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WORKERS' COMPENSATION AND INJURY MANAGEMENT ACT 1981

WORKCOVER WA GUIDES FOR THE EVALUATION OF PERMANENT IMPAIRMENT

Fourth Edition

December 2016

Foreword

The *WorkCover WA Guidelines for the Evaluation of Permanent Impairment* (the WorkCover WA Guidelines) are issued under section 146R of the *Workers' Compensation and Injury Management Act 1981* (the Act) for the purpose of evaluating the degree of permanent impairment that arises from an injury, as defined in section 5(1) of the Act.

The Act requires that medical practitioners designated by WorkCover WA as Approved Medical Specialists make assessments of permanent impairment in accordance with the WorkCover WA Guidelines.

The WorkCover WA Guidelines are based on template National Guidelines that were developed through a national process facilitated by Safe Work Australia. The National Guidelines are based on guidelines initially developed for use in the New South Wales workers' compensation system and incorporate numerous improvements identified by the WorkCover NSW Whole Person Impairment Coordinating Committee over its 13 years of continuous use. The many hours of dedication and thoughtful consideration that members of the WorkCover NSW Whole Person Impairment Coordinating Committee and South Australia Permanent Impairment Committee have given to the review and improvement of the guidelines is acknowledged and greatly appreciated (see Appendix 3).

The WorkCover WA Guidelines incorporate specific requirements applicable in the Western Australian scheme which have been reviewed by a medical advisory committee appointed under section 100A of the Act. WorkCover WA acknowledges the input of the committee on the development of the WorkCover WA Guidelines.

The methodology in the WorkCover WA Guidelines is largely based on the American Medical Association's *Guides to the Evaluation of Permanent Impairment*, Fifth Edition (AMA5). The AMA Guides are the most authoritative and widely used source for evaluating permanent impairment around the world. Extensive work by eminent Australian medical specialists representing Australian medical associations and Colleges has gone into reviewing AMA5 to ensure they are aligned with clinical practice in Australia.

The WorkCover WA Guidelines consist of an introductory chapter followed by a dedicated chapter for each body system.

The Introduction is divided into three parts. The first part outlines the background and development of the WorkCover WA Guidelines. The second part covers general assessment principles intended for the use of Approved Medical Specialists who are applying the WorkCover WA Guidelines in their evaluation of permanent impairment that results from an injury under the Act. The third part addresses administrative issues relating to the use of the WorkCover WA Guidelines.

When a person sustains a permanent impairment it is intended that the WorkCover WA Guidelines be used by Approved Medical Specialists to ensure an objective, fair and consistent method for evaluating the degree of impairment. It is therefore important that the protocols set out in the WorkCover WA Guidelines are applied consistently and methodically. Any difficulties or anomalies need to be addressed through modification of the publication and not by idiosyncratic reinterpretation of any part.

For further information, please contact WorkCover WA on (08) 9388 5555 or visit the WorkCover WA website at www.workcover.wa.gov.au.

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Disclaimer

This publication contains information regarding workers' compensation. It includes some of your obligations under the workers' compensation legislation that WorkCover WA administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

This publication may refer to WorkCover WA administered legislation that has been amended or repealed. When reading this publication you should always refer to the latest laws. Information on the latest laws can be checked at www.workcover.wa.gov.au or www.slp.wa.gov.au or by contacting (08) 9388 5555 or 1300 794 744 (WA country only).

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1. Introduction

PART 1 – INTENT AND LEGISLATIVE BASIS FOR THE WORKCOVER WA GUIDELINES

1.1 The WorkCover WA Guidelines for the Evaluation of Permanent Impairment, Fourth Edition (the WorkCover WA Guidelines) are made under section 146R of the Workers' Compensation and Injury Management Act 1981 (the Act) and are to be used to evaluate the degree of permanent impairment arising from an injury under Act.

The WorkCover WA Guidelines adopt the fifth edition of the American Medical Association's *Guides to the Evaluation of Permanent Impairment* (AMA5) in most cases. Where there is any deviation, the difference is defined in the WorkCover WA Guidelines and the procedures contained herein are to prevail if there is any inconsistency with AMA5.

Date of Effect

1.2 The WorkCover WA Guidelines replace the WorkCover WA Guides for the Evaluation of Permanent *Impairment, Third Edition*, which was issued in November 2010, and apply to assessments of permanent impairment conducted on or after 1 December 2016.

When conducting a permanent impairment assessment in accordance with the WorkCover WA Guidelines, Approved Medical Specialists (AMS) are required to use the version current at the time of the assessment.

Development of the Guidelines

1.3 The WorkCover WA Guidelines are based on the template National Guidelines developed through a national process facilitated by Safe Work Australia. The template National Guidelines is based on a similar set of guidelines that was developed and used extensively in the New South Wales' workers compensation system. Consequently provisions of the WorkCover WA Guidelines are the result of extensive and in-depth deliberations by groups of medical specialists convened to review AMA5 in the Australian workers' compensation context. The template National Guidelines has been adopted as the base document for use in multiple Australian jurisdictions.

1.4 There are variations to the template National Guidelines which reflect the different legislative and assessment processes that apply in the Western Australian scheme.

1.5 The WorkCover WA Guidelines will be reviewed if significant anomalies or insurmountable difficulties in their use become apparent.

PART 2 – PRINCIPLES OF ASSESSMENT

1.6 The WorkCover WA Guidelines are to be used wherever there is a need to establish the degree of permanent impairment that results from an injury under the Act. The WorkCover WA Guidelines are to be used for the following purposes:

(a) assessing whole person impairment (WPI) for the purpose of meeting the thresholds to enable a worker to elect to pursue damages at common law (Part IV Division 2 Subdivision 3 of the Act);

(b) determining the degree of impairment for a Schedule 2 lump sum payment (Part III Division 2A of the Act);

(c) establishing the degree of WPI which is required for workers seeking an entitlement for a specialised retraining program (Part IXA of the Act); and

(d) establishing the degree of WPI as part of the requirements for entitlement under clause 18A(2aa)(a) of Schedule 1 (exceptional circumstances) for a further additional sum for medical and other expenses.

1.7 AMS are expected to be familiar with Part VII Division 2 of the Act (assessing degree of impairment) and the impairment thresholds required for each of the purposes for which an impairment evaluation may be obtained. AMS must also be familiar with the timeframes in regulations for an AMS to arrange an assessment and to provide the documents that an AMS is required by section 146H to give the worker and employer.

1.8 An evaluation of permanent impairment does not determine the question of liability for a claim. In most cases, the question of liability for the primary condition would normally have been determined, however, an evaluation of impairment may be requested even though aspects of a worker's claim may be in dispute.

1.9 The following is a basic summary of some key principles of permanent impairment assessments:

(a) Assessing permanent impairment involves clinical assessment of the claimant as they present on the day of assessment taking account of the claimant's relevant medical history and all available relevant medical information in order to determine:

- whether the condition has reached Maximum Medical Improvement (MMI);
- whether the claimant's compensable injury/condition has resulted in an impairment;
- whether the resultant impairment is permanent;
- the degree of permanent impairment that results from the injury; and
- the proportion of permanent impairment due to any previous injury, pre-existing condition or abnormality, if any, in accordance with diagnostic and other objective criteria as outlined in the WorkCover WA Guidelines.

(b) AMS are required to exercise their clinical judgement in determining a diagnosis when assessing permanent impairment and when making deductions for pre-existing injuries/ conditions.

(c) In calculating the final level of impairment, the AMS needs to clarify the degree of impairment that results from the compensable injury/condition. Any deductions for pre-existing injuries/ conditions are to be clearly identified in the report and calculated. If, in an unusual situation, a related injury/condition has not previously been identified, an AMS should record the nature of any previously unidentified injury/condition in their report and specify the causal connection to the relevant compensable injury or medical condition.

1.10 AMS are expected to be familiar with Chapters 1 and 2 of AMA5 in addition to the information contained in this Introduction.

1.11 The degree of permanent impairment that results from the injury must be determined using the tables, graphs and methodology given in the WorkCover WA Guidelines and AMA5 where appropriate.

1.12 The WorkCover WA Guidelines may specify more than one method that AMS can use to establish the degree of a claimant's permanent impairment. In that case, AMS should use the method that yields the highest degree of permanent impairment (unless expressly provided for otherwise).

Body systems covered by the WorkCover WA Guidelines

1.13 AMA5 is used for most body systems, with the exception of psychiatric and psychological disorders, chronic pain, visual and hearing injuries.

1.14 AMA5 chapter on Mental and Behavioural Disorders (Chapter 14 AMA5) is omitted. The WorkCover WA Guidelines contain a substitute chapter on the assessment of psychiatric and psychological disorders (Chapter 11) which was written by a group of Australian psychiatrists.

1.15 AMA5 chapter on pain (Chapter 18 AMA5) is excluded entirely at the present time. Conditions associated with chronic pain should be assessed on the basis of the underlying diagnosed condition, and not on the basis of the chronic pain. Where pain is commonly associated with a condition, an allowance is made in the degree of impairment assigned in the WorkCover WA Guidelines. Complex regional pain syndrome is to be assessed in accordance with Chapter 17 of the WorkCover WA Guidelines.

1.16 On the advice of medical specialists (ophthalmologists), assessments of visual injuries are conducted according to American Medical Association *Guides to the Evaluation of Permanent Impairment*, 4th Edition (AMA4).

1.17 Occupational noise induced hearing loss is not evaluated by an AMS. Noise induced hearing loss is assessed and calculated in accordance with sections 24A and 31E and Schedule 7 of the Act. Chapter 9 of the WorkCover WA Guidelines provides for the evaluation of other types of hearing impairment, such as hearing loss caused by traumatic injury.

Maximum Medical Improvement

1.18 Assessments are only to be conducted when the AMS considers that the degree of permanent impairment of the claimant is unlikely to improve further and has attained MMI. This is considered to occur when the worker's condition is well stabilised and is unlikely to change substantially in the next year with or without medical treatment.

1.19 An evaluation of permanent impairment can only be undertaken if the worker has reached MMI, except if a special evaluation is required (see Special Evaluation below).

1.20 If the AMS considers that MMI has not been achieved, the AMS will be required to certify that a worker's condition has not stabilised to the extent required for an evaluation of permanent impairment and must indicate when they believe the worker's condition will stabilise.

Multiple impairments

1.21 Impairments arising from the same injury are to be assessed together. Impairments that result from more than one injury arising out of the same event are to be assessed together to calculate the degree of permanent impairment of the claimant.

1.22 In accordance with sections 93H(2), 158(2) and clause 18C(4) of Schedule 1 of the Act, "event" means anything that results, whether immediately or not and whether suddenly or not, in an injury or injuries of a worker and the term includes continuous or repeated exposure to conditions that results in an injury or injuries of a worker.

1.23 The Combined Values Chart (pp 604-606, AMA5) is used to derive a % WPI that arises from multiple impairments. An explanation of its use is found on pp 9-10 of AMA5. When combining more than two impairments, the AMS should commence with the highest impairment and combine with the next highest and so on.

1.24 In the case of a complex injury, where different AMS are required to assess different body systems, a 'lead assessor' should be nominated to coordinate and calculate the final degree of permanent impairment % WPI resulting from the individual assessments.

Example 1 – Multiple impairments

A worker suffers an injury to the back, neck and leg after falling from scaffolding. Each of the body areas affected in the fall would be assessed and the impairment values for each would be combined and converted to a WPI rating by reference to the Combined Values Chart in AMA5 (pp 604 -606).

1.25 If there is more than one "event" separate evaluations of the degree of impairment must be made for each event. This is because a separate event is likely to be a separate injury for the purposes of the Act.

Example 2 – Distinct injuries arising out of separate events

In June, a worker received a fracture to the ankle and calcaneal tuberosity in a fall from a height. Because of the mild degree of reduced ankle movements, the % WPI was assessed at 3%. Three months later, in a separate event, the worker tripped heavily and inverted the ankle, resulting in a further injury to the previously injured ankle. On clinical review, there was evidence of a moderate level of ankle ligamentous instability, which resulted in a WPI rating of 4%. The earlier appropriate clinical impairment assessments would need to be available to ensure that the AMS had clear evidence of what was the first injury and its WPI assessment to be able to clearly report on the second injury and its assessment.

1.26 In determining whether any injury or injuries arise out of a single event consideration needs to be given to whether there is continuous or repeated exposure to conditions from that event resulting in the injury. If it is established that the injuries arise out of a single event then each of the body areas affected would be assessed and the impairment values for each would be combined and converted to a WPI rating by reference to the Combined Values Chart in AMA5 (pp 604 -606).

1.27 Where it is not possible to determine whether an injury arises out of a single event then all impairments should be combined in the assessment.

1.28 In each case the basis for:

(a) determining whether separate evaluations should be undertaken where there is more than one event;

(b) combining impairments; or

(c) a finding that it is not possible to determine whether the impairments result from an injury or injuries arising out of a single event;

should be clearly explained in the AMS report.

Conditions which are not covered in the WorkCover WA Guidelines – equivalent or analogous conditions

1.29 AMA5 states: "Given the range, evolution and discovery of new medical conditions, the Guidelines cannot provide an impairment rating for all impairments ... In situations where impairment ratings are not provided, the Guidelines suggest that medical practitioners use clinical judgment, comparing measurable impairment resulting from the unlisted condition to measurable impairment resulting from similar conditions with similar impairment of function in performing activities of daily living. The assessor must stay within the body part/region when using analogy.

The assessor's judgment, based upon experience, training, skill, thoroughness in clinical evaluation, and ability to apply the Guidelines criteria as intended, will enable an appropriate and reproducible assessment to be made of clinical impairment."

Activities of Daily Living

1.30 Many tables in AMA5 (e.g. spine section) give class values for particular impairments, with a range of possible impairment values within each class. Commonly, the tables require the AMS to consider the impact of the injury/illness on activities of daily living in determining the precise impairment value. The activities of daily living which should be considered, if relevant, are listed in Table 1-2, p 4, of AMA5. The impact of the injury on activities of daily living is not considered in assessments of the upper or lower extremities.

1.31 The assessment of the impact of the injury on activities of daily living should be verified wherever possible by reference to objective assessments, for example, physiotherapist or occupational therapist functional assessments and other medical reports.

Rounding

1.32 Occasionally the methods of the WorkCover WA Guidelines will result in an impairment value which is not a whole number (e.g. an assessment of peripheral nerve impairment in the upper extremity). All such values must be rounded to the nearest whole number before moving from one degree of impairment to the next (e.g. from finger impairment to hand impairment, or from hand impairment to upper extremity impairment) or from a regional impairment to a whole person impairment. Figures should also be rounded before using the combination tables. This will ensure that the final whole person impairment will always be a whole number. The usual mathematical convention is followed where rounding occurs - values less than 0.5 are rounded down to the nearest whole number and values of 0.5 and above are rounded up to the next whole number.

Pre-existing diseases

1.33 In this section “disease”, includes any physical or mental ailment, disorder, defect, or morbid condition whether of sudden or gradual development (as defined in section 5 of the Act).

1.34 In accordance with section 146A(4) of the Act, for a case in which the evaluation of the degree of impairment of the worker involves taking into account a recurrence, aggravation, or acceleration of any pre-existing disease that was to any extent asymptomatic before the event from which the injury or injuries arose, there is not to be any deduction to reflect the pre-existing nature of that disease to the extent that it was asymptomatic before that event.

1.35 For any disease that was symptomatic before the event from which the injury or injuries arose there may be a “deductible proportion” in the degree of impairment. Where it is not possible to determine whether a deduction should apply then no deduction is to be made. In each case the basis for the judgement and deduction, if any, is to be clearly explained in the AMS report. In evaluating permanent impairment, an AMS may be required in accordance with the WorkCover WA Guidelines to make certain clinical judgements. Where it is not possible to determine whether a deduction should apply then no deduction is to be made.

