maintained	No significant function at home
Personal Care (PC)	Fully capable of self care	Fully capable of self care	Needs prompting	Requires assistance in dressing, hygiene, keeping of personal effects	Requires much help with personal care; frequent incontinence

Table 5.2 Criteria for rating impairment related to mental status

Class 1 1%-14% Impairment of the Whole Person	Class 2 15%-29% Impairment of the Whole Person	Class 3 30%-49% Impairment of the Whole Person	Class 4 50%-70% Impairment of the Whole Person
Impairment exists, but ability remains to perform satisfactorily most activities of daily living CDR = 0.5	Impairment requires direction of some activities of daily living CDR = 1.0	Impairment requires assistance and supervision for most activities of daily living CDR = 2.0	Unable to care for self and be safe in any situation without supervision CDR = 3.0

Chapter 6

Ear, Nose and Throat and Related Structures Impairment

Introduction

- 6.1 Chapter 9 in the AMA 4 Guides (pp 223-234) provides guidelines on methods of assessing permanent impairment involving the ear, nose and throat and related structures, including the face. The assessment of permanent impairment involving scarring of the face may be undertaken using Chapter 13, *The Skin*, in the AMA 4 Guides (pp 279-280) and/or section 9.2 (p 229-230 AMA 4 Guides) *The Face*.
- 6.2 Chapter 9 discusses the ear, hearing, equilibrium, the face, respiratory (air passage) obstruction, mastication and deglutition, olfaction and taste, and speech. There is potential overlap with other chapters, particularly the nervous system, in these areas.

The approach to assessment of ear, nose and throat and related structures

- 6.3 For assessment of impairment of the ear, nose and throat and related structures it is essential the injured person is interviewed by the assessor. While the assessment may be based principally on the results of audiological or other investigations, the complete clinical picture must be elaborated through direct consultation with the claimant by the medical assessor.

Specific Interpretation of the AMA 4 Guides

The ear and hearing

- 6.4 **The Ear and Tinnitus (pp 223-224, AMA 4 Guides).**
Tinnitus is only assessable in the presence of hearing loss. An impairment of up to 5% can be added, not combined, to the percentage binaural hearing impairment prior to converting to whole person impairment hearing loss if tinnitus is permanent and severe.
- 6.5 **Hearing Impairment (pp 224 to 228, AMA 4 Guides).**
Sections 9.1a and 9.1b of the AMA 4 Guides are replaced with the following section.

Hearing impairment

- 6.6 Impairment of an injured person's hearing is determined according to evaluation of the individual's binaural hearing impairment.
- 6.7 **Permanent hearing impairment.** Hearing impairment should be evaluated when the impairment is permanent. Prosthetic devices (i.e. hearing aids) must not be used during evaluation of hearing sensitivity.

- 6.8 **Hearing threshold level for pure tones** is defined as the number of decibels above a standard audiometric zero level for a given frequency at which the listener's threshold of hearing lies when tested in a suitable sound attenuated environment. It is the reading on the hearing level dial of an audiometer calibrated according to Australian Standard AS 2586-1983 of Standards Australia.
- 6.9 **Evaluation of binaural hearing impairment.** Binaural hearing impairment is determined by means of the 1988 NAL tables "Improved Procedure for Determining Percentage Loss of Hearing" with allowance for presbycusis according to the presbycusis correction table in the same publication. ⁽¹⁾
- 6.10 **Table 3 (p 228, AMA 4 Guides) is used to convert binaural hearing impairment to impairment of the whole person.** For example, a person aged 50 with a total unilateral hearing loss in the right ear and no hearing loss in the left ear has 17% binaural hearing impairment less 0% presbycusis correction which is equivalent to 6% whole person impairment.

Equilibrium

- 6.11 **Assessment of impairment due to disorders of equilibrium (pp 228-229 of the AMA 4 Guides) is dependent on objective findings of vestibular dysfunction. Such data must be available to the assessor.**
- 6.12 There is an error in the description of Classes 3, 4 and 5 Criteria of Vestibular Impairment (p 229, AMA 4 Guides). **Class 3 of Impairment of Vestibular function is associated with a whole person impairment of 11% to 30%. Class 4 is 31% to 60% and Class 5, 61% to 95%.**

The face

- 6.13 **In Table 4 (p 230 AMA 4 Guides) "total" means all branches of the facial nerve.**
- 6.14 **Loss of the entire outer ear is 11% whole person impairment.**