Example 3 - No Deduction for pre-existing asymptomatic disease

A worker suffers an injury to the low back and when assessed for impairment results in a WPI assessment of 5%. Clinical assessment identifies evidence of pre-existing degenerative changes to the lumbar spine. But on critical questioning, the patient indicates that they did not suffer any previous symptoms in relation to the back. In this example, there would not be any deduction from the WPI assessment, even if it were possible to determine the proportion of impairment attributable to the pre- existing asymptomatic condition.

Example 4 - Deduction for pre-existing symptomatic disease

A worker obtains an evaluation of the degree of impairment from an AMS for an injury to the lumbar spine, which is assessed at 10%. A few months later the worker suffers another injury to the lumbar spine, which is affected by the previous injury. The WPI is assessed as 26%. In this case, the degree of WPI attributable to the current injury is determined by way of subtraction, i.e. 26% – 10% = 16%.

Adjustment for the effects of orthoses and prostheses

1.36 Assessments of permanent impairment are to be conducted without assistive devices, except where these cannot be removed. The AMS will need to make an estimate as to what is the degree of impairment, without such a device, if it cannot be removed for examination purposes. Further details may be obtained in the relevant chapters of the WorkCover WA Guidelines.

1.37 Impairment of vision should be measured with the claimant wearing their prescribed corrective spectacles and/or contact lenses, if this was usual for them before the injury. If, as a result of the injury, the claimant 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.

Adjustment for the effects of treatment

1.38 In circumstances where the treatment of a condition leads to a further, secondary impairment, other than a secondary psychological impairment, the AMS should use the appropriate parts of the WorkCover WA Guidelines to evaluate the effects of treatment, and use the Combined Values Chart (pp 604-606 AMA5) to arrive at a final percentage of WPI.

1.39 Where the effective long term treatment of an illness or injury results in apparent substantial or total elimination of the claimant's permanent impairment, but the claimant is likely to revert to the original degree of impairment if treatment is withdrawn, the AMS may increase the percentage of whole person impairment by 1, 2 or 3% WPI. This percentage should be combined with any other impairment percentage, using the Combined Values Chart. This paragraph does not apply to the use of analgesics or anti-inflammatory medication for pain relief.

1.40 Where a claimant has declined treatment which the AMS believes would be beneficial, the impairment rating should be neither increased nor decreased – see paragraph 1.41 for further details.

Refusal of treatment

1.41 If the claimant has been offered, but has refused, additional or alternative medical treatment that the AMS considers is likely to improve the claimant's condition, the AMS should evaluate the current condition, without consideration of potential changes associated with the proposed treatment. The AMS may note the potential for improvement in the claimant's condition in the evaluation report, and the reasons for refusal by the claimant, but should not adjust the level of impairment on the basis of the claimant's decision.

Future deterioration of a condition

1.42 Similarly, if an AMS forms the opinion that the claimant's condition is stable for the next year, but that it may deteriorate in the long term, the AMS should make no allowance for this deterioration.

Inconsistent presentation

1.43 AMA5 states: "Consistency tests are designed to ensure reproducibility and greater accuracy. These measurements, such as one that checks the individual's range of motion are good but imperfect indicators of people's efforts. The AMS must use their entire range of clinical skill and judgment when assessing whether or not the measurements or test results are plausible and consistent with the impairment being evaluated. If, in spite of an observation or test result, the medical evidence appears insufficient to verify that an impairment of a certain magnitude exists, the AMS may modify the impairment rating accordingly and then describe and explain the reason for the modification in writing." (p 19). This paragraph applies to inconsistent presentation only.

Ordering of additional investigations

1.44 As a general principle, the AMS should not order additional radiographic or other investigations purely for the purpose of conducting an assessment of permanent impairment.

1.45 However, if the investigations previously undertaken are not as required by the WorkCover WA Guidelines or are inadequate for a proper assessment to be made, the AMS should consider the value of proceeding with the evaluation of permanent impairment without adequate investigations.

1.46 In circumstances where the AMS considers that further investigation is essential for a comprehensive evaluation to be undertaken and deferral of the evaluation would considerably inconvenience the claimant (e.g. when the claimant has travelled from a country region specifically for the assessment), the AMS may proceed to order the appropriate investigations provided that there is no undue risk to the claimant.

1.47 The person requesting the assessment from the AMS will be required to bear the cost of any further investigation unless the assessment is for the purposes of section 93M of the Act (where the worker elects to retain their right to seek common law damages), in which case the cost of the assessment, including an assessment that resulted in a finding that the worker's condition has not stabilised (to the extent required for a normal evaluation), is paid out of the workers entitlement under clause 17(1aa) of Schedule 1 of the Act.

Secondary conditions

1.48 Any secondary psychological, psychiatric or sexual condition is to be disregarded when evaluating the degree of permanent impairment of a worker for the purposes of:

(a) common law (section 146C(6));

(b) access to a specialised retraining program (section 146D(3); and

(c) further additional sum, medical and related expenses (section 146E(3)).

1.49 In accordance with section 146 of the Act, a secondary condition means a condition, whether psychological, psychiatric, or sexual, that, although it may result from the injury or injuries concerned, arises as a secondary, or less direct, consequence of that injury or injuries.

1.50 Permanent impairment assessments for psychological, psychiatric or sexual conditions are only required where the condition is a primary result of the injury (i.e. does not arise as a secondary, or less direct, consequence of that injury). The following examples provide guidance on assessing secondary conditions:

Example 5 – Exclusion of secondary psychological condition

A worker suffers an injury to the shoulder and neck in a work-related accident. Several months later the worker develops depression associated with the inability to perform normal work. In this case the psychological condition would not be taken into account in the evaluation of impairment.

Example 6 – Exclusion of secondary sexual condition

A worker suffers a shoulder injury and has some limitation of movement, and subsequently experiences loss of libido. In this example there is no direct impact upon the sexual organs and the loss of libido should not be taken into account in the evaluation of impairment.

1.51 The evaluation will not preclude psychological, psychiatric and sexual conditions where these conditions are a direct consequence of an injury, an example of which would be psychiatric condition experienced by a bank teller as a result of a hold up.

Example 7 – Inclusion of psychological condition

An armed robbery at a bank results in a leg injury to a worker and a psychological condition that is a direct result of the trauma associated with the event. In this case the conditions – the injury to the leg, and the psychological condition - would both contribute to the evaluation of impairment, as each is a direct result of the injury.

Example 8 – Inclusion of sexual condition (loss of genitals)

A workplace injury caused by farm machinery results in the loss of the primary sex organs. In this case the sexual condition would contribute to the evaluation of impairment.

Example 9 – Inclusion of sexual condition (impotence as a result of spinal injury)

A worker is assessed as impotent as a result of a work-related spinal injury. An AMS, in accordance with the WorkCover WA Guidelines, finds objective evidence of spinal cord, cauda equina or bilateral nerve root dysfunction. Accordingly, the impairment rating for impotence will contribute to the worker's degree of impairment.

N.B – Impotence 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. The ratings described in AMA5 Table 13–21 (p 342) are used in this instance. There is no additional impairment rating system for impotence in the absence of objective clinical findings (refer Chapter 4 of the WorkCover WA Guidelines).

In terms of assessment of sexual functioning (AMA5 Chapter 7, pp 143 -171): Impotence is assessed as an impairment only if there is an associated neurological impairment (see Chapter 5 of the WorkCover WA Guidelines).

1.52 The basis for determining that a psychological, psychiatric or sexual condition arises as a secondary, or less direct, consequence of the injury or injuries (and should not be included in the assessment of impairment), or the basis for determining that the psychological, psychiatric or sexual condition is a direct consequence of the injury or injuries (and should be included in the assessment of impairment) should be explained in the report.

Assessment for Schedule 2 purposes

1.53 Appendix 2 of the WorkCover WA Guidelines contains specific directions regarding the assessment of impairment for Schedule 2 of the Act.

Special evaluation

1.54 It is a general principle that an assessment of permanent impairment only be done when a worker's condition has stabilised (i.e. has reached MMI).

1.55 However, in limited circumstances a special evaluation can be done for workers requesting an assessment of impairment in order to make an election by the termination day to pursue common law damages (section 93N), or for the further additional sum for medical and other expenses under clause 18A(2aa)(a) of Schedule 1 of the Act.

1.56 A special evaluation allows for an evaluation to be done even if the condition has not stabilised and overrides anything in AMA5 or the WorkCover WA Guidelines that requires the condition to be stable or to have reached MMI. These limited circumstances are outlined below.

Common law

1.57 In accordance with section 93N of the Act a special evaluation can be done if the following conditions are met:

(a) the worker has already obtained an extension to the termination day on the basis that his or her condition has not stabilised (in accordance with section 93M(4)(a)(i) of the Act); and

(b) the certificate is given after the expiry of the period of 6 months after the day that would have been the termination day had there been no extension under section 93M(4) of the Act.

1.58 This can be verified by checking the date of the termination day against the date of the extension approved by the Director, Conciliation.

Clause 18A (2aa)(a): further additional sum for medical and related expenses (exceptional circumstances)

1.59 A special evaluation must also be done if a worker is applying for a further additional sum for medical and other expenses under clause 18A(2aa)(a) of Schedule 1 of the Act, based on exceptional circumstances. An evaluation will be necessary for this purpose as one of the eligibility criteria is that the worker has at least 15% WPI. In these circumstances an AMS is to assess the degree of impairment as if the worker's condition has reached MMI.

Special provisions relating to AIDS and specified industrial diseases

AIDS

1.60 A worker who has contracted AIDS in the course of employment is deemed to have 100% impairment under Item 82 of Part 2 of Schedule 2 of the Act. If the worker is obtaining an assessment for common law, the worker will be deemed to have at least 25% WPI under section 93Q(3) of the Act for the purposes of making an election to seek damages at common law. An AMS is not required to assess a worker's degree of impairment, however the worker will require certification from a medical practitioner to the effect that the worker has contracted AIDS.

1.61 The regulations may make provision for methods of deciding whether a worker has contracted AIDS. In the absence of regulations the method of deciding whether a worker has contracted AIDS is based on the advice of the medical practitioner who provides certification to the worker.

Specified Industrial Diseases

1.62 If common law damages are being sought in respect of a disease referred to in section 33 or 34 of the Act, any assessment to evaluate the worker's degree of permanent WPI resulting from the disease is to be made, not by an AMS but by a medical panel constituted under section 36 of the Act (referral is made to the Industrial Diseases Medical Panel).

1.63 Even though the worker's condition is not required to have stabilised, the evaluation is not a special evaluation as referred to in section 146C of the Act and the WorkCover WA Guidelines.

1.64 The panel assessing the worker is expected to be familiar with section 93R and Part III Division 3 of the Act, and Chapter 8 of the WorkCover WA Guidelines.

PART 3 – ADMINISTRATIVE PROCESS

Referrals by Approved Medical Specialists

1.65 AMS must be trained in the use of the WorkCover WA Guidelines and satisfy criteria for designation as an AMS. However, for certain body systems identified in the WorkCover WA Guidelines, it will be necessary for the AMS to require a worker to submit to examination by another medical practitioner or specialist or dentist for specific tests or assessment (e.g. an ophthalmologist for visual impairments, a psychiatrist for psychological and psychiatric disorders, or an otorhinolaryngologist for hearing impairments).

1.66 If it is necessary for the AMS to require a worker to submit to examination by another medical practitioner or specialist for specific tests or assessment, it is preferable if the referral is made to another AMS.

1.67 Where the referral is made to a person who is not an AMS, the AMS is responsible for ensuring the tests or assessments are made in accordance with the WorkCover WA Guidelines and will still be required by section 146H of the Act to issue a report and certificate of the worker's degree of impairment (also see sections in this chapter on 'information required for assessments' and 'ordering additional investigations').

Information required for assessments

1.68 Under section 146A(3) of the Act a request for assessment by an AMS is to be made in accordance with the regulations. All parties are expected to be familiar with this requirement.

1.69 In accordance with the requirements in section 146G(1) of the Act, on being requested to assess a worker's degree of impairment, an AMS may:

(a) in accordance with the regulations, require a worker to attend at a place specified by the AMS;

(b) require a worker to answer any question about the injury;

(c) in accordance with the regulations, require a worker, an employer, or an employer's insurer to:

- produce to the AMS any relevant document or information; or
- consent to another person who has any relevant document or information producing it to the AMS; and

(d) require a worker to submit to examination by, or as requested by, the AMS.

1.70 A person who contravenes one of the above requirements commits an offence and is liable to a fine of $2,000 under the Act.

1.71 The AMS should be provided with all relevant medical and allied health information, including results of all investigations related to the condition that is being assessed.

1.72 Regulations require a worker who requests an assessment of the worker's degree of impairment to produce any information described in the regulations for use in dealing with the request.

1.73 AMA5 and the WorkCover WA Guidelines also indicate the information and investigations that are required to arrive at a diagnosis and to measure permanent impairment. The AMS must apply the approach outlined in the WorkCover WA Guidelines. AMS must consult these documents to gain an understanding of the information that should be provided to the AMS in order to conduct a comprehensive evaluation.

1.74 If an AMS has been requested to assess a worker's degree of impairment, WorkCover WA, with the consent of the worker, may disclose to the AMS any information that it has that may be relevant to the assessment (section 146I of the Act).

AMS reports & certificates

1.75 The AMS is expected to be familiar with the requirements in section 146H of the Act and associated regulations in relation to the provision of reports and certificates of the worker's degree of impairment, and timeframes associated with provision of these documents.

1.76 AMS reports and certificates, required under the Act to be given to the worker and employer, will be used in determining the outcome of a worker's claim for certain statutory benefits and ability to pursue damages at common law. The report and certificate become legal documents and, where an assessment is made to enable a worker to elect to pursue damages at common law, will be used as evidence in court.

1.77 A certificate for the purposes of:

(a) Part III Division 2A of the Act (Schedule 2);

(b) Part IV Division 2 Subdivision 3 of the Act (common law);

(c) Part IXA of the Act (specialised retraining program); or

(d) clause 18A(2aa)(a) of Schedule 1 of the Act (further additional sum, medical and related expenses);

is to specify the provisions for the purpose(s) for which it is made.

1.78 A report of the evaluation of permanent impairment must be accurate, comprehensive and fair. It should clearly address the question being asked of the AMS.

1.79 The minimum administrative information for reports and certificates is prescribed in regulations.

1.80 WorkCover WA has developed administrative forms for the impairment assessment processes, including templates and sample reports and certificates, which can be downloaded from the WorkCover WA web site at www.workcover.wa.gov.au.

1.81 In addition to the information required by the regulations, a report produced by an AMS evaluating a worker's degree of impairment is to contain, as a minimum:

(a) reports and documents considered;

(b) a narrative history (as provided by the worker on history of injury, occupational history, past medical history);

(c) results of clinical examination;

(d) any diagnostic studies performed;

(e) the diagnosis and identification of impairments arising as a result of the injury;

(f) identification of any pre-existing impairments that were symptomatic;

(g) the impairment rating and rationale utilising the methodology and content of the WorkCover WA Guidelines; and

(h) summary of impairment/s as a consequence of the assessment.

1.82 AMS are strongly advised to refer to the "Medical Board of Western Australia Board Policies - Medico-Legal and other Independent Medical Examinations". However, if there is any inconsistency between that publication and the Act, regulations or the WorkCover WA Guidelines, then the Act, regulations or the WorkCover WA Guidelines are to prevail.

Code of conduct

1.83 AMS are reminded that they have a duty to act in an ethical, professional and considerate manner when assessing (i.e. taking history and examining) workers for the purpose of assessing the degree of permanent impairment.

1.84 Effective communication is vital to ensure that a worker is well-informed and able to maximally cooperate in the process. AMS must:

(a) ensure that the worker understands who the AMS is and his/her role in the evaluation;

(b) ensure that the worker understands how the evaluation will proceed;

(c) take reasonable steps to preserve the privacy and modesty of the worker during the evaluation; and

(d) not provide any opinion to the worker about their claim.

1.85 Complaints regarding an impairment assessment will be managed by WorkCover WA.

Disputes over assessed degree of permanent impairment

1.86 If the assessment methodology as outlined in the WorkCover WA Guidelines is applied consistently, disputes should be minimised.

1.87 If a worker and employer cannot agree on the level of impairment for the purposes of:

(a) Part III Division 2A (Schedule 2) of the Act;

(b) Part IXA (specialised retraining program) of the Act; or

(c) clause 18A(2aa)(a) of Schedule 1 of the Act (further additional sum, medical and related expenses);

a worker may apply to have the question determined by an arbitrator.

1.88 An arbitrator may determine the worker's degree of permanent impairment, or refer the question for assessment to an AMS panel. A determination by an AMS panel is final and binding on any court or tribunal but only in relation to the purpose for which the question was referred.

1.89 Where a question is referred to an AMS panel, a worker's degree of impairment is to be assessed in accordance with section 146A, and section 146B, 146D or 146E of the Act, as the case requires. AMS panel members are expected to be familiar with Part VII Division 3 of the Act dealing with AMS panel assessments.

1.90 For common law purposes (Part IV, Division 2, Subdivision 3 of the Act), an employer may not dispute a worker's impairment assessment until the matter is dealt with in the District Court. These disputes are determined in the District Court not by an AMS panel.

2. Upper extremity

Chapter 16, AMA5 (page 433) applies to the assessment of permanent impairment of the upper extremities, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

2.1 The upper extremities are discussed in AMA5, Chapter 16 (pp 433-521). This chapter provides guidelines on methods of assessing permanent impairment involving these structures. It is a complex chapter that requires an organised approach with careful documentation of findings.

2.2 Evaluation of anatomical impairment forms the basis for upper extremity impairment assessment. The ratings reflect the degree of impairment and its impact on the ability of the person to perform activities of daily living. There can be clinical conditions where evaluation of impairment may be difficult. Such conditions are evaluated by their effect on function of the upper extremity, or, if all else fails, by analogy with other impairments that have similar effects on upper limb function.

The approach to assessment of the upper extremity and hand

2.3 Assessment of the upper extremity mainly involves clinical evaluation. Cosmetic and functional evaluations are performed in some situations. The impairment must be permanent and stable. The worker will have a defined diagnosis that can be confirmed by examination.

2.4 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% WPI, the value for amputation through the shoulder.

2.5 Range of motion (ROM) is assessed as follows:

- A goniometer or inclinometer must be used where clinically indicated.
- Passive ROM may form part of the clinical examination to ascertain clinical status of the joint, but impairment should only be calculated using active ROM measurements. Impairment values for degree measurements falling between those listed must be adjusted or interpolated.
- If the AMS is not satisfied that the results of a measurement are reliable, repeated testing may be helpful in this situation.
- If there is inconsistency in ROM then it should not be used as a valid parameter of impairment evaluation. Refer to paragraph 1.43 of the WorkCover WA Guidelines.
- If ROM measurements at examination cannot be used as a valid parameter of impairment evaluation, the AMS should then use discretion in considering what weight to give other available evidence to determine if an impairment is present.

2.6 To achieve an accurate and comprehensive assessment of the upper extremity, findings should be documented on a standard form. AMA5 figures 16-1a and 16-1b (pp 436-437) are extremely useful both to document findings and to guide the assessment process.

2.7 The hand and upper extremity are divided into regions: thumb, fingers, wrist, elbow, and shoulder. Close attention needs to be paid to the instructions in figures 16-1a and 16-1b (pp 436-437 AMA5) regarding adding or combining impairments.

2.8 Table 16-3 (p 439 AMA5) is used to convert upper extremity impairment to WPI. When the combined values chart is used, the AMS must ensure that all values combined are in the same category of impairment (that is WPI, upper extremity impairment percentage, hand impairment percentage and so on). Regional impairments of the same limb (e.g. several upper extremity impairments), should be combined before converting to percentage WPI. (Note that impairments relating to the joints of the thumb are added rather than combined – see AMA5, p 454, 16.4d thumb ray motion impairment.)

Specific Interpretation of AMA5 – The Hand and Upper Extremity

Impairment of the upper extremity due to peripheral nerve disorders

2.9 If an upper extremity impairment results solely from a peripheral nerve injury, the AMS should not also evaluate impairment(s) from 16.2, amputations (pp 441-445 AMA5), 16.3, sensory impairment due to digital nerve lesions (pp 445-450 AMA5) or Section 16.4, abnormal motion (pp 450-479 AMA5) for that upper extremity. Section 16.5 should be used for evaluation of such impairments.

For peripheral nerve lesions use Table 16-15 (p 492 AMA5) together with tables 16-10 and 16-11 (pp 482 and 484 AMA5) for evaluation.

The assessment of carpal tunnel syndrome post-operatively is undertaken in the same way as assessment without operation.

2.10 When applying tables 16-10 and 16-11 (pp 482 and 484 AMA5) the AMS must use clinical judgement to estimate the appropriate percentage within the range of values shown for each severity grade. The maximum value is not applied automatically.

Impairment due to other disorders of the upper extremity

2.11 The section 'Impairment of the upper extremity due to other disorders' (AMA5 Section 16.7 pp 498-507) should be used only when other criteria (as presented in sections 16.2 -16.6 (pp 441-498 AMA5)) have not adequately encompassed the extent of the impairments. Impairments from the disorders considered in Section 16.7 are usually estimated using other criteria. The AMS must take care to avoid duplication of impairments.

2.12 In Section 16.7 (impairment of the upper extremities due to other disorders) AMA5 notes 'the severity of impairment due to these disorders is rated separately according to Table 16-19 through 16-30 and then multiplied by the relative maximum value of the unit involved as specified in Table 16-18'. This statement should not include tables 16-25 (carpal instability), 16-26 (shoulder instability) and 16-27 (arthroplasty), noting that these tables are already expressed in terms of upper extremity impairment.

2.13 Strength evaluation, as a method of upper extremity impairment assessment, should only be used in rare cases and its use justified when loss of strength represents an impairing factor not adequately considered by more objective rating methods. If chosen as a method, the caveats detailed on AMA5 p 508, under the heading '16.8a Principles' need to be observed, i.e. decreased strength cannot be rated in the presence of decreased motion, painful conditions, deformities and absence of parts (e.g. thumb amputation).

Conditions affecting the shoulder region

2.14 Most shoulder disorders with an abnormal range of movement are assessed according to AMA5 Section 16.4 - Evaluating Abnormal Motion. (Please note that AMA5 indicates that internal and external rotation of the shoulder are to be measured with the arm abducted in the coronal plane to 90 degrees and with the elbow flexed to 90 degrees. In those situations where abduction to 90 degrees is not possible, symmetrical measurement of rotation is to be carried out at the point of maximal abduction).

Rare cases of rotator cuff injury, where the loss of shoulder motion does not reflect the severity of the tear, and there is **no associated pain**, may be assessed according to AMA5 Section 16.8c – strength evaluation. Other specific shoulder disorders, where the loss of shoulder motion does not reflect the severity of the disorder, **associated with pain**, should be assessed by comparison with other impairments that have similar effect(s) on upper limb function.

As noted in AMA5 16.7b 'Arthroplasty', "In the presence of *decreased motion,* motion impairments are derived separately and *combined* with the arthroplasty impairment". This includes those arthroplasties in Table 16-27 designated as "(isolated)".

The following impairments in AMA5 are modified by the WorkCover WA Guidelines:

- In Table 16-27 (p 506 AMA5):
  - the figure for resection arthroplasty of the distal clavicle (isolated) is modified to be 5% upper extremity impairment;
  - the figure for resection arthroplasty of the proximal clavicle (isolated) is modified to be 8% upper extremity impairment.
- In Table 16-18 (p 499 AMA5) the figures for sternoclavicular joint are modified to be 25% upper extremity impairment and 15% whole person impairment.

2.15 Ruptured long head of biceps shall be assessed as an upper extremity impairment (UEI) of 3% UEI or 2% WPI where it exists in isolation from other rotator cuff pathology. Impairment for ruptured long head of biceps cannot be combined with any other rotator cuff impairment or with loss of range of movement.

2.16 Diagnosis of impingement is made on the basis of positive findings on appropriate provocative testing and is only to apply where there is no loss of range of motion. Symptoms must have been present for at least 12 months. An impairment rating of 3% UEI or 2% WPI shall apply.

Fractures involving joints

2.17 Displaced fractures involving joint surfaces are generally to be rated by range of motion. If, however, this loss of range is not sufficient to give an impairment rating, and movement is accompanied by pain and there is 2mm or more of displacement, allow 2% UEI (1% WPI).

Epicondylitis of the elbow

2.18 This condition is rated as 2% UEI (1% WPI). In order to assess impairment in cases of epicondylitis, symptoms must have been present for at least 18 months. Localised tenderness at the epicondyle must be present and provocative tests must also be positive. If there is an associated loss of range of movement, these figures are not combined, but the method giving the highest rating is used.

Resurfacing procedures

2.19 No additional impairment is to be awarded for resurfacing procedures used in the treatment of localised cartilage lesions and defects in major joints.

Calculating motion impairment

2.20 When calculating impairment for loss of range of movement, it is important to always compare measurements of the relevant joint(s) in both extremities. If a contralateral 'normal/uninjured' joint has less than average mobility, the impairment value(s) corresponding to the uninvolved joint serves as a baseline and is subtracted from the calculated impairment for the involved joint. The rationale for this decision should be explained in the report (AMA5, p 543, 16.4c).

Complex regional pain syndrome (upper extremity)

2.21 Complex regional pain syndrome types 1 and 2 should be assessed using the method in Chapter 17 of the WorkCover WA Guidelines.

2.22 For chronic pain assessment using AMA5 and the WorkCover WA Guidelines, Chapter 18 of AMA5 Pain (p 565-591) is excluded. Section 13.8 of AMA5 (p 343-344) is also excluded.

3. Lower extremity

Chapter 17, AMA5 (page 523) applies to the assessment of permanent impairment of the lower extremities, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

3.1 The lower extremities are discussed in AMA5 Chapter 17 (pp 523-564). This section is complex and provides a number of alternative methods of assessing permanent impairment involving the lower extremity. An organised approach is essential.

The approach to assessment of the lower extremity

3.2 Assessment of the lower extremity involves physical evaluation, which can use a variety of methods. In general, the method should be used that most specifically addresses the impairment present. 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 AMA5 sections 17.2b to 17.2n (pp 528–554). AMA5 Table 17-2 (p 526) indicates which evaluation methods can be **combined** and which cannot. It may be possible to perform several different evaluations, as long as they are reproducible and meet the conditions specified below and in AMA5. The most specific method of impairment assessment should be used. (Please note that in Table 17-2 the box at the intersection of the fourth row (on muscle strength) and seventh column (on amputation) should be a closed box ☒ rather than an open box ☐).

3.4 It is possible to use an algorithm to aid in the assessment of lower extremity impairment. Use of a worksheet is essential. Table 3.5 at the end of this chapter of the WorkCover WA Guidelines is such a worksheet and may be used in assessment of permanent impairment of the lower extremity.

3.5 In the assessment process, the evaluation giving the highest impairment rating is selected. That may be a combined impairment in some cases, in accordance with the Guide to the appropriate combination of evaluation methods table (Table 17-2, p 526 AMA5), using the combined values chart (pp 604-606 AMA5).

3.6 When the combined values chart is used, the AMS must ensure that all values combined are in the same category of impairment rating (i.e. percentage of WPI, lower extremity impairment percentage, foot impairment percentage, and so on). Regional impairments of the same limb (e.g. several lower extremity impairments) should be combined before converting to percentage WPI.

3.7 Table 17-2 (p 526 AMA5) needs to be referred to frequently to determine which impairments can be combined and which cannot. The assessed impairment of a part or region can never exceed the impairment due to amputation of that part or region. For the lower limb, therefore, the maximum evaluation is 40% WPI, the value for proximal above knee amputation.

Specific interpretation of AMA5 — the lower extremity

Leg length discrepancy

3.8 When true leg length discrepancy is determined clinically (AMA5 Section 17.2b, p 528), the method used must be indicated (e.g. tape measure from anterior superior iliac spine to the medial malleolus). Clinical assessment of leg length discrepancy is an acceptable method but if full length computerised tomography films are available they should be used in preference. Such an examination should not be ordered solely for determining leg lengths.

3.9 When applying Table 17–4 (p 528, AMA5), the element of choice is removed and impairments for leg length discrepancy should be read as the higher figure of the range quoted.

Note that the figures for lower limb impairment in Table 17-4 (p 528, AMA5) are incorrect and the correct figures are shown below.

AMA5 Table 17-4 Impairment Due to Limb Length Discrepancy

Discrepancy (cm)	Whole person (Lower Extremity) impairment (%)
0- 1.9	0
2- 2.9	3 (8)
3- 3.9	5 (13)
4- 4.9	7 (18)
5+	8 (19)

Gait derangement

3.10 Assessment of gait derangement is only to be used as a method of last resort. Methods of impairment assessment most fitting the nature of the disorder should always be used in preference. If gait derangement (AMA5 Section 17.2c, p 529) is used, it cannot be combined with any other evaluation in the lower extremity section of AMA5.

3.11 Any walking aid used by the subject must be a permanent requirement and not temporary.

3.12 In the application of Table 17-5 (p 529 AMA5), delete item b, as the Trendelenburg sign is not sufficiently reliable.

Muscle atrophy (unilateral)

3.13 This section (AMA5 Section 17.2d, p 530) is not applicable if the limb other than that being assessed is abnormal (e.g. if varicose veins cause swelling, or if there is another injury or condition which has contributed to the disparity in size).

3.14 In the use of Table 17-6 (p 530 AMA5) the element of choice has been removed in the impairment rating and only the higher figure used.

Note that the figures for lower limb impairment in Table 17-6 (p 530 AMA5) are incorrect and the correct figures are shown below.

AMA5 Table 17-6 Impairment Due to Unilateral Leg Muscle Atrophy

Difference in circumference (cm)	Impairment degree	Whole person (Lower Extremity) impairment (%)
a. Thigh: The circumference is measured 10cm above the patella with the knee fully extended and the muscles relaxed.		
0 – 0.9	None	0 (0)
1 – 1.9	Mild	2 (6)
2 – 2.9	Moderate	4 (11)
3+	Severe	5 (12)

Difference in circumference (cm)	Impairment degree	Whole person (Lower Extremity) impairment (%)
b. Calf: The maximum circumference on the normal side is compared with the circumference at the same level on the affected side.		
0 – 0.9	None	0 (0)
1 – 1.9	Mild	2 (6)
2 – 2.9	Moderate	4 (11)
3+	Severe	5 (12)

Manual muscle strength testing

3.15 The Medical Research Council (MRC) gradings for muscle strength are universally accepted. They are not linear in their application, but ordinal. Only the six grades (0-5) should be used, as they are reproducible among experienced assessors. The descriptions in Table 17-7 (p 531 AMA5) are correct. The results of electro diagnostic methods and tests are not to be considered in the evaluation of muscle testing which can be performed manually. Table 17-8 (p 532 AMA5) is to be used for this method of evaluation.

Range of motion

3.16 Although range of motion (AMA5 Section 17.2f, pp 533-538) appears to be a suitable method for evaluating impairment, it may be subject to variation because of pain during motion at different times of examination, possible lack of cooperation by the person being assessed and inconsistency. If there is such inconsistency then ROM cannot be used as a valid parameter of impairment evaluation. In Table 17-10 (knee impairment) (p 537 AMA5) the sentence should read 'Deformity measured by femoral-tibial angle; 3° to 9° valgus is considered normal.