Olfaction and taste

- 6.15 There is a discrepancy in the AMA 4 Guides in the treatment of olfaction and taste between the Nervous System Chapter (pp 144, 146) and the ENT Chapter (pp 231-232). **To resolve this difference, the assessor may assign a value of whole person impairment from 1% to 5% for loss of sense of taste and a value of whole person impairment from 1% to 5% for loss of sense of olfaction.**
- 6.16 **However, the very rare case of total permanent loss of taste and olfaction is deemed in these MAA Guidelines to constitute greater than 10% permanent impairment.**

Scarring

- 6.17 Scarring, for example from burns, can be evaluated by applying Table 2 (p 280, AMA 4 Guides) or by applying criteria from other chapters based on the effect of the scarring. Facial scarring/disfigurement may also be assessed by reference to Table 4 (p 230, AMA 4 Guides). Contractures can lead to decreased range of motion of a part, or might involve peripheral nerves, thereby requiring assessment of the associated impairment.

Teeth

- 6.18 An impairment assessment for loss of teeth should be done with the injured person wearing their dental prosthesis if this was normal for the injured person prior to the accident. If, as a result of the accident the injured person required a dental prosthesis for the first time, or a different dental prosthesis, the difference should be accounted for in the assessment of permanent impairment.
- 6.19 Damage to the teeth can only be assessed when there is a permanent impact on mastication and deglutition (p 231, AMA 4 Guides) and/or loss of structural integrity of the face (pp 229-230, AMA 4 Guides).
- 6.20 When using Table 6 (p 231, AMA 4 Guides) Relationship of Dietary Restrictions to Permanent Impairment the first category is to be 0%-19%, not 5%-19%.
- 6.21 In some cases it will be necessary to access current dental x-rays to assess permanent impairment.

Respiration

- 6.22 When Table 5 (p 231, AMA 4 Guides) is used for the evaluation of air passage defects these MAA Guidelines allow 0%-5% whole person impairment where there is significant difficulty in breathing through the nose and examination reveals significant partial obstruction of the right and/or left nasal cavity or nasopharynx or significant septal perforation.

Speech

- 6.23 When Table 7 Speech Impairment Criteria (p. 233, AMA 4 Guides) is used the percentage from the Table must be converted to whole person impairment using Table 9 (p 234, AMA 4 Guides).

References:

1. Improved Procedure for Determining Percentage Loss of Hearing, NAL Report No. 118, National Acoustics Laboratory, Commonwealth of Australia, 1988.

Chapter 7

Mental and Behavioural Disorders Impairment

Introduction

- 7.1 Psychiatric disorders have complex effects on the individual, and impairment is multi-axial.
- 7.2 The AMA 4 Guides do not give percentages of psychiatric impairment in Chapter 14 (pp 291-302), which deals with Mental and Behavioural Disorders. The Guides' authors explain that medically determinable impairments in thinking, affect, intelligence, perception, judgment and behaviour are difficult to translate into functional limitations.
- 7.3 One of the ways to determine the degree of psychiatric impairment is to examine the level of disability produced by an equivalent degree of physical impairment. The compatibility between psychiatric and physical disability will minimize discrimination between persons suffering psychiatric injuries and persons suffering physical injuries.
- 7.4 **The Assessment of Mental and Behavioural Disorders must be undertaken in accordance with the Psychiatric Impairment Rating Scale as set out in these MAA Guidelines. Chapter 14 of the AMA 4 Guides (pp 291-302) is to be used for background or reference only.**
- 7.5 The Psychiatric Impairment Rating Scale (PIRS) has been developed drawing heavily on Chapter 14 of the AMA 4 Guides.
- 7.6 The AMA 4 Guides provide a framework to determine whether a motor vehicle accident has caused psychiatric impairment. They bridge the gap between impairment and disability by focussing on four areas or aspects of functioning:
1. Activities of daily living (three aspects of ADL are used in the PIRS system)
 2. Social functioning
 3. Concentration, persistence and pace
 4. Adaptation
- These areas are described in detail on pp 294-295, AMA 4 Guides.
- 7.7 Activities of daily living include self-care, personal hygiene, communication, ambulation, travel and social and recreational activities.
- 7.8 Social functioning refers to capacity to get along with others and communicate effectively.
- 7.9 Concentration, persistence and pace is defined as the ability to sustain focussed attention, long enough to permit the timely completion of tasks commonly found in work settings.
- 7.10 Adaptation (also called deterioration or de-compensation in work or work-like settings) refers to the repeated failure to adapt to stressful circumstances.
- 7.11 Impairment is divided into five classes ranging from no impairment to extreme impairment.
- 7.12 **Mental and behavioural disorders resulting from an organic brain injury are most suitably assessed as an organic problem under the Nervous System Impairment Chapter of these MAA Guidelines (Chapter 5).**