Table 17-10 (p 537 AMA5) is misleading as it has valgus and varus deformity in the same table as restriction of movement, possibly suggesting that these impairments may be combined. This is not the case. Any valgus/ varus deformity present which is due to the underlying lateral or medial compartment arthritis, cannot be combined with loss of range of movement. Therefore, when faced with an assessment in which there is a rateable loss of range of movement as well as a rateable deformity, calculate both impairments and use the greater. Valgus and varus knee angulation are to be measured in a weight-bearing position using a goniometer. It is important to bear in mind that valgus and/or varus alignments of the knee may be constitutional. It is also important to always compare with the opposite knee.

3.17 If range of motion is used as an assessment measure, then tables 17-9 to 17-14 (p 537 AMA5) are selected for the joint or joints being tested. If a joint has more than one plane of motion, the impairment assessments for the different planes should be added. For example, any impairments of the six principal directions of motion of the hip joint are added (p 533 AMA5).

Please note that in Table 17-11 (ankle motion) (p 537 AMA5) the range for mild flexion contracture should be one to 10 degrees, for moderate flexion contracture should be 11 to 19 degrees, and the figure for severe flexion contracture should be 20 degrees plus.

The revised Table 17-11 is as follows:

AMA5 Table 17-11: Ankle motion impairment estimates

Whole person (lower extremity) [foot impairment]			
Motion	**Mild** 3% (7%) [10%]	**Moderate** 6% (15%) [21%]	**Severe** 12% (30%) [43%]
Plantar flexion capability	11° – 20°	1° - 10°	None
Flexion contracture	1° - 10°	11° - 19°	20°+
Extension	10°- 0° (neutral)	-	-

When calculating impairment for loss of range of movement, it is most important to always compare measurements of the relevant joint(s) in both extremities. If a contralateral 'normal/uninjured'joint has less than average mobility, the impairment value(s) corresponding to the uninvolved joint serves as a baseline and is subtracted from the calculated impairment for the involved joint. The rationale for this decision should be explained in the report (AMA5, p 454, 16.4c).

Ankylosis

3.18 Ankylosis is to be regarded as the equivalent to arthrodesis in impairment terms only. For the assessment of impairment, when a joint is ankylosed (AMA5 Section 17.2g, pp 538-543), the calculation to be applied is to select the impairment if the joint is ankylosed in optimum position (see Table 3.1 below), and then if not ankylosed in the optimum position by adding (not combining) the values of percentage of WPI using tables 17-15 to 17-30 (pp 538-543 AMA5).

Table 3.1 Impairment for ankylosis in the optimum position

Joint	Whole person	Lower extremity	Ankle or foot
Hip	20%	50%	–
Knee	27%	67%	–
Pantalar	19%	47%	67%
Ankle	15%	37%	53%
Triple	6%	15%	21%
Subtalar	4%	10%	14%

Note that the figures in Table 3.1 suggested for ankle impairment are greater than those suggested in AMA5.

Ankylosis of the ankle in the neutral/optimal position equates with 15 (37) [53] % impairment as per Table 3.1. Table 3.1(a) is provided below as guidance to evaluate additional impairment owing to variation from the neutral position. The additional amounts at the top of each column are added to the figure for impairment in the neutral position. In keeping with AMA5, p 541, the maximum impairment for ankylosis of the ankle remains at 25 (62) [88] % impairment.

Table 3.1(a) Impairment for ankylosis in variation from the optimum position

Whole person (lower extremity) [foot] impairment (%)				
Position	**2 (5) [7]**	**4 (10) [14]**	**7 (17) [24]**	**10 (25) [35]**
1. Dorsiflexion	5- 9 °	10- 19°	20- 29°	30°+
2. Plantar flexion	-	10- 19°	20- 29°	30°+
3. Varus	5- 9 °	10- 19°	20- 29°	30°+
4. Valgus	-	10- 19°	20- 29°	30°+
5. Internal rotation	0- 9 °	10- 19°	20- 29°	30°+
6. External rotation	15- 19°	20- 29°	30- 39°	40°+

Arthritis

3.19 Impairment due to arthritis (AMA5 Section 17.2h, pp 544-545) following a work-related injury is uncommon, but may occur in isolated cases. An impairment rating for arthritis should only be made if the arthritis has been caused by the work-related injury.

The presence of arthritis may indicate a pre-existing condition. This may be assessed and an appropriate deduction made if the condition was symptomatic and that condition contributes to the impairment arising from the work-related injury (see para 1.34).

3.20 The presence of osteoarthritis is defined as cartilage loss. Cartilage loss can be measured by properly aligned plain x-ray, or by direct vision (arthroscopy) but impairment can only be assessed by the radiologically determined cartilage loss intervals in AMA5, Table 17-31 (p 544). When assessing impairment of the knee joint which has three compartments, only the compartment with the major impairment is used in the assessment. That is, measured impairments in the different compartments cannot be added or combined.

3.21 Detecting the subtle changes of cartilage loss on plain radiography requires comparison with the normal side. All joints should be imaged directly through the joint space, with no overlapping of bones. If comparison views are not available, AMA5 Table 17-31 (p 544) is used as a guide to assess joint space narrowing.

3.22 One should be cautious in making a diagnosis of cartilage loss on plain radiography if secondary features of osteoarthritis, such as osteophytes, subarticular cysts or subchondral sclerosis are lacking, unless the other side is available for comparison. The presence of an intra-articular fracture with a step in the articular margin in the weight bearing area implies cartilage loss.

3.23 The accurate radiographic assessment of joints always requires at least two views. In some cases, further supplementary views will optimise the detection of joint space narrowing or the secondary signs of osteoarthritis.

Sacro-iliac joints: Being a complex joint, modest alterations are not detected on radiographs, and cross sectional imaging may be required. Radiographic manifestations accompany pathological alterations. The joint space measures between 2mm and 5mm. Osteophyte formation is a prominent characteristic of osteoarthritis of the sacro-iliac joint.

Hip: An anteroposterior view of the pelvis and a lateral view of the affected hip are ideal. If the affected hip joint space is narrower than the asymptomatic side, cartilage loss is regarded as being present. If the anteroposterior view of pelvis has been obtained with the patient supine, it is important to compare the medial joint space of each hip as well as superior joint space, as this may be the only site of apparent change. If both sides are symmetrical, then other features, such as osteophytes, subarticular cyst formation, and calcar thickening should be taken into account to make a diagnosis of osteoarthritis.

Knee - Tibio-femoral joint: The best view for assessment of cartilage loss in the knee is usually the erect intercondylar projection, as this profiles and stresses the major weight bearing area of the joint which lies posterior to the centre of the long axis. The ideal x-ray is a posteroanterior view with the patient standing, knees slightly flexed, and the x-ray beam angled parallel to the tibial plateau (Rosenberg view). Both knees can readily be assessed with the one exposure. In the knee it should be recognised that joint space narrowing does not necessarily equate with articular cartilage loss, as deficiency or displacement of the menisci can also have this effect. Secondary features, such as subchondral bone change and past surgical history, must also be taken into account.

Knee - Patello-femoral joint: Should be assessed in the 'skyline'view, again preferably with the other side for comparison. The x-ray should be taken with 30 degrees of knee flexion to ensure that the patella is load-bearing and has engaged the articular surface femoral groove.

Footnote to Table 17-31 (p 544 AMA5) regarding patello-femoral pain and crepitation:

This item is only to be used if there is a history of direct injury to the front of the knee, or in cases of patellar translocation/dislocation without there being direct anterior trauma. This item cannot be used as an additional impairment when assessing arthritis of the knee joint itself, of which it forms a component. If patello-femoral crepitus occurs in isolation (i.e. no other signs of arthritis) following either of the above, then it can be combined with other diagnosis based estimates (Table 17-33, AMA5, p 546). Signs of crepitus need to be present at least one year post injury.

Note: Osteoarthritis of the patello-femoral joint cannot be used as an additional impairment when assessing arthritis of the knee joint itself, of which it forms a component.

Ankle: The ankle should be assessed in the mortice view (preferably weight-bearing), with comparison views of the other side, although this is not as necessary as with the hip and knee.

Subtalar: This joint is better assessed by CT (in the coronal plane) than by plain radiography. The complex nature of the joint does not lend itself to accurate and easy plain x-ray assessment of osteoarthritis.

Talonavicular and calcaneocuboid: Anteroposterior and lateral views are necessary. Osteophytes may assist in making the diagnosis.

Intercuneiform and other intertarsal joints: Joint space narrowing may be difficult to assess on plain radiography. CT (in the axial plane) may be required. Associated osteophytes and subarticular cysts are useful adjuncts to making the diagnosis of osteoarthritis in these small joints.

Great toe metatarsophalangeal: Anteroposterior and lateral views are required. Comparison with the other side may be necessary. Secondary signs may be useful.

Interphalangeal: It is difficult to assess small joints without taking secondary signs into account.

The plantar dorsal view may be required to get through the joints, in a foot with flexed toes.

3.24 If arthritis is used as the basis for assessing impairment, then the rating cannot be combined with gait disturbance, muscle atrophy, muscle strength or range of movement assessments. It can be combined with a diagnosis-based estimate (Table 17-2, AMA5, p 526).

Amputation

3.25 Where there has been amputation of part of a lower extremity, Table 17-32 (p 545 AMA5) applies. In that table the references to three inches for below-the-knee amputation should be converted to 7.5cm.

Diagnosis-based estimates (lower extremity)

3.26 Section 17.2j (pp 545-549 AMA5) lists a number of conditions that fit a category of diagnosis-based estimates. They are listed in tables 17-33, 17-34 and 17-35 (pp 546-549 AMA5). When using this table it is essential to read the footnotes carefully. The category of mild cruciate and collateral ligament laxity has inadvertently been omitted in Table 17-33 of AMA5. The appropriate rating is 5 (12) % whole person (lower extremity) impairment.

3.27 It is possible to combine impairments from tables 17-33, 17-34 and 17-35 for diagnosis-related estimates with other components (e.g. nerve injury) using the combined values chart (pp 604- 606 AMA5) after first referring to the WorkCover WA Guidelines to the appropriate combination of evaluation methods (see Table 3.5).

3.28 **Pelvic fractures:** Pelvic fractures are to be assessed as per Table 4.3 in the WorkCover WA Guidelines, and not using the reference to the pelvis in Table 17-33 (p 546 AMA5).

Hip: The item in relation to femoral neck fracture 'malunion'is not to be used in assessing impairment. Use other available methods.

Femoral Osteotomy: Good result: 10 (25)

Poor result: Estimate according to examination and arthritic degeneration

Tibial plateau fractures: This table replaces the instructions for tibial plateau fractures in Table 17-33 (p 546 AMA5).

Table 3.2 Impairment for tibial plateau fractures

In deciding whether the facture falls into the mild, moderate or severe categories, the AMS must take into account:

(i) The extent of involvement of the weight bearing area of the tibial plateau.

(ii) The amount of displacement of the fracture/s.

(iii) The amount of comminution present.

Grade	WPI (LEI)%
Undisplaced	2(5)
Mild	5(12)
Moderate	10(25)
Severe	15(37)

Patello-femoral joint replacement: Assess the knee impairment in the usual way and combine with 9% WPI (22% lower extremity impairment) for isolated patello-femoral joint replacement.

Total Ankle Replacement:

Table 3.3: Rating for ankle replacement results

The points system for rating total ankle replacements is to be the same as for total hip and total knee replacements, with the following impairment ratings:

Result	(LEI) WPI %
Good result, 85-100 points:	(30) 12
Fair result, 50-84 points:	(40) 16
Poor result, < 50 points:	(50) 20

	Number of Points
a. Pain	
None	50
Slight	
Stairs only	40
Walking and stairs	30
Moderate	
Occasional	20
Continual	10
Severe	0
b. Range of motion	
(i) Flexion:	
>20°	15
°20 − °11	10
°10 − °5	5
<°5	0
(ii) Extension	
>°10	10
5° − 10°	5
<5°	0
c. Range of motion	
(i) Limp	
None	10
Slight	7
Moderate	4
Severe	0
(ii) Supportive Device	
None	5
Cane	3
One Crutch	1
2 Crutches	0

	Number of Points
(iii) Distance Walked	
Unlimited	5
Six blocks	4
Three blocks	3
Indoors	2
Bed or Chair	0
(iv) Stairs	
Normal	5
Using rail	4
One at a time	2
Unable to climb	0
SUBTOTAL	

DEDUCTION S (minus) d	
d. Varus	
<5°	0
5° − 10°	10
>10°	15
e. Valgus	
<5°	0
5° − 10°	10
>10°	15
SUBTOTAL	

Tibia-os calcis angle: The table given below for the impairment of loss of the tibia-os calcis angle is to replace Table 17-29 (p 542 AMA5) and the section in Table 17-33 (p 546 AMA5) dealing with loss of tibia-os calcis angle. These two sections are contradictory, and neither gives a full range of loss of angle.

Table 3.4 Impairment for loss of the tibia-os calcis angle

Angle (degree)	Whole Person (lower extremity) [foot] impairment (%)
110 – 100	5 (12) [17]
99 – 90	8 (20) [28]
< 90	+1 (2) [3] per ° up to 15 (37) [54]

Hindfoot Intra-articular fractures: In the interpretation of Table 17-33 (p 547 AMA5), reference to the hindfoot, intra-articular fractures, the words subtalar bone, talonavicular bone, and calcaneocuboid bone imply that the bone is displaced on one or both sides of the joint mentioned. To avoid the risk of double assessment, if avascular necrosis with collapse is used as the basis of impairment assessment, it cannot be combined with the relevant intra-articular fracture in Table 17-33 column 2. In Table 17-33 column 2, metatarsal fracture with loss of weight transfer means dorsal displacement of the metatarsal head.

Plantar fasciitis: If there are persistent symptoms and clinical findings after 18 months, this is rated as 2% lower extremity impairment (1% WPI).

Resurfacing procedures: No additional impairment is to be awarded for resurfacing procedures used in the treatment of localised cartilage lesions and defects in major joints.

3.29 Table 17-34 and Table 17-35 (pp 548-549 AMA5) 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 is converted to an impairment rating from Table 17-33. Tables 17-34 and 17-35 refer to the hip and knee joint replacement respectively. Note that, while all the points are added in Table 17-34, some points are deducted when Table 17-35 is used. (Note that hemi-arthroplasty rates the same as total joint replacement.)

3.30 In respect of 'distance walked' under 'b. Function' in Table 17-34 (p 548 AMA5), the distance of six blocks should be construed as 600m, and three blocks as 300m.

Note that Table 17-35 (p 549 AMA5) is incorrect. The correct table is shown below.

AMA Table 17-35 Rating Knee replacement Results

	Number of Points
a. Pain	
None	50
Mild or occasional	45
Stairs only	40
Walking and stairs	30
Moderate	
Occasional	20
Continual	10
Severe	0
b. Range of motion	
Add 1 point per 5 ° up to 125 °	25 (maximum)
c. Stability	
(maximum movement in any position)	
Anterioposterior	
< 5 mm	10
5-9 mm	5
> 9 mm	0
Mediolateral	
5 °	15
6-9 °	10
10-14 °	5
> 14 °	0
SUBTOTAL	

	Number of Points
DEDUCTIONS (minus) d, e, f	
d. Flexion contracture	
5-9 °	2
10-15 °	5
16-20 °	10
> 20 °	20
e. Extension Lag	
< 10 °	5
10-20 °	10
> 20 °	15
f. Tibio-femoral alignment *–	
> 15° valgus	20
11-15° valgus	3 points per degree
5-10 ° valgus	0
0-4 ° valgus	3 points per degree
Any varus	20
DEDUCTIONS SUBTOTAL	

*Refer to the unaffected limb to take into account any constitutional variation.

Skin loss (lower extremity)

3.31 Skin loss (p 550 AMA5) can only be included in the calculation of impairment if it is in certain sites and meets the criteria listed in Table 17-36 (p 550 AMA5).

Peripheral nerve injuries (lower extremity)

3.32 When assessing the impairment due to peripheral nerve injury (pp 550-552 AMA5) AMS should read the text in this section. Note that the separate impairments for the motor, sensory and dysaesthetic components of nerve dysfunction in Table 17-37 (p 552 AMA5) are to be combined.

3.33 Note that the (posterior) tibial nerve is not included in Table 17-37, but its contribution can be calculated by subtracting ratings of common peroneal nerves from sciatic nerve ratings.

3.34 Peripheral nerve injury impairments can be combined with other impairments, but not those for gait derangement, muscle atrophy, muscle strength or complex regional pain syndrome, as shown in Table 17-2 (p 526 AMA5). Motor and sensory impairments given in Table 17-37 are for complete loss of function and AMS must still use Table 16-10 and 16-11 in association with Table 17-37.

Complex regional pain syndrome (lower extremity)

3.35 Complex regional pain syndrome types 1 and 2 are to be assessed using the method in Chapter 17 of the WorkCover WA Guidelines.

For chronic pain assessment using AMA5 and the WorkCover WA Guidelines, Chapter 18 of AMA5 Pain (p 565-591) is excluded. Section 13.8 of AMA5 (p 343-344) is also excluded.

Peripheral vascular disease (lower extremity)

3.36 Lower extremity impairment due to vascular disorders (pp 553-554 AMA5) is evaluated using Table 17-38 (p 554 AMA5). Note that Table 17-38 gives values for lower extremity not WPI. In that table there is a range of lower extremity impairments within each of the classes 1 to 5. As there is a clinical description of which conditions place a person's lower extremity in a particular class, the AMS has a choice of impairment rating within a class, the value of which is left to the clinical judgement of the AMS.

Measurement of selected joint motion

3.37 When measuring dorsiflexion at the ankle, the test is carried out initially with the knee in extension and then repeated with the knee flexed to 45 degrees. The average of the maximum angles represents the dorsiflexion range of motion (Figure 17-5, p 535 AMA5).

Table 3.5: Lower extremity worksheet

Item	Impairment	AMA5 Table	AMA5 page	Potential impairment	Selected impairment
1	Limb length discrepancy	17–4	528		
2	Gait derangement	17–5	529		
3	Unilateral muscle atrophy	17–6	530		
4	Muscle weakness	17–8	532		
5	Range of motion	17–9 to 17–14	537		
6	Joint ankylosis	17–15 to 17–30	538–543		
7	Arthritis	17–31	544		
8	Amputation	17–32	545		
9	Diagnosis-based estimates	17–33 to 17–35	546–549		
10	Skin loss	17–36	550		
11	Peripheral nerve deficit	17–37	552		
12	Complex regional pain syndrome	Section 16.5e	495–497		
13	Vascular disorders	17–38	554		
Combined impairment rating (refer to Table 17–2, p 526 AMA5 for permissible combinations)					

Potential impairment is the impairment percentage for that method of assessment. Selected impairment is the impairment, or impairments selected, that can be legitimately combined with other lower extremity impairments to give a final lower extremity impairment rating.

4. The spine

Chapter 15, AMA5 (page 373) applies to the assessment of permanent impairment of the spine, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

4.1 The spine is discussed in Chapter 15 (pp 373-431 AMA5). That chapter presents two methods of assessment, the diagnosis-related estimates method and the range of motion method. Evaluation of impairment of the spine is only to be done using diagnosis-related estimates (DREs).

4.2 The DRE method relies especially on evidence of neurological deficits and less common, adverse structural changes, such as fractures and dislocations. Using this method, DREs are differentiated according to clinical findings that can be verified by standard medical procedures.

4.3 The assessment of spinal impairment is made when the person's condition has stabilised and has reached MMI. This is considered to occur when the worker's condition is well stabilised and unlikely to change substantially in the next year with or without medical treatment. If surgery has been performed, the outcome of the surgery as well as structural inclusions must be taken into consideration when making the assessment.

Assessment of the spine

4.4 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 and their relationship to daily activities, 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 AMS should record whether diagnostic tests and radiographs were seen or whether they relied solely on reports.

4.5 The DRE model for assessment of spinal impairment should be used. The range of motion model (sections 15.8-15.13 inclusive, AMA5 pp 398-427) should not be used.

4.6 If a person has spinal cord or cauda equina damage, including bowel, bladder and/or sexual dysfunction, he or she is assessed according to the method described in Section 15.7 and Table 15.6 (a) to (g) (pp 395-398 AMA5).

4.7 If an AMS is unable to distinguish between two DRE categories, then the higher of those two categories should apply. The reasons for the inability to differentiate should be noted in the report.

4.8 Possible influence of future treatment should not form part of the impairment assessment. The assessment should be made on the basis of the person's status at the time of interview and examination, if the AMS is convinced that the condition is stable and permanent. Likewise, the possibility of subsequent deterioration, as a consequence of the underlying condition, should not be factored into the impairment evaluation. Commentary can be made regarding the possible influence, potential or requirements for further treatment, but this does not affect the assessment of the individual at the time of impairment evaluation.

4.9 All spinal impairments are to be expressed as a percentage of WPI.

4.10 Section 15.1a (pp 374-377 AMA5) is a valuable summary of history and physical examination, and should be thoroughly familiar to all AMS.

4.11 The AMS should include in the report a description of how the impairment rating was calculated, with reference to the relevant tables and/or figures used.

4.12 The optimal method to measure the percentage compression of a vertebral body is a well centred plain x-ray. AMS should state the method they have used. 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 and normal) vertebrae.

Specific interpretation of AMA5

4.13 The range of motion method is not used, hence any reference to this is omitted (including Table 15-7, p 404 AMA5).

4.14 Motion segment integrity alteration can be either increased translational or angular motion, or decreased motion resulting from developmental changes, fusion, fracture healing, healed infection or surgical arthrodesis. Motion of the individual spine segments cannot be determined by a physical examination, but is evaluated with flexion and extension radiography.

4.15 The assessment of altered motion segment integrity is to be based upon a report of trauma resulting in an injury, and not on developmental or degenerative changes.

4.16 When routine imaging is normal and severe trauma is absent, motion segment disturbance is rare. Thus, flexion and extension imaging is indicated only when a history of trauma or other imaging leads the physician to suspect alteration of motion segment integrity.

DRE definitions of clinical findings

4.17 The preferred method for recording of the range of motion is as a fraction or percent of the range or loss of the range. For example, either 'cervical movement was one half (or 50%) of the normal range of motion'or 'there was a loss of one half (or 50%) of the normal range of movement of the cervical spine'.

4.18 DRE II is a clinical diagnosis based upon the features of the history of the injury and clinical features. Clinical features which are consistent with DRE II and which are present at the time of assessment include radicular symptoms in the absence of clinical signs (that is, non-verifiable radicular complaints), muscle guarding or spasm, or asymmetric loss of range of movement. Localised (not generalised) tenderness may be present. In the lumbar spine additional features include a reversal of the lumbosacral rhythm when straightening from the flexed position and compensatory movement for an immobile spine such as flexion from the hips. In assigning category DRE II, the AMS must provide detailed reasons why the category was chosen.

4.19 Asymmetric or non-uniform loss of range of motion may be present in any of the three planes of spinal movement. Asymmetry during motion caused by muscle guarding or spasm is included in the definition.

Asymmetric loss of range of motion may be present for flexion and extension. For example, if cervical flexion is half the normal range (loss of half the normal range) and cervical extension is one third of the normal range (loss of two-thirds of the range), asymmetric loss of range of motion may be considered to be present.

4.20 While imaging and other studies may assist AMS in making a diagnosis, the presence of a morphological variation from 'normal' in an imaging study does not confirm the diagnosis. To be of diagnostic value, imaging studies must be concordant with clinical symptoms and signs. In other words, an imaging test is useful to confirm a diagnosis, but an imaging study alone is insufficient to qualify for a DRE category (excepting spinal fractures).

4.21 The clinical findings used to place an individual in a DRE category are described in Box 15-1 (pp 382-383 AMA5).

The reference to 'electro-diagnostic verification of radiculopathy' should be disregarded.

(Electro-diagnostic procedures such as electromyography are not to be used as an assessment aid for decisions about the category of impairment into which a person should be placed. It is considered that competent AMS can make decisions about which DRE category a person should be placed in from the clinical features alone. The use of electro-diagnostic differentiators is generally unnecessary).

4.22 The cauda equina syndrome is defined in AMA5 (Chapter 15, p 383, Box 15.1) as 'manifested by bowel or bladder dysfunction, saddle anaesthesia and variable loss of motor and sensory function in the lower limbs'. For a cauda syndrome to be present there must be bilateral neurological signs in the lower limbs and sacral region. Additionally, there must be a radiological study which demonstrates a lesion in the spinal canal causing a mass effect on the cauda equina with compression of multiple nerve roots. The mass effect would be expected to be large and significant. A lumbar MRI scan is the diagnostic investigation of choice for this condition. A cauda equina syndrome may occasionally complicate lumbar spine surgery when a mass lesion will not be present in the spinal canal on radiological examination.

4.23 The cauda equina syndrome and neurogenic bladder disorder are to be assessed by the method prescribed in the spine chapter of AMA5, Section 15.7, pp 395-398. For an assessment of neurological impairment of bowel or bladder, there must be objective evidence of spinal cord, or cauda equina injury.

Applying the DRE method

4.24 The specific procedures and directions Section of AMA5 (Section 15.2a, pp 380-381) indicates the steps that should be followed to evaluate impairment of the spine (excluding references to the ROM method). Table 4.1 is a simplified version of that section, incorporating the amendments listed above.

Table 4.1: Procedures in evaluating impairment of the spine

History
Physical examination
⇓
Diagnosis
⇓Use clinical findings to place an individual's condition in a DRE category according to Box 15.1, AMA5 pp 382–383
⇓
Choose the category that determines the percentage impairment:
Lumbar region — AMA5 Table 15–3, p 384
Thoracic region — AMA5 Table 15–4, p 389
Cervical region — AMA5 Table 15–5, p 392

4.25 Common developmental findings, spondylosis, spondylolisthesis and disc protrusions without radiculopathy occur in 7%, 3%, and up to 30% respectively in individuals up to the age of 40 (p 383 AMA5). Their presence does not of itself mean that the individual has an impairment due to injury.

4.26 **Loss of sexual function** should only be assessed where there is other objective evidence of spinal cord, cauda equina or bilateral nerve root dysfunction. The ratings are described in Table 15-6 (pp 396- 397 AMA5). There is no additional impairment rating system for loss of sexual function in the absence of objective neurological findings. Loss of sexual function is not assessed as an ADL.

4.27 **Radiculopathy** is the impairment caused by malfunction of a spinal nerve root or nerve roots. In general, in order to conclude that radiculopathy is present, two or more of the following criteria should be found, one of which must be major (major criteria in bold):

- **loss or asymmetry of reflexes**
- **muscle weakness that is anatomically localised to an appropriate spinal nerve root distribution**
- **reproducible impairment of sensation that is anatomically localised to an appropriate spinal nerve root distribution**
- positive nerve root tension (Box 15-1, p 382 AMA5)
- muscle wasting – atrophy (Box 15-1, p 382 AMA5)
- findings on an imaging study consistent with the clinical signs (p 382 AMA5)

4.28 Radicular complaints of pain or sensory features that follow anatomical pathways but cannot be verified by neurological findings (somatic pain, non-verifiable radicular pain) do not alone constitute radiculopathy.

4.29 Global weakness of a limb related to pain or inhibition or other factors does not constitute weakness due to spinal nerve malfunction.

4.30 Vertebral body fractures and/or dislocations at more than one vertebral level are to be assessed as follows:

- measure the percentage loss of vertebral height at the most compressed part for each vertebra; then
- add the percentage loss at each level:
  - total loss of more than 50% = DRE IV;
  - total loss of 25% to 50% = DRE III;
  - total loss of less than 25% = DRE II.
- if radiculopathy is present then the person is assigned one DRE category higher.

One or more end plate fractures in a single spinal region without measurable compression of the vertebral body are assessed as DRE category II.

Posterior element fractures (excludes fractures of transverse processes and spinous processes) at multiple levels are assessed as DRE III.

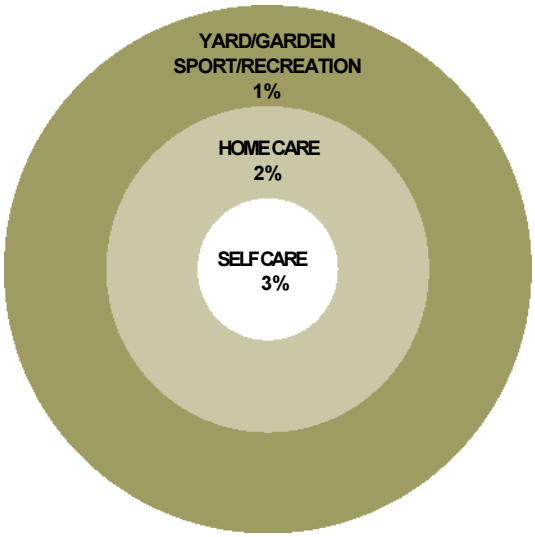
4.31 Displaced fractures of transverse or spinous processes at one or more levels are assessed as DRE category II because the fracture does not disrupt the spinal canal (p 385 AMA5) and do not cause multilevel structural compromise.

4.32 Within a spinal region separate spinal impairments are not combined. The highest value impairment within the region is chosen. Impairments in different spinal regions are combined using the combined values chart (AMA5, pp 604-606).

If there are adjacent vertebral fractures at the transition zones (C7/T1, T12/L1), the methodology in paragraph 4.30 is to be adopted. For fractures of C7 and T1, use the WPI ratings for the cervical spine (AMA5 Chapter 15, p 392, Table 15.5). For fractures of T12 and L1 use the WPI rating for the thoracic spine (AMA5 Chapter 15, p 389, Table 15.4).

4.33 **Impact of ADL.** Tables 15-3, 15-4 and 15-5 of AMA5 give an impairment range for DREs II to V. Within the range, 0%, 1%, 2% or 3% WPI may be assessed using paragraphs 4.34 and 4.35 below. An assessment of the effect of the injury on ADL is not solely dependent on self-reporting, but is an assessment based on all clinical findings and other reports.

4.34 The following diagram should be used **as a guide** to determine whether 0%, 1%, 2% or 3% WPI should be added to the bottom of the appropriate impairment range. This is only to be added if there is a difference in activity level as recorded and compared to the worker's status prior to the injury.



4.35 The diagram is to be interpreted as follows:

Increase base impairment by:

- 3% WPI if worker's capacity to undertake personal care activities such as dressing, washing, toileting and shaving has been affected.
- 2% WPI if the worker can manage personal care, but is restricted with usual household tasks such as cooking, vacuuming, making beds or tasks of equal magnitude such as shopping, climbing stairs or walking reasonable distances.
- 1% WPI for those able to cope with the above, but unable to get back to previous sporting or recreational activities such as gardening, running and active hobbies etc.

4.36 For a single injury, where there has been more than one spinal region injured, the effect of the injury on ADL is assessed once only.

In the event of subsequent injury or injuries (whether to the same of different spinal regions), the maximum cumulative WPI is 3%. For example, if 1% WPI for ADL is assessed following the first injury and 3% after the second injury, then 2% WPI is the impact on ADL for the second injury.