Approach to assessment of mental and behavioural disorders

- 7.13 **The impairment must be attributable to a recognised psychiatric diagnosis** in accordance with the Diagnostic Statistics Manual of Mental Disorders (4th Edition) [DSM IV], Internal Classification of Diseases (10th Edition) [ICD 10] or a substantial body of peer review research literature. The impairment evaluation report must specify the diagnostic criteria upon which the diagnosis is based.
- 7.14 Impairment due to physical injury, for example, deficits in self-care or travel caused by brain or spinal cord injury, is assessed using different criteria by nervous system impairment assessors.
- 7.15 **The PIRS is not to be used to measure impairment due to pain or somatoform disorders.**
- 7.16 Where cognitive deficits are suspected, the assessor must carefully consider the history of the injury, medical treatment and progress through rehabilitation. The assessor will also take into account results of CT and MRI scans, electroencephalograms (EEGs) and results of psychometric tests.
- 7.17 The scale is to be used by a properly trained assessor. Clinical judgment will be the most important tool in the application of the scale. **The impairment rating must be consistent with a recognised psychiatric diagnosis, and clinical experience.**
- 7.18 In order to measure impairment caused by a specific event, the assessor **must**, in the case of an injured person with a pre-existing psychiatric diagnosis or condition, estimate the overall pre-existing impairment using precisely the method set out in this Chapter, and subtract this value from the current impairment rating.

The Psychiatric Impairment Rating Scale

- 7.19 Behavioural consequences of psychiatric disorder are assessed on six 'Areas of Function', each of which evaluates an area of functional impairment:
- Self-care and personal hygiene (Table 7.1)
 - Social and recreational activities (Table 7.2)
 - Travel (Table 7.3)
 - Social functioning (relationships) (Table 7.4)
 - Concentration, persistence and pace (Table 7.5)
 - Adaptation (Table 7.6).
- 7.20 Impairment in each area of function is rated using class descriptors. Classes range from 1 to 5 according to severity. The standard form (Figure 7.1) must be used when scoring the PIRS. The classes in each Area of Function are described by way of common examples. These are intended to be illustrative rather than literal criteria. The assessor should obtain a history of the injured person's pre-accident lifestyle, activities and habits and then assess the extent to which these have changed as a result of the psychiatric injury. The assessor should take into account variations in lifestyle due to age, gender, cultural, economic, educational and other factors.

Adjustments for effects of treatment or lack of treatment

7.21 An adjustment for the effects of prescribed treatment may be made by the assessor if all of the following requirements are met:

- (i) There is research evidence demonstrating that the treatment prescribed is effective for the claimant's diagnosed psychiatric condition;
- (ii) The assessor is satisfied that the treatment has been appropriate, for example, medication has been taken in the appropriate dose and duration;
- (iii) There is clear clinical evidence that the treatment has been effective, that is, the claimant's symptoms have improved and/or functioning has improved; and
- (iv) It is the clinical judgement of the assessor that ceasing treatment will result in deterioration of symptoms and/or a worsening in function.

The assessor may increase the percentage of whole person impairment by 0% whole person impairment (no or negligible treatment effect), 1% whole person impairment (a mild treatment effect), 2% whole person impairment (a moderate treatment effect) or 3% whole person impairment (a full remission). This paragraph does not apply to the use of analgesics, anti-inflammatory or anti-depressant drugs for analgesia or pain management.

Table 7.1 Psychiatric Impairment Rating Scale

Self-care and personal hygiene

Class 1	No deficit, or minor deficit attributable to normal variation in the general population.
Class 2	Mild impairment. Able to live independently and look after self adequately, although may look unkempt occasionally. Sometimes misses a meal or relies on take-away food.
Class 3	Moderate impairment. Cannot live independently without regular support. Needs prompting to shower daily and wear clean clothes. Cannot prepare own meals, frequently misses meals. Family member or community nurse visits (or should visit) 2-3 times per week to ensure minimum level of hygiene and nutrition.
Class 4	Severe impairment. Needs supervised residential care. If unsupervised, may accidentally or purposefully hurt self.
Class 5	Totally impaired. Needs assistance with basic functions, such as feeding and toileting.

Table 7.2 Psychiatric Impairment Rating Scale

Social and recreational activities

Class 1	No deficit, or minor deficit attributable to normal variation in the general population. Able to go out regularly to cinemas, restaurants or other recreational venue. Belongs to clubs or associations and is actively involved with these.
Class 2	Mild impairment. Able to occasionally go out to social events without needing a support person, but does not become actively involved, e.g. in dancing, cheering favourite team.
Class 3	Moderate impairment. Rarely goes to social events, and mostly when prompted by family or close friend. Unable to go out without a support person. Not actively involved, remains quiet and withdrawn.
Class 4	Severe impairment. Never leaves place of residence. Tolerates the company of family member or close friend, but will go to a different room or garden when others visit family or flat mate.
Class 5	Totally impaired. Cannot tolerate living with anybody, extremely uncomfortable when visited by close family member.

Table 7.3 Psychiatric Impairment Rating Scale**Travel**

Class 1	No deficit, or minor deficit attributable to normal variation in the general population. Able to travel to new environments without supervision.
Class 2	Mild impairment. Able to travel without support person, but only in a familiar area such as local shops or visiting a neighbour.
Class 3	Moderate impairment. Unable to travel away from own residence without support person. Problems may be due to excessive anxiety or cognitive impairment.
Class 4	Severe impairment. Finds it extremely uncomfortable to leave own residence even with a trusted person.
Class 5	Totally impaired. Cannot be left unsupervised, even at home. May require two or more persons to supervise when travelling.

Table 7.4 Psychiatric Impairment Rating Scale**Social functioning**

Class 1	No deficit, or minor deficit attributable to normal variation in the general population. No difficulty in forming and sustaining relationships, e.g. partner, close friendships lasting years.
Class 2	Mild impairment. Existing relationships strained. Tension and arguments with partner or close family member, loss of some friendships.
Class 3	Moderate impairment. Previously established relationships severely strained, evidenced for example by periods of separation or domestic violence. Partner, relatives or community services looking after children.
Class 4	Severe impairment. Unable to form or sustain long-term relationships. Pre-existing relationships ended, e.g. lost partner, close friends. Unable to care for dependants, e.g. own children, elderly parent.
Class 5	Totally impaired. Unable to function within society. Living away from populated areas, actively avoids social contact.

**Table 7.5 Psychiatric Impairment Rating Scale
Concentration, persistence and pace**

Class 1	No deficit, or minor deficit attributable to normal variation in the general population. Able to operate at previous educational level e.g. pass a TAFE or university course within normal time frame.
Class 2	Mild impairment. Can undertake a basic retraining course, or a standard course at a slower pace. Can focus on intellectually demanding tasks for up to thirty minutes e.g. then feels fatigued or develops headache.
Class 3	Moderate impairment. Unable to read more than newspaper articles. Finds it difficult to follow complex instructions, e.g. operating manuals, building plans, make significant repairs to motor vehicle, type detailed documents, follow a pattern for making clothes, tapestry or knitting.
Class 4	Severe impairment. Can only read a few lines before losing concentration. Difficulties following simple instructions. Concentration deficits obvious even during brief conversation. Unable to live alone, or needs regular assistance from relatives or community services.
Class 5	Totally impaired. Needs constant supervision and assistance within an institutional setting.

**Table 7.6 Psychiatric Impairment Rating Scale
Adaptation**

Class 1	No deficit, or minor deficit attributable to normal variation in the general population. Able to work full time. Duties and performance are consistent with person's education and training. The person is able to cope with the normal demands of the job.
Class 2	Mild impairment. Able to work full time in a different environment. The duties require comparable skill and intellect. Can work in the same position, but no more than 20 hours per week e.g. no longer happy to work with specific persons, work in a specific location due to travel required.
Class 3	Moderate impairment. Cannot work at all in same position as previously. Can perform less than 20 hours per week in a different position, which requires less skill or is qualitatively different e.g. less stressful.
Class 4	Severe impairment. Cannot work more than one or two days at a time, less than twenty hours per fortnight. Pace is reduced, attendance is erratic.
Class 5	Totally impaired. Cannot work at all.