4.37 **Effect of surgery:** Tables 15-3, 15-4 and 15-5 (pp 384, 389 and 392 AMA5) do not adequately account for the effect of surgery upon the impairment rating for certain disorders of the spine. The AMS should note that:

- surgical decompression for spinal stenosis is DRE category III (AMA5 tables 15-3, 15-4, 15-5);
- operations where the radiculopathy has resolved are considered under the DRE category III (AMA5, tables 15–3, 15–4, 15–5);
- operations for spinal fusion (successful or unsuccessful) are considered under DRE category IV (AMA5, tables 15–3, 15–4, 15–5);
- DRE Category V is not to be used following spinal fusion, where there is a persisting radiculopathy. Instead use Table 4.2 in the WorkCover WA Guidelines; and
- radiculopathy persisting after surgery is not accounted for by AMA5 Table 15-3, and incompletely by tables 15-4 and 15-5, which only refer to radiculopathy which has improved following surgery.

Table 4.2 indicates the additional ratings which should be combined with the rating determined using the DRE method where an operation for an intervertebral disc prolapse, spinal canal stenosis or spinal fusion has been performed.

Example 15-4 (p 386 AMA5) should therefore be ignored.

Table 4.2: Modifiers for DRE categories following surgery

Procedures	Cervical	Thoracic	Lumbar
Spinal surgery with residual symptoms and radiculopathy (refer to 4.27 in the WorkCover WA Guidelines)	3%	2%	3%
Second and further levels	1% each additional level	1% each additional level	1% each additional level
Second operation	2%	2%	2%
Third and subsequent operations	1% each	1% each	1% each

In summary, to calculate whole person impairment (WPI) for persisting radiculopathy (as per definition) following surgery:

- select the appropriate DRE category from Table 15-3, 15-4, or 15-5;
- determine a WPI value within the allowed range in Table 15-3, 15-4 or 15-5 according to the impact on the worker's ADL;
- combine this value with the appropriate additional amount from Table 4.2 to determine the final WPI.

4.38 **Disc Replacement Surgery:** The impairment resulting from this procedure is to be equated to that from a spinal fusion.

4.39 **Arthritis:** See paragraphs 3.19–3.24 of the WorkCover WA Guidelines.

4.40 **Posterior spacing or stabilisation devices:** The insertion of such devices does not warrant any additional WPI.

4.41 **Spinal cord stimulator or similar device:** The insertion of such devices does not warrant any additional WPI.

4.42 Impairment due to pelvic fractures should be evaluated with reference to the following table which replaces Table 15-19 in AMA5.

Table 4.3: Pelvic fractures

Disorder	%WPI
1. Non-displaced, healed fractures	0
2. Fractures of the pelvic bones (including sacrum)	
(i) maximum residual displacement <1cm	2
(ii) maximum residual displacement 1 to 2 cm	5
(iii) maximum residual displacement >2cm	8
(iv) bilateral pubic rami fractures, as determined by the most displaced fragment	
a. maximum residual displacement ≤2cm	5
b. maximum residual displacement >2cm	8
3. Traumatic separation of the pubic symphysis	
(i) <1cm	5
(ii) 1 to 2 cm	8
(iii) >2cm	12
(iv) Internal fixation/ankylosis	5
4. Sacro-Iliac Joint dislocations or fracture dislocations	
(i) maximum residual displacement ≤1cm	8
(ii) maximum residual displacement>1cm	12
(iii) internal fixation/ankylosis	5
5. If two out of three joints are internally fixed/ankylosed	8
If all three joints are internally fixed/ankylosed	10

Disorder	%WPI
6. Fractures of the coccyx	
(i) Healed, (and truly) displaced fractur	1
(ii) Excision of the coccyx	5
7. Fractures of the acetabulum: Evaluate based on restricted range of hip motion	

The rating of WPI is evaluated based on radiological appearance at MMI, whether or not surgery has been performed. Multiple impairments of the pelvis should be assessed separately and combined, with the maximum WPI for pelvic fractures being 20%.

5. Nervous system

Chapter 13, AMA5 (page 305) applies to the assessment of permanent impairment of the nervous system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

5.1 AMA5 Chapter 13, the central and peripheral nervous system (pp 305-356), provides guidelines on methods of assessing permanent impairment involving the central nervous system. It is logically structured and consistent with the usual sequence of examination of the nervous system. Cerebral functions are discussed first, followed by the cranial nerves, station, gait and movement disorders, the upper extremities related to central impairment, the brain stem, the spinal cord and the peripheral nervous system, including neuromuscular junction and muscular system. A summary concludes the chapter.

5.2 Spinal cord injuries are to be assessed using AMA5 Chapter 15.

Table 15.6 (pp 396-397) is to be used for evaluation of spinal cord injuries. These impairments, once selected, are then combined with the corresponding additional spinal impairment from DRE categories II-V for cervical and lumbar impairment and categories II-IV for thoracic impairment to obtain an exact total value.

5.3 Impairments of the peripheral nervous system are assessed by using the relevant parts of the upper extremity, lower extremity and spine sections of AMA5.

The approach to assessment of permanent neurological impairment

5.4 AMA5 Chapter 13 disallows combination of cerebral impairments. However, for the purpose of the WorkCover WA Guidelines, cerebral impairments should be evaluated and combined as follows:

- consciousness and awareness;
- mental status, cognition and highest integrative function;
- aphasia and communication disorders;
- emotional and behavioural impairments.

The AMS should take care to be as specific as possible and not to double-rate the same impairment, particularly in the mental status and behavioural categories.

These impairments are to be combined using the combined values chart (pp 604-606 AMA5). These impairments should then be combined with other neurological impairments indicated in AMA5 Table 13-1 (p 308).

5.5 AMA5 sections 13.5 and 13.6 (pp 336-340) should be used for cerebral, basal ganglia, cerebellar or brain stem impairments. This section therefore covers hemiplegia, monoplegia (arm or leg) and upper or lower limb impairment due to incoordination or movement disorder due to brain injury.

5.6 If a person has a spinal injury with spinal cord or cauda equina, bilateral nerve root or lumbosacral plexus injury causing bowel, bladder and/or sexual dysfunction, he or she is assessed according to the method described in Section 15.7 and Table 15.6 (a)-(g), pp 395-398, AMA5.

5.7 Complex regional pain syndrome types 1 and 2 are to be assessed using the method in Chapter 17 of the WorkCover WA Guidelines.

5.8 The nervous system chapter of AMA5 (chapter 13) lists many impairments where the range for the associated WPI is 0-9% or 0-14%. Where there is a range of impairment percentages listed, the AMS should nominate an impairment percentage based on the complete clinical circumstances revealed during the consultation and in relation to all other available information.

Specific interpretation of AMA5

5.9 In assessing disturbances of mental status and integrative functioning, and emotional or behavioural disturbances, disturbances in the level of consciousness and awareness, disturbances of sleep and arousal function and disorders of communication (sections 13.3a, 13.3c, 13.3d, 13.3e, 13.3f, AMA5 pp 309-311, 317-327), the AMS should make ratings based on clinical assessment and the results of neuropsychometric testing where available.

For traumatic brain injury, there should be evidence of a severe impact to the head or that the injury involved a high energy impact.

Clinical assessment must include at least one of the following:

- significant medically verified abnormalities in the Glasgow Coma Scale score;
- significant medically verified duration of post traumatic amnesia;
- significant intracranial pathology on CT scan or MRI.

Neuropsychological testing should be conducted by a registered clinical neuropsychologist who is a member, or is eligible for membership, of the Australian Psychological Society's College of Clinical Neuropsychology. Neuropsychological test data is to be considered in the context of the overall clinical history, examination and radiological findings and not in isolation.

5.10 **Assessment of arousal and sleep disorders (AMA5 Section 13.3c, pp 317-319):** refers to assessment of primary sleep disorders following neurological injury. The AMS should make ratings of arousal and sleep disorders based on the clinical assessment that would normally have been done for clinically significant disorders of this type (i.e. sleep studies or similar tests).

5.11 **Olfaction and taste:** The AMS should use AMA5 Chapter 11, Section 11.4c (p 262) to assess olfaction and taste, for which a maximum of 5% WPI is allowable for total loss of either sense. The effect on activities of daily living should be considered.

5.12 **Visual impairment assessment (Chapter 8, pp 209-222 AMA4):** An ophthalmologist should assess all impairments of visual acuity, visual fields, extra-ocular movements or diplopia.

5.13 **Trigeminal nerve assessment (p 331 AMA5):** Sensory impairments of the trigeminal nerve should be assessed with reference to AMA5 Table 13-11 (p 331). The words 'sensory loss or dysaesthesia'should be added to the Table after the words 'neuralgic pain'in each instance. Lesions of the ophthalmic division of the trigeminal nerve with impairment of corneal sensation should be apportioned with extra weighting.

If present, motor loss for the trigeminal nerve should be assessed in terms of its impact on mastication and deglutition (p 262 AMA5).

For bilateral injury to the trigeminal nerves, assess each side separately and combine the assessed WPIs.

5.14 **Spinal accessory nerve:** AMA5 provides insufficient reference to the spinal accessory nerve (cranial nerve XI). This nerve supplies the trapezius and sternomastoid muscles. For loss of use of the nerve to trapezius, the AMS should refer to AMA5 Chapter 16 on upper limb assessment, and a maximum of 10% impairment of the upper limb may be assigned. For additional loss of use of sternomastoid, a maximum of 3% upper limb impairment may be added.

5.15 Impairment of sexual function caused by severe traumatic brain injury is to be assessed by using Table 13.21 (p 342 AMA5). For spinal cord, nerve root or more peripheral nerve injury, sexual impairment should only be assessed where there is appropriate objective evidence of spinal cord, cauda equina or bilateral nerve root dysfunction or lumbosacral plexopathy.

5.16 Impairment due to miscellaneous peripheral nerves should be evaluated with reference to the following table.

Table 5.1 Criteria for Rating Miscellaneous Peripheral Nerves

Whole Person Impairment Rating				
Peripheral Nerve	**0%**	**1%**	**2% - 3%**	**4% - 5%**
Clinical features	No neuralgia	Sensory loss only in an anatomic distribution	Mild to moderate neurogenic pain and sensory alteration in an anatomic distribution	Severe neurogenic pain and sensory alteration in an anatomic distribution
Greater Occipital Nerve or Lesser Occipital Nerve or Greater Auricular Nerve				
Intercostal Nerve				
Genitofemoral				
Ilio-inguinal				
Ilio-hypogastric				
Pudendal				

6. Ear, nose, throat and related structures

Chapter 11, AMA5 (page 245) applies to the assessment of permanent impairment of the ear (with the exception of hearing impairment), nose, throat and related structures, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

6.1 AMA5 Chapter 11 (pp 245-275) details the assessment of the ear, nose, throat and related structures. With the exception of hearing impairment, which is dealt with in Chapter 9 of the WorkCover WA Guidelines, AMA5 Chapter 11 should be followed in assessing permanent impairment, with the variations included below.

6.2 The level of impairment arising from conditions that are not work related needs to be assessed by the AMS and taken into consideration in determining the level of permanent impairment. The level at which pre-existing conditions and lifestyle activities such as smoking contribute to the level of permanent impairment requires judgement on the part of the clinician undertaking the impairment assessment. The manner in which any deduction for these is applied needs to be recorded in the assessing specialist's report.

The ear

6.3 Equilibrium is assessed according to AMA5 Section 11.2b (pp 252-255), but add these words to AMA5 Table 11-4 (p 253), Class 2: 'without limiting the generality of the above, a positive Hallpikes test is a sign and an objective finding'.

The face (AMA5, pp255–259)

6.4 AMA5 Table 11-5 (p 256) should be replaced with Table 6.1 below when assessing permanent impairment due to facial disorders and/or disfigurement.

Table 6.1: Criteria for rating permanent impairment due to facial disorders and/or disfigurement

Class 1 0%–5% impairment of the whole person	Class 2 6%–10% impairment of the whole person	Class 3 11%–15% impairment of the whole person	Class 4 16%–50% impairment of the whole person
Facial abnormality limited to disorder of cutaneous structures, such as visible simple scars (not hypertrophic or atrophic) or abnormal pigmentation (refer to AMA5 Chapter 8 for skin disorders) or mild, unilateral, facial paralysis affecting most branches or nasal distortion that affects physical appearance or partial loss or deformity of the outer ear	Facial abnormality involves loss of supporting structure of part of face, with or without cutaneous disorder (e.g., depressed cheek, nasal, or frontal bones) or near complete loss of definition of the outer ear	Facial abnormality involves absence of normal anatomic part or area of face, such as loss of eye or loss of part of nose, with resulting cosmetic deformity, combine with any functional loss, e.g., vision (AMA4 Chapter 8) or severe unilateral facial paralysis affecting most branches or mild, bilateral, facial paralysis affecting most branches	Massive or total distortion of normal facial anatomy with disfigurement so severe that it precludes social acceptance, or severe, bilateral, facial paralysis affecting most branches or loss of a major portion of or entire nose

Note: Tables used to classify the examples in AMA5 Section 11.3 (pp 256-259) should also be ignored and AMS should refer to the modified table above for classification.

6.5 AMA5 example 11-11 (p 257): Add 'visual impairment related to enophthalmos must be assessed by an Ophthalmologist'.

The nose, throat and related structures

Respiration (AMA5 Section 11.4a, pp259–261)

6.6 In regard to sleep apnoea (third paragraph, AMA5 Section 11.4a, p 259), a sleep study and an examination by an ear, nose and throat specialist is mandatory before assessment by an AMS.

6.7 The assessment of sleep apnoea is addressed in AMA5 Section 5.6 (p 105) and AMS should refer to this chapter, as well as paragraphs 8.8–8.10 in the WorkCover WA Guidelines.

6.8 AMA5 Table 11-6 criteria for rating impairment due to air passage defects (p 260 AMA5) should be replaced with Table 6.2, below, when assessing permanent impairment due to air passage defects.

Table 6.2: Criteria for rating permanent impairment due to air passage defects

Percentage impairment of the whole person					
Class 1a 0%–5%	**Class 1 0%–10%**	**Class 2 11%–29%**	**Class 3 30%–49%**	**Class 4 50%–89%**	**Class 5 90%+**
There are symptoms of significant difficulty in breathing through the nose. Examination reveals significant partial obstruction of the right and/or left nasal cavity or nasopharynx or significant septal perforation.	Dyspnea does not occur at rest and dyspnea is not produced by walking freely on a level surface, climbing stairs freely, or performance of other usual activities of daily living and dyspnea is not produced by stress, prolonged exertion, hurrying, hill-climbing, or recreational or similar activities requiring intensive effort* and examination reveals partial obstruction of the oropharynx, laryngopharynx, larynx, upper trachea (to the fourth cartilaginous ring), lower trachea, bronchi, or complete (bilateral) obstruction of the nose or nasopharynx	Dyspnea does not occur at rest and dyspnea is not produced by walking freely on a level surface, climbing one flight of stairs, or performance of other usual activities of daily living but dyspnea is produced by stress, prolonged exertion, hurrying, hill-climbing, or recreational or similar activities (except sedentary forms) and examination reveals partial obstruction of the oropharynx, laryngopharynx, larynx, upper trachea (to the fourth cartilaginous ring), lower trachea, bronchi, or complete (bilateral) obstruction of the nose or nasopharynx	Dyspnea does not occur at rest and dyspnea is produced by walking freely more than one or two level blocks, climbing one flight of stairs even with periods of rest, or performance of other usual activities of daily living and dyspnea is produced by stress, prolonged exertion, hurrying, hill-climbing, or recreational or similar activities and examination reveals partial obstruction of the oropharynx, laryngopharynx, larynx, upper trachea (to the fourth cartilaginous ring), lower trachea or bronchi	Dyspnea occurs at rest, although individual is not necessarily bedridden and dyspnea is aggravated by the performance of any of the usual activities of daily living (beyond personal cleansing, dressing or grooming) and examination reveals partial obstruction of the oropharynx, laryngopharyx, larynx, upper trachea (to the fourth cartilaginous ring), lower trachea, and/or bronchi	Severe dyspnea occurs at rest and spontaneous respiration is inadequate and respiratory ventilation is required and examination reveals partial obstruction of the oropharynx, laryngopharynx, larynx, upper trachea (to the fourth cartilaginous ring), lower trachea or bronchi

*Prophylactic restriction of activity, such as strenuous competitive sport, does not exclude subject from Class 1.