Calculation of Whole Person Psychiatric Impairment

7.22 Rating psychiatric impairment using the PIRS is a three-step procedure:

- (i) **Determining the Median Class Score**
- (ii) **Calculation of the Aggregate Score**
- (iii) **Converting the Median Class and Aggregate Score to % whole person impairment**

7.23 **Determining the Median Class Score:** Each area of function described in the PIRS is given an impairment rating ranging from Class 1 to 5. The six class scores are arranged in ascending order using the standard form (Figure 7.1). The median class is then calculated by averaging the two middle scores. For example:

Example A:	1, 2, 3, 3 , 4, 5	Median Class = 3
Example B:	1, 2, 2, 3 , 3, 4	Median Class = 2.5 = 3
Example C:	1, 2, 3, 5 , 5, 5	Median Class = 4

7.24 If a score falls between two classes it is rounded up to the next class. A Median Class Score of 2.5 thus becomes 3.

The Median Class Score method was chosen as it is not influenced by extremes. Each area of function is assessed separately. Whilst impairment in one area is neither equivalent to nor interchangeable with impairment in other areas, the median seems the fairest way to translate different impairments onto a linear scale.

7.25 Calculation of the Aggregate Score: The Aggregate Score is used to determine an exact percentage of impairment within a particular class range. The six class scores are added to give the aggregate score.

7.26 Converting the Aggregate Score: The median class and aggregate score are converted to a percentage impairment score using the Conversion Table (Table 7.7).

Table 7.7: Conversion Table

		Aggregate score																														
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
Class 1		0	0	1	1	2	2	2	3	3																						
Class 2					4	5	5	6	7	7	8	9	9	10																		
Class 3									11	13	15	17	19	22	24	26	28	30														
Class 4													31	34	37	41	44	47	50	54	57	60										
Class 5																				61	65	70	74	78	83	87	91	96	100			

Conversion Table – Explanatory Notes

A Distribution of aggregate scores

The lowest aggregate score that can be produced is: 1+1+1+1+1+1=6.

The highest score that can be produced is: 5+5+5+5+5+5= 30.

The Table therefore has aggregate scores ranging from 6 to 30.

Each median class score has a range of possible aggregate scores and hence a range of possible impairment scores (e.g. class 3 = 11-30% whole person impairment).

The Conversion Table distributes the impairment percentages across the possible range of aggregate scores.

B Same aggregate score in different classes

The Conversion Table shows that the same aggregate score leads to different impairment percentages for different median classes. For example, an aggregate score of 18 is equivalent to an impairment rating of

- 10% in class 2
- 22% in class 3 and
- 34% in class 4

This is because a claimant whose impairment is in median class 2 is likely to have a lower score across most areas of function. The claimant may be significantly impaired in one aspect of their life, such as travel, yet have low impairment in social function, self-care or concentration. In contrast, someone whose impairment reaches median class 4 will experience significant impairment across most aspects of his or her life.

Examples

Example A

List classes in ascending order

1	2	3	3	4	5
---	---	---	---	---	---

Aggregate score

1 +	2 +	3 +	3 +	4 +	5
-----	-----	-----	-----	-----	---

Median class value

3

Total %

=	18	22 % WPI
---	----	----------

Example B

List classes in ascending order

1	2	2	3	3	5
---	---	---	---	---	---

Aggregate score

1 +	2 +	2 +	3 +	3 +	5
-----	-----	-----	-----	-----	---

Median class value

3

Total %

=	16	17 % WPI
---	----	----------

Example C

List classes in ascending order

1	2	3	5	5	5
---	---	---	---	---	---

Aggregate score

1 +	2 +	3 +	5 +	5 +	5
-----	-----	-----	-----	-----	---

Median class value

4

Total %

=	21	44% WPI
---	----	---------

Figure 7.1 Psychiatric Impairment Rating Scale- Assessment Form

Psychiatric diagnoses	1.	2.
	3.	4.
Psychiatric treatment Description		

Category	Class	Reason for decision
Self-care and personal hygiene		
Social and recreational activities		
Travel		
Social functioning		
Concentration, persistence and pace		
Adaptation		

List classes in ascending order

--	--	--	--	--	--

Aggregate score

+	+	+	+	+	
---	---	---	---	---	--

Median Class Value

--

Total %

=		
---	--	--

Pre-existing impairment? If yes, determine % as above

List classes in ascending order

--	--	--	--	--	--

Aggregate score

+	+	+	+	+	
---	---	---	---	---	--

Median Class Value

--

Total %

=		
---	--	--

Final % whole person impairment _____

Chapter 8

Impairment of Other Body Systems

- 8.1 Permanent Impairment of other body systems is less common in the motor accident environment, but will occur. The following material provides commentary on the relevant sections of the AMA 4 Guides.

The Respiratory System

Introduction and approach to assessment

- 8.2 The system of respiratory impairment classification is straightforward and based on a combination of forced vital capacity (FVC), forced expiratory volume (FEV1) and diffusing capacity of carbon monoxide (DCO) or measurement of exercise capacity (VO₂max). Chapter 5 of the AMA 4 Guides (pp 153-167) should be infrequently used in assessing impairment following motor vehicle accidents. Healed sternal and rib fractures do not result in any assessable impairment unless they result in a permanent impairment of respiratory function.

Specific Interpretation of the AMA 4 Guides

- 8.3 The claimant needs to bring to the assessment the results of investigations that have determined the lung function parameters listed above. It is anticipated that some claimants will also have had their maximum oxygen consumption assessed.
- 8.4 Table 8 (p 162, AMA 4 Guides) provides the classification of respiratory impairment. A footnote to the Table reinforces that conditions other than respiratory disease may reduce maximum exercise capacity and assessors must carefully interpret the clinical presentation of the claimant.
- 8.5 The assessor should provide a specific percentage impairment for permanent impairment due to respiratory conditions. Table 8 (p 162, AMA 4 Guides) should be used to classify the claimant's impairment. Classes 2, 3 and 4 define a range of whole person impairment percentages. The assessor should provide a specific percentage impairment within the range for the class that best describes the clinical status of the claimant. Class 2 (10% to 25% whole person impairment) will need careful consideration.

The Cardiovascular System

Introduction and approach to assessment

8.6 Chapter 6 of the AMA 4 Guides (pp 169-199) provides a clear explanation of the methods required for the assessment of the cardiovascular system.

Specific Interpretation of the AMA 4 Guides

8.7 It is particularly important that the claimant being assessed attends with results of all diagnostic tests performed that provide information on the cardiovascular impairment to be assessed. The important data to be brought to the impairment evaluation will include (where possible):

- ECG (including an exercise ECG)
- Standard and trans-oesophageal echocardiogram
- Exercise Thallium scan, exercise echo scan
- Coronary angiograms
- Operative notes for coronary artery bypass grafts, coronary angioplasty or other surgery
- Holter monitoring results
- Electrodiagnostic studies
- Serum urea/electrolytes and urinalysis (particularly if hypertensive).

Diagnostic tests should not be ordered for the purpose of rating of impairment. This is in keeping with the approach taken elsewhere in these MAA Guidelines.

8.8 Functional Classification of Cardiovascular System Impairments. Table 2 (p 171, AMA 4 Guides) should be used as an option if the assessor is not sure into which category the claimant should be placed based on specific pathology (Refer to Tables 4-12, pp 172-195 of the AMA 4 Guides). Table 2 can be used as a "referee" or "umpire" if there is doubt about the level of impairment that is obtained using the other recommended Tables in this section.

8.9 Hypertensive Cardiovascular Disease (section 6.4, pp 185-188, AMA 4 Guides). This type of cardiovascular disease (Table 9, p 187, AMA 4 Guides) requires previous documentation of the hypertension (from medical records). If the injured person's illness is controlled with medication, then he/she might not be assessable under this Table. The assessor should review all relevant tests that have been done by the claimant's treating physician(s).

8.10 Vascular Diseases Affecting the Extremities (pp 196-198, AMA 4 Guides). Impairments due to upper or lower extremity peripheral vascular disease due to vascular trauma are better assessed using the Musculoskeletal Chapter of the AMA 4 Guides. This section should not be used.

8.11 Impairment scores from Table 13 Impairment of the Upper Extremity Due to Peripheral Vascular Disease (p 197, AMA 4 Guides) and Table 14 Impairment of the Lower Extremity Due to Peripheral Vascular Disease (p 198, AMA 4 Guides) must be converted to whole person impairments.