Note: Individuals with successful permanent tracheostomy or stoma should be rated at 25% WPI. AMA5 example 11-16 (p 261): Partial obstruction of the larynx affecting only one vocal cord is better linked to voice (AMA5 Section 11.4e).

6.9 When using AMA5 Table 11-7 'Relationship of dietary restrictions to permanent impairment' (p 262), the first WPI category is to be 0-19%, not 5-19%.

Speech (AMA5, pp 262–264)

6.10 Regarding the first sentence of the 'examining procedure' subsection (pp 263-264 AMA5): the examiner should have sufficient hearing for the purpose- disregard 'normal hearing as defined in the earlier section of this chapter on hearing'.

6.11 Examining procedure (pp 263-264 AMA5), second paragraph: 'The examiner should base judgements of impairment on two kinds of evidence: (1) attention to and observation of the individual's speech in the office for example, during conversation, during the interview, and while reading and counting aloud- and (2) reports pertaining to the individual's performance in everyday living situations'. Disregard the next sentence: 'The reports or the evidence should be supplied by reliable observers who know the person well.'

6.12 Examining procedure (pp 263-264 AMA5): where the word 'American'appears as a reference, substitute 'Australian', and change measurements to the metric system (e.g. 8.5 inch = 22cm).

The voice (AMA5 Section 11.4e, pp 264–267)

6.13 Substitute the word 'laryngopharyngeal'for 'gastroesophageal' in all examples where it appears.

6.14 Example 11.25 (AMA5, p 269) 'Impairment rating', second sentence: add the words "including respiratory impairment" into the sentence to read 'Combine with appropriate ratings due to other impairments including respiratory impairment to determine whole person impairment'.

Ear, nose, throat and related structures impairment evaluation summary

6.15 Disregard AMA5 Table 11-10 (pp 272-275), except for impairment of olfaction and/or taste, and hearing impairment as determined in the WorkCover WA Guidelines.

7. Urinary and reproductive systems

Chapter 7, AMA5 (page 143) applies to the assessment of permanent impairment of the urinary and reproductive systems, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

7.1 AMA5 Chapter 7 (pp 143-171) provides clear details for assessment of the urinary and reproductive systems. Overall the chapter should be followed in assessing permanent impairment, with the variations included below.

7.2 For both male and female sexual dysfunction, identifiable pathology should be present for an impairment percentage to be given.

In evaluating the degree of permanent impairment of the worker for the purposes of common law (section 146C(6)), clause 18A(2aa)(a) (section 146E(3)), and specialised retraining programs (section 146D(3)), any secondary sexual condition should be disregarded. A secondary sexual condition is a condition that, although it may result from the injury or injuries concerned, arises as a secondary, or less direct, consequence of that injury or injuries.

The evaluation will not preclude sexual conditions where these conditions are a direct consequence of an injury (see Chapter 1 of the WorkCover WA Guidelines for specific examples).

Urinary diversion

7.3 AMA5 Table 7-2 (p 150) should be replaced with Table 7.1 below when assessing permanent impairment due to urinary diversion disorders. This table includes ratings for neobladder and continent urinary diversion.

7.4 Continent urinary diversion is defined as a continent urinary reservoir constructed of small or large bowel with a narrow catheterisable cutaneous stoma through which it must be emptied several times a day.

Table 7.1: Criteria for rating permanent impairment due to urinary diversion disorders

Diversion type	% Impairment of the whole person
Ureterointestinal	10%
Cutaneous ureterostomy	10%
Nephrostomy	15%
Neobladder/replacement cystoplasty	15%
Continent urinary diversion	20%

Bladder

7.5 AMA5 Table 7-3 (p 151) should be replaced with Table 7. 2 below when assessing permanent impairment due to bladder disease. This table includes ratings involving urge and total incontinence (defined in paragraph 7.8 of the WorkCover WA Guidelines).

Table 7.2: Criteria for rating permanent impairment due to bladder disease

Class 1 0%–15% impairment of the whole person	Class 2 16%–40% impairment of the whole person	Class 3 41%–70% impairment of the whole person
Symptoms and signs of bladder disorder and requires intermittent treatment and normal functioning between malfunctioning episodes	Symptoms and signs of bladder disorder e.g., urinary frequency (urinating more than every two hours); severe nocturia (urinating more than three times a night); urge incontinence more than once a week and requires continuous treatment	Abnormal (i.e. under- or over-) reflex activity (e.g., intermittent urine dribbling, loss of control, urinary urgency and urge incontinence once or more each day) and/or no voluntary control of micturition; reflex or areflexic bladder on urodynamics and/or total incontinence e.g., fistula

7.6 AMA5 example 7-16 (p 151) should be reclassified as an example of Class 2, as the urinary frequency is more than every two hours and continuous treatment would be expected.

Urethra

7.7 AMA5 Table 7-4 (p 153) should be replaced with Table 7.3 below when assessing permanent impairment due to urethral disease. This table includes ratings involving stress incontinence.

Table 7.3: Criteria for rating permanent impairment due to urethral disease

Class 1 0%–10% impairment of the whole person	Class 2 11%–20% impairment of the whole person	Class 3 21%–40% impairment of the whole person
Symptoms and signs of urethral disorder and requires intermittent therapy for control	Symptoms and signs of urethral disorder; stress urinary incontinence more than three times a week and cannot effectively be controlled by treatment	Urethral dysfunction resulting in intermittent urine dribbling, or stress urinary incontinence at least daily

Urinary incontinence

7.8 Urge urinary incontinence is the involuntary loss of urine associated with a strong desire to void. Stress urinary incontinence is the involuntary loss of urine occurring with clinically demonstrable raised intra-abdominal pressure. It is expected that urinary incontinence of a regular or severe nature (necessitating the use of protective pads or appliances) will be assessed as follows:

Stress urinary incontinence (demonstrable clinically):	11–25% according to severity
Urge urinary incontinence:	16–40% according to severity
Mixed (urge and stress) incontinence:	16–40% according to severity
Nocturnal enuresis or wet in bed:	16–40% according to severity
Total incontinence (continuously wet, e.g., from fistula):	50–70%

The highest scoring condition is to be used to assess impairment — combinations are not allowed.

Male reproductive organs

Penis

7.9 AMA5 (p 157): the box labelled 'Class 3, 21–35% impairment of the whole person'should read 'Class 3, 20% impairment of the whole person' as the descriptor 'no sexual function possible' does not allow a range. (The correct value is shown in AMA5 Table 7-5, p 156). Note, however, that there is a loading for age, so a rate higher than 20% is possible.

Testicles, epididymides and spermatic cords

7.10 AMA5 Table 7-7 (p 159) should be replaced with Table 7.4 below when assessing permanent impairment due to testicular, epididymal and spermatic cord disease. This table includes rating for infertility and equates impairment with female infertility (see Table 7.5, in the WorkCover WA Guidelines). Infertility in either sex must be considered to be of equal impact, age for age.

7.11 Male infertility is defined as azoospermia or other cause of inability to cause impregnation even with assisted contraception techniques.

7.12 Loss of sexual function related to spinal injury should only be assessed as an impairment where there is other objective evidence of spinal cord, cauda equina or bilateral nerve root dysfunction. The ratings described in Table 13-21 on p 342 of AMA5 are used in this instance. There is no additional impairment rating system for loss of sexual function in the absence of objective clinical findings.

Table 7.4: Criteria for rating permanent impairment due to testicular, epididymal and spermatic cord disease

Class 1 0%–10% impairment of the whole person	Class 2 11%–15% impairment of the whole person	Class 3 16%–35% impairment of the whole person
Testicular, epididymal or spermatic cord disease symptoms and signs and anatomic alteration and no continuous treatment required and no seminal or hormonal function or abnormalities or solitary testicle	Testicular, epididymal or spermatic cord disease symptoms and signs and anatomic alteration and cannot effectively be controlled by treatment and detectable seminal or hormonal abnormalities	Trauma or disease produces bilateral anatomic loss of the primary sex organs or no detectable seminal or hormonal function or infertility

Female reproductive organs

Fallopian tubes and ovaries

7.13 AMA5 Table 7-11 (p 167) should be replaced with Table 7.5 below when assessing permanent impairment due to fallopian tube and ovarian disease. This table includes rating for infertility and equates impairment with male infertility (see Table 7.4 above). Infertility in either sex must be considered to be of equal impact, age for age.

7.14 **Female infertility**: a woman in the childbearing age is infertile when she is unable to conceive naturally. This may be due to anovulation, tubal blockage, cervical or vaginal blocking or an impairment of the uterus.

Table 7.5: Criteria for rating permanent impairment due to fallopian tube and ovarian disease

Class 1 0%–15% impairment of the whole person	Class 2 16%–25% impairment of the whole person	Class 3 26%–35% impairment of the whole person
Fallopian tube or ovarian disease or deformity symptoms and signs do not require continuous treatment or only one functioning fallopian tube or ovary in the premenopausal period or bilateral fallopian tube or ovarian functional loss in the postmeno-pausal period	Fallopian tube or ovarian disease or deformity symptoms and signs require continuous treatment, but tubal patency persists and ovulation is possible	Fallopian tube or ovarian disease or deformity symptoms and signs and total tubal patency loss or failure to produce ova in the premeno-pausal period or bilateral fallopian tube or bilateral ovarian loss in the premenopausal period; infertility

8. Respiratory system

Chapter 5, AMA5 (page 87) applies to the assessment of permanent impairment of the respiratory system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

8.1 AMA5 Chapter 5 provides a useful summary of the methods for assessing permanent impairment arising from respiratory disorders.

8.2 The level of impairment arising from conditions that are not work related needs to be assessed by the AMS and taken into consideration in determining the level of permanent impairment. The level at which pre-existing conditions and lifestyle activities such as smoking contribute to the level of permanent impairment requires judgement on the part of the clinician undertaking the impairment assessment. The manner in which any deduction for these is applied needs to be recorded in the assessing specialist's report.

Examinations, clinical studies and other tests for evaluating respiratory disease (AMA5 Section 5.4)

8.3 AMA5 tables 5-2b, 5-3b, 5-4b, 5-5b, 5-6b and 5-7b (pp 95-100) give the lower limits of normal values for pulmonary function tests. These are used in Table 5-12 to determine the impairment classification for respiratory disorders.

8.4 Classes 2, 3 and 4 in Table 5-12 (p 107) list ranges of WPI. The AMS should nominate the nearest whole percentage based on the complete clinical circumstances when selecting within the range.

Asthma (AMA5 Section 5.5)

8.5 In assessing permanent impairment arising from occupational asthma, the AMS will require evidence from the treating physician that:

- at least three lung function tests have been performed over a six month period and that the results were consistent and repeatable over that period;
- the worker has received maximal treatment and is compliant with his/her medication regimen.

8.6 Bronchial challenge testing should not be performed as part of the impairment assessment, therefore in AMA5 Table 5-9 (p 104) ignore column four (PC_{20} mg/mol or equivalent, etc.).

8.7 Permanent impairment due to asthma is rated by the score for the best post-bronchodilator forced expiratory volume in one second (FEV1) (score in column 2, AMA5 Table 5-9) plus per cent of FEV1 (score in column 3) plus minimum medication required (score in column 5). The total score derived is then used to assess the percent impairment in AMA5 Table 5-10 (p 104).

Obstructive sleep apnoea (AMA5 Section 5.6)

8.8 This section needs to be read in conjunction with AMA5 Section 11.4 (p 259) and Section 13.3c (p 317).

8.9 Before permanent impairment can be assessed, the person must have appropriate assessment and treatment by an ear, nose and throat surgeon and a respiratory physician who specialises in sleep disorders.

8.10 Degree of permanent impairment due to sleep apnoea should be calculated with reference to AMA5 Table 13-4 (p 317).

Hypersensitivity pneumonitis (AMA5 Section 5.7)

8.11 Permanent impairment arising from disorders included in this section are assessed according to the impairment classification in AMA5 Table 5-12 (p 107).

Pneumoconiosis (AMA5 Section 5.8)

8.12 Pneumoconiosis is assessed in accordance with the directions in this chapter dealing with the assessment of pneumoconiosis, mesothelioma or lung cancer referred to in section 33 or 34 of the Act.

Lung cancer (AMA5 Section 5.9)

8.13 Permanent impairment due to lung cancer should be assessed at least six months after surgery. Table 5-12 (AMA5 p107) (not Table 5-11) should be used for assessment of permanent impairment.

8.14 Persons with residual lung cancer after treatment are classified in respiratory impairment Class 4 (Table 5-12) (AMA5 p 107).

Permanent impairment due to respiratory disorders (AMA5 Section 5.10)

8.15 Table 5-12 (p 107 AMA5) should be used to assess permanent impairment for respiratory disorders. The pulmonary function tests listed in Table 5-12 must be performed under standard conditions. Exercise testing is not required on a routine basis.

8.16 An isolated abnormal diffusing capacity for carbon monoxide (DCO) in the presence of otherwise normal results of lung function testing should be interpreted with caution and its aetiology should be clarified.

Pneumoconiosis, mesothelioma, or lung cancer

8.17 Permanent impairment due to a disease mentioned in section 33 or 34 of the Act is to be assessed in accordance with Chapter 5 of AMA5.

8.18 In accordance with section 93R of the Act, if damages are sought or to be sought in respect of a disease referred to in section 33 or 34, any assessment to evaluate the worker's degree of permanent WPI resulting from the disease as described in sections 146A and 146C is to be made, not by an AMS as stated in section 146A(2), but by a medical panel constituted as described in section 36 (i.e. the Industrial Diseases Medical Panel).

8.19 This does not prevent the evaluation of the worker's degree of permanent WPI being settled by agreement.

8.20 A person seeking an assessment may advise the Chief Executive Officer of WorkCover WA, in accordance with any relevant regulation, and the Chief Executive Officer is to arrange for a medical panel to be constituted to make the assessment and refer the making of the assessment sought to the panel.

8.21 Section 36(3), section 37, and section 38(1) and (3) apply for a reference under this section as they would for a reference under section 36 except that what is to be considered and determined is the assessment referred under this section instead of the questions that arise on a reference under section 36.

8.22 Even though the worker's condition is not required to have stabilised, the evaluation is not a special evaluation as referred to in section 146C.

8.23 There is no termination day for an election to retain the right to seek damages in respect of a disease described in sections 33 or 34.

8.24 A medical panel from which an assessment is sought is not bound by a previous assessment if the previous assessment has not been recorded by the Director under section 93L(2).

8.25 If the Director records an assessment under section 93L(2):

- any reference in this Subdivision to the worker's degree of permanent WPI is to be taken to be a reference to the worker's degree of permanent WPI as evaluated in the assessment recorded; and
- section 93K(13) and section 93L do not apply.

9. Hearing

Chapter 11, AMA5 (page 245) applies to the assessment of permanent impairment of hearing, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing.
- The National Acoustic Laboratory Guide.

The WorkCover WA Guidelines take precedence over AMA5.

Assessment of hearing impairment (hearing loss)

9.1 For the purposes of sections 24A and 31E and Schedule 7 to the Act, noise induced hearing loss will continue to be assessed and calculated in accordance with those provisions and will not need to be evaluated by an AMS in accordance with the WorkCover WA Guidelines. The directions hereunder should be applied in relation to any other type of hearing impairment that results from an "injury" (as defined in section 5 of the Act).