The Haematopoietic System

Introduction and approach to assessment

- 8.12 Chapter 7 of the AMA 4 Guides (pp 201-207) will be infrequently used in the motor accident context. The methods of impairment assessment suggested in the Chapter should be used.
- 8.13 Splenectomy is covered in this Chapter (p 205, AMA 4 Guides). **A claimant with post-traumatic splenectomy should be assessed as having 3% whole person impairment.**

The Visual System

Introduction and approach to assessment

- 8.14 The visual system should be assessed by an ophthalmologist. Chapter 8 of the AMA 4 Guides (pp 210-222) is adopted for the MAA Guidelines without significant change.
- 8.15 Impairment of vision should be measured with the injured person wearing their corrective spectacles or contact lenses, if it was normal for the injured person prior to the motor vehicle accident, or if the need for such spectacles has become necessary due to normal physiological changes to the refractive error either in distance or near vision. If, as a result of the injury, the injured person has been prescribed corrective spectacles and/or contact lenses for the first time, or different spectacles and/or contact lenses than those prescribed pre-injury, the difference should be accounted for in the assessment of permanent impairment.
- 8.16 As suggested elsewhere in the MAA Guidelines, the ophthalmologist should perform all tests necessary for the assessment himself/herself rather than relying on tests done by the orthoptist or optometrist.
- 8.17 Visual impairment should be assessed by an ophthalmologist. An exception is made for clear cut visual field impairments that can be assessed as part of the Nervous System Chapter.

The Digestive System

Introduction and approach to assessment

- 8.18 Assessments should be performed using the methods outlined in Chapter 10 of the AMA 4 Guides (pp 235-248).
- 8.19 Tables 2 to 7 in Chapter 10 of the AMA 4 Guides (pp 239-247) give details of the components to be assessed. Examples are given that assist by describing illustrative cases. Note that splenectomy is discussed in the Haematopoietic System Chapter.
- 8.20 Table 7 (p 247, AMA 4 Guides): In classes 1 and 2 the first criterion must be present, together with the second or third criterion. In class 3 all three criteria must be present.

The Urinary and Reproductive Systems

Introduction and approach to assessment

- 8.21 In general, Chapter 11 of the AMA 4 Guides (pp 249-262) provides clear methods for assessment of impairment in these systems.
- 8.22 For male and female sexual dysfunction, objective pathology should be present for an impairment percentage to be given.

The Endocrine System

Introduction and approach to assessment

- 8.23 Chapter 12 of the AMA 4 Guides (pp 263-275) will be used occasionally to assess impairment following motor vehicle accidents. Each endocrine organ or system is listed separately.
- 8.24 Where an impairment class defines a range of whole person impairment percentages the assessor should define a specific percentage impairment within the range described by the class that best describes the clinical status of the claimant.
- 8.25 Where injury has resulted in fat necrosis in the mammary glands this should be assessed using Chapter 13 (pp 278-289, AMA 4 Guides) The Skin.

Specific Interpretation of the AMA 4 Guides

- 8.26 Section 12.8 (p 275, AMA 4 Guides) with the title of Mammary Glands is superseded by the MAA Guidelines. **Total loss of one or both mammary glands is deemed to be an impairment of greater than 10% of the whole person.**

The Skin

Introduction and approach to assessment

- 8.27 Chapter 13 of the AMA 4 Guides (pp 278-289) refers to skin diseases generally. In the context of injury, sections 13.4 Disfigurement (p 279, AMA 4 Guides) and 13.5 Scars and Skin Grafts, are particularly relevant.
- 8.28 Disfigurement, scars and skin grafts may be assessed as causing significant permanent impairment when the skin condition causes limitation in performance of activities of daily living. Assessment should include a history that sets out any alterations in activities of daily living. The AMA 4 Guides (p 317) contains a Table of Activities of Daily Living.
- 8.29 A scar may be present and rated 0% whole person impairment.

Specific Interpretation of the AMA 4 Guides

- 8.30 Table 2 (p 280, AMA 4 Guides) provides the method of classification of impairment due to skin disorders. Three components, namely signs and symptoms of skin disorder, limitation of activities of daily living and requirements for treatment define five classes of impairment. The assessing physician should derive a specific percentage impairment within the range described by the class that best describes the clinical status of the claimant. All three criteria must be present. Impairment values are whole person impairment.
- 8.31 When using Table 2 (p 280, AMA 4 Guides) the assessor is reminded to consider the skin as an organ. The effect of scarring (whether single or multiple) is to be considered as the total effect of the scar(s) on the organ system as it relates to the criteria in Table 2.
- 8.32 Criteria for facial impairment are listed on page 229 of the AMA 4 Guides. Table 4 (p 230 AMA 4 Guides) provides whole person impairment scores for specific facial disfigurement.
- 8.33 For the purpose of assessing fat necrosis, Chapter 13 The Skin (pp 277-289), may be used by analogy, where appropriate.
- 8.34 The **Table for the Evaluation of Minor Skin Impairment (TEMSKI)** (Table 8.1) is an extension of Table 2 (p 280, AMA 4 Guides). The TEMSKI divides Class 1 into 5 categories of impairment. When an assessor determines a skin disorder falls into Class 1, the assessor must assess the skin disorder in accordance with the **TEMSKI** criteria.
- 8.35 The **TEMSKI** is to be used in accordance with the principle of 'best fit'. The assessor must be satisfied that the criteria within the chosen category of impairment best reflect the skin disorder being assessed. The skin disorder should meet most, but does not need to meet all, of the criteria within the impairment category in order to satisfy the principle of 'best fit'. The assessor must provide detailed reasons as to why this category has been chosen over other categories.
- 8.36 Where there is a range of values in the TEMSKI categories, the assessor should use clinical judgment to determine the exact impairment value.

Table 8.1 Table for the Evaluation of Minor Skin Impairment (TEMSKI)

Criteria	0% WPI	1% WPI	2% WPI	3 – 4% WPI	5 – 9% WPI
Description of the scar(s) and/or skin condition(s) (shape, texture, colour)	Claimant is not conscious or is barely conscious of the scar(s) or skin condition	Claimant is conscious of the scar(s) or skin condition	Claimant is conscious of the scar(s) or skin condition	Claimant is conscious of the scar(s) or skin condition	Claimant is conscious of the scar(s) or skin condition
	Good colour match with surrounding skin and the scar(s) or skin condition is barely distinguishable	Some parts of the scar(s) or skin condition colour contrast with the surrounding skin as a result of pigmentary or other changes	Noticeable colour contrast of scar(s) or skin condition with surrounding skin as a result of pigmentary or other changes	Easily identifiable colour contrast of scar(s) or skin condition with surrounding skin as a result of pigmentary or other changes	Distinct colour contrast of scar(s) of skin condition with surrounding skin as a result of pigmentary or other changes
	Claimant is unable to easily locate the scar(s) or skin condition	Claimant is able to locate the scar(s) or skin condition	Claimant is able to easily locate the scar(s) or skin condition	Claimant is able to easily locate the scar(s) or skin condition	Claimant is able to easily locate the scar(s) or skin condition
	No trophic changes	Minimal trophic changes	Trophic changes evident to touch	Trophic changes evident to touch	Trophic changes are visible
	Any staple marks or suture marks are barely visible	Any staple marks or suture marks are visible	Any staple marks or suture marks are clearly visible	Any staple marks or suture marks are clearly visible	Any staple marks or suture marks are clearly visible
Location	Anatomic location of the scar(s) or skin condition is not clearly visible with usual clothing/hairstyle	Anatomic location of the scar(s) or skin condition is not usually visible with usual clothing/hairstyle	Anatomic location of the scar(s) or skin condition is usually visible with usual clothing/hairstyle	Anatomic location of the scar(s) or skin condition is usually visible with usual clothing/hairstyle	Anatomic location of the scar(s) or skin condition is usually and clearly visible with usual clothing/hairstyle
Contour	No contour effect	Minor contour effect	Contour defect visible	Contour defect easily visible	Contour defect easily visible
ADL / Treatment	No effect on any ADL	Negligible effect on any ADL	Minor limitation in the performance of few ADL	Minor limitation in the performance of few ADL AND exposure to chemical or physical agents (for example, sunlight, heat, cold etc) may temporarily increase limitation	Limitation in the performance of few ADL (IN ADDITION TO restriction in grooming and dressing) AND exposure to chemical or physical agents (for example, sunlight, heat, cold etc) may temporarily increase limitation or restriction
	No treatment, or intermittent treatment only, required	No treatment, or intermittent treatment only, required	No treatment, or intermittent treatment only, required	No treatment, or intermittent treatment only, required	No treatment, or intermittent treatment only, required
Adherence to underlying structures	No adherence	No adherence	No adherence	Some adherence	Some adherence

This Table uses the principle of 'best fit'. You should assess the impairment to the whole skin system against each criteria and then determine which impairment category best fits (or describes) the impairment. A skin impairment will usually meet most, but does not need to meet all, criteria to 'best fit' a particular impairment category

Appendix 1

The first version of these Guidelines was developed for the NSW Motor Accidents Authority by a consortium comprising Dr Jim Stewart, Associate Professor Ian Cameron, Associate Professor Malcolm Sim and Professor Peter Disler. The bulk of the task was undertaken by seven clinical Reference Groups, whose members are listed below. Particular mention should be made of the extensive contributions of Dr Dwight Dowda, Professor Sydney Nade and Dr Julian Parmegiani.

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