9.2 A worker may present for assessment of hearing loss for compensation purposes before having undergone all or any of the health investigations that generally occur before assessment of permanent impairment. For this reason and to ensure that conditions other than 'occupational hearing impairment' are precluded, the medical assessment should be undertaken by an ear, nose and throat specialist or other appropriately qualified medical specialist. The medical assessment needs to be undertaken in accordance with the hearing impairment section of AMA5 Table 11-10 (pp 272-275). The medical specialist performing the assessment must examine the worker. The medical specialist's assessment must be based on medical history and ear, nose and throat examination, evaluation of relevant audiological tests and evaluation of other relevant investigations available. Only medical specialists can sign medical reports.

9.3 Disregard AMA5 sections 11.1b and 11.2 (pp 246-255), but retain Section 11.1a (interpretation of symptoms and signs, p 246).

9.4 Some of the relevant tests are discussed in AMA5 hearing impairment evaluation summary Table 11-10 (pp 272-275). The relevant row for the WorkCover WA Guidelines is the one headed 'hearing impairment'with the exception of the last column headed 'degree of impairment'. The degree of impairment is determined according to the WorkCover WA Guidelines.

9.5 The level of hearing impairment caused by non-work-related conditions is assessed by the medical specialist and considered when determining the level of work-related hearing impairment. While this requires medical judgement on the part of the examining medical specialist, any non-workrelated deductions should be recorded in the report.

9.6 Disregard AMA5 tables 11-1, 11-2, 11-3 (pp 247-250). For the purposes of the WorkCover WA Guidelines, National Acoustic Laboratory (NAL) tables from the NAL Report no.118, 'improved procedure for determining percentage loss of hearing' (January 1988) are adopted as follows:

- Tables RB 500–4000 (pp 11–16)
- Tables RM 500–4000 (pp 18–23)
- Appendix 1 and 2 (pp 8–9)
- Appendix 5 and 6 (pp 24–26)
- Tables EB 4000–8000 (pp 28–30) (the extension tables)
- Table EM 4000–8000 (pp 32–34) (the extension tables)

Where an AMS uses the extension tables, they must provide an explanation of the worker's "special requirement to be able to hear at frequencies above 4000Hz." (NAL Report no.118, p 6).

In the presence of significant conduction hearing loss, the extension tables do not apply.

AMA5 Table 11-3 is replaced by Table 9.1 at the end of this chapter.

Hearing impairment

9.7 Impairment of a worker's hearing is determined according to evaluation of the individual's binaural hearing impairment.

9.8 Permanent hearing impairment should be evaluated when the condition is stable. Prosthetic devices (that is, hearing aids) must not be worn during the evaluation of hearing sensitivity.

9.9 Hearing threshold level for pure tones is defined as the number of decibels above standard audiometric zero 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 that is calibrated according to Australian Standard AS 2586-1983.

9.10 Evaluation of binaural hearing impairment is determined by using the tables in the 1988 NAL publication with allowance for presbyacusis according to the presbyacusis correction table, if applicable, in the same publication.

The binaural tables RB 500-4000 (NAL Report no.118, pp 11-16) are to be used. The extension tables EB 4000-8000 (pp 28-30) may be used when the worker has a "special requirement to be able to hear at frequencies above 4000Hz" (NAL Report no.118, p 6). Where an AMS uses the extension tables, they must provide an explanation of the worker's special requirement to be able to hear at frequencies above 4000Hz. For the purposes of calculating binaural hearing impairment, the better and worse ear may vary as between frequencies.

Where it is necessary to use the monaural tables, the binaural hearing impairment (BHI) is determined by the formula:

$$\text{BHI} = \frac{[4 \times (\text{better ear hearing loss})] + \text{worse ear hearing loss}}{5}$$

9.11 **Presbyacusis correction** (NAL publication, p 24) only applies to occupational hearing loss contracted by gradual process (eg occupational noise induced hearing loss and/or occupational solvent induced hearing loss). Please note when calculating by formula for presbyacusis correction (e.g. when the worker is above 81 years), use the formula at appendix 6 at line 160 (NAL publication, p 26) which uses the correct number of 1.79059. Note: there is a typographical error at Table P on p 25 of the NAL publication, with the number 1.79509 incorrectly used.

9.12 **Binaural hearing impairment and severe tinnitus:** Once binaural hearing loss has been assessed, up to 5% may be added to the work-related binaural hearing impairment for severe tinnitus caused by a work-related injury:

- after presbyacusis correction, if applicable;
- before determining WPI.

Assessment of severe tinnitus is based on a medical specialist's assessment.

9.13 **Only hearing ear:** A worker has an 'only hearing ear' if he or she has suffered a non-work-related severe or profound sensorineural hearing loss in the other ear. If a worker suffers a work-related injury causing a hearing loss in the only hearing ear of x dBHL at a relevant frequency, the worker's work-related binaural hearing impairment at that frequency is calculated from the binaural tables using x dB as the hearing threshold level in both ears. Deduction for presbyacusis if applicable and addition for severe tinnitus is undertaken according to the WorkCover WA Guidelines.

9.14 When necessary, binaural hearing impairment figures should be rounded to the nearest 0.1%. Rounding up should occur if equal to or greater than 0.05%, and rounding down should occur if equal to or less than 0.04%.

9.15 Table 9.1 is used to convert binaural hearing impairment, after deduction for presbyacusis if applicable and after addition for severe tinnitus, to WPI.

9.16 The method of subtracting a previous impairment for noise induced hearing loss, where the previous impairment was not assessed in accordance with the WorkCover WA Guidelines, is as shown in the following example:

- The current level of binaural hearing impairment is established by the relevant specialist. Convert this to WPI from Table 9.1 in the WorkCover WA Guidelines.
- Calculate the proportion of the current binaural hearing impairment that was accounted for by the earlier assessment and express it as a percentage of the current hearing impairment.
- The percentage of current hearing impairment that remains is the amount to be compensated.
- This needs to be expressed in terms of WPI for calculation of compensation entitlement.

Example:

- The current binaural hearing loss is 8%.
- The WPI is 4%.
- The binaural hearing impairment for which compensation was paid previously is 6%, which is 75% of the current binaural hearing impairment of 8%.
- The remaining percentage, 25%, is the percentage of WPI to be compensated.
- 25% of the WPI of 4% is 1% WPI.

Table 9.1: Relationship of binaural hearing impairment to whole person impairment

% Binaural hearing impairment	% Whole person impairment	% Binaural hearing impairment	% Whole person impairment
0.0–5.9	0	51.1–53.0	26
		53.1–55.0	27
6.0–6.7	3	55.1–57.0	28
6.8–8.7	4	57.1–59.0	29
8.8–10.6	5	59.1–61.0	30
10.7–12.5	6	61.1–63.0	31
12.6–14.4	7	63.1–65.0	32
14.5–16.3	8	65.1–67.0	33
16.4–18.3	9	67.1–69.0	34
18.4–20.4	10	69.1–71.0	35
20.5–22.7	11	71.1–73.0	36
22.8–25.0	12	73.1–75.0	37
25.1–27.0	13	75.1–77.0	38
27.1–29.0	14	77.1–79.0	39
29.1–31.0	15	79.1–81.0	40
31.1–33.0	16	81.1–83.0	41
33.1–35.0	17	83.1–85.0	42
35.1–37.0	18	85.1–87.0	43
37.1–39.0	19	87.1–89.0	44
39.1–41.0	20	89.1–91.0	45
41.1–43.0	21	91.1–93.0	46
43.1–45.0	22	93.1–95.0	47
45.1–47.0	23	95.1–97.0	48
47.1–49.0	24	97.1–99.0	49
49.1–51.0	25	99.1–100	50

9.17 AMA5 examples 11.1, 11.2, 11.3 (pp 250-251) are to be disregarded.

Example 9.1: Occupational hearing loss from head injury

A 62-year-old male worker sustained a head injury after falling from a ladder. He suffered left hearing loss and tinnitus unaccompanied by vertigo. The assessing medical specialist assesses his tinnitus as severe. External auditory canals and tympanic membranes are normal. Rinne test is positive bilaterally and Weber test lateralises to the right. CT scan of the temporal bones shows a fracture on the left. Clinical assessment of hearing is consistent with pure tone audiometry, which shows a flat left sensorineural hearing loss and mild right sensorineural hearing loss.

Pure tone audiometry

Frequency (Hz)	Left (dB HL)	Right (dB HL)	Binaural hearing impairment (%BHI)
500	50	15	2.3
1000	55	15	3.1
1500	60	20	3.4
2000	65	20	2.6
3000	65	25	2.2
4000	65	30	2.1
6000	65	20	–
8000	65	20	–
Total %BHI			15.7
No correction for presbyacusis applies			–
Add 5.0% for severe tinnitus			20.7
Adjusted total BHI			20.7
Resultant total BHI of 20.7% = 11% WPI (Table 9.1)			

Example 9.2: Occupational noise-induced hearing loss with acute occupational hearing loss

A 65-year-old production worker for 10 years was injured in an explosion at work. He reported immediate post injury otalgia and acute hearing loss in the left ear. The assessing medical specialist diagnosed occupational noise-induced hearing loss and left acute acoustic trauma. The assessing medical specialist had no medical evidence that, immediately before the explosion, the hearing in the left ear was significantly different from that in the right ear.

Pure tone audiometry

Frequency (Hz)	Left (dB HL)	Right (dB HL)	Binaural hearing impairment (%BHI)	BHI due to noise-induced hearing loss
500	30	15	1.0	0.0
1000	45	15	2.5	0.0
1500	55	15	2.5	0.0
2000	70	15	2.2	0.0
3000	80	25	2.4	0.7
4000	80	30	2.3	0.8
6000	>80	30	–	–
8000	>80	25	–	–
Total BHI (%)			12.9	
Occupational noise-induced BHI(%) before presbyacusis correction				1.5
Occupational noise-induced BHI(%) after presbyacusis correction of 2.4%				0
Acute acoustic trauma BHI (%)			11.4	
Presbyacusis does not apply to acute acoustic trauma			–	
Resultant total BHI due to acute acoustic trauma of 11.4% = 6% WPI (Table 9.1)				

10. The visual system

Chapter 8, AMA4 (page 209) applies to the assessment of permanent impairment of the visual system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA4 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA4 and AMA5.

Introduction and approach to assessment

10.1 Under section 146G(1)(d), an AMS should require the worker to submit to examination and testing by an ophthalmologist and ensure the ophthalmologist examines and tests the worker in accordance with AMA4. This information is to be provided to the AMS and will be taken into consideration with any other provision in the Act or the WorkCover WA Guidelines in the assessment of the worker.

10.2 Chapter 8 (pp 209-222) of AMA4 are adopted for the WorkCover WA Guidelines without significant change.

10.3 AMA4 is used rather than AMA5 for the assessment of permanent impairment of the visual system because:

- the equipment recommended for use in AMA5 is expensive and not owned by most privately practising ophthalmologists (eg the Goldman apparatus for measuring visual fields);
- the assessments recommended in AMA5 are considered too complex, raising a risk that resulting assessments may be of a lower standard than if the AMA4 method was used;
- there is little emphasis on diplopia in AMA5, yet this is a relatively frequent problem;
- many ophthalmologists are familiar with the Royal Australian College of Ophthalmologists' impairment guide, which is similar to AMA4.

10.4 Impairment of vision should be measured with the injured worker wearing their prescribed corrective spectacles and/or contact lenses, if that was normal for the injured worker before the workplace injury. If, as a result of the workplace injury, the injured worker has been prescribed corrective spectacles and/or contact lenses for the first time, or different spectacles and/or contact lenses than those prescribed before injury, the difference should be accounted for in the assessment of permanent impairment.

10.5 The ophthalmologist should perform, or review, all tests necessary for the assessment of permanent impairment rather than relying on tests, or interpretations of tests, done by the orthoptist or optometrist.

10.6 An ophthalmologist should assess visual field impairment in all cases.

10.7 In AMA4 Section 8.5, 'other conditions' (p 222), the 'additional 10% impairment' referred to means 10% WPI, not 10% impairment of the visual system.

11. Psychiatric and psychological disorders

AMA5 Chapter 14 is excluded and replaced by this chapter. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following (in this order):

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing

The WorkCover WA Guidelines replace the Psychiatric and Psychological chapter in AMA5.

Introduction

11.1 This chapter lays out the method for assessing psychiatric impairment. The evaluation of impairment requires a medical examination.

11.2 Under section 146G(1)(d) an AMS should require the worker to submit to examination and assessment by a psychiatrist. Evaluation of psychiatric impairment is conducted by a psychiatrist who has undergone appropriate training in this assessment method.

11.3 In evaluating the degree of permanent impairment of the worker for the purposes of common law (section 146C(6)), clause 18A (section 146E(3)), and specialised retraining programs (section 146D(3)), any secondary psychological or psychiatric condition is to be disregarded. A secondary psychological or psychiatric condition is a condition, that, although it may result from the injury or injuries concerned, arises as a secondary, or less direct, consequence of that injury or injuries. The evaluation will not preclude psychological, psychiatric conditions where these conditions are a direct consequence of an injury, an example of which would be psychiatric condition experienced by a bank teller as a result of a hold up (refer to Chapter 1 of the WorkCover WA Guidelines for examples).

Diagnosis

11.4 The impairment rating must be based upon a psychiatric diagnosis (according to a recognised diagnostic system) and the report must specify the diagnostic criteria upon which the diagnosis is based. Impairment arising from any of the somatoform disorders (DSM IV TR, pp 485-511) are excluded from this chapter.

11.5 If pain is present as the result of an organic impairment, it should be assessed as part of the organic condition under the relevant table. This does not constitute part of the assessment of impairment relating to the psychiatric condition. The impairment ratings in the body organ system chapters in AMA5 make allowance for any accompanying pain.

11.6 It is expected that the psychiatrist will provide a rationale for the rating based on the injured worker's psychiatric symptoms. The diagnosis is among the factors to be considered in assessing the severity and possible duration of the impairment, but is not the sole criterion to be used. Clinical assessment of the person may include information from the injured worker's own description of his or her functioning and limitations, from family members and others who may have knowledge of the person. Medical reports, feedback from treating professionals, results of standardised tests, including appropriate psychometric testing performed by a qualified clinical psychologist, and work evaluations may provide useful information to assist with the assessment.

Evaluation of impairment will need to take into account variations in the level of functioning over time. Percentage impairment refers to 'whole person impairment'.

Permanent impairment

11.7 A psychiatric disorder is permanent, if in your clinical opinion, it is likely to continue indefinitely. Regard should be given to:

- the duration of impairment;
- the likelihood of improvement in the injured workers'condition;
- whether the injured worker has undertaken reasonable rehabilitative treatment;
- any other relevant matters.

Effects of treatment

11.8 Consider the effects of medication, treatment and rehabilitation to date. Is the condition stable? Is treatment likely to change? Are symptoms likely to improve? If the injured worker declines treatment, this should not affect the estimate of permanent impairment. The psychiatrist may make a comment in the report about the likely effect of treatment or the reasons for refusal of treatment.

Co-morbidity

11.9 Consider co-morbid features (e.g. bi-polar disorder, personality disorder, substance abuse) and determine whether they are directly linked to the work-related injury or whether they were pre-existing or unrelated conditions.

Pre-existing impairment

11.10 To measure the impairment caused by a work-related injury or incident, the psychiatrist must measure the proportion of WPI due to a pre-existing condition. Pre-existing impairment is calculated using the same method for calculating current impairment level. The assessing psychiatrist uses all available information to rate the injured worker's pre-injury level of functioning in each of the areas of function. The percentage impairment is calculated using the aggregate score and median class score using the conversion table below.

The injured worker's current level of impairment is then assessed, and the pre-existing impairment level (%) is then subtracted from their current level to obtain the percentage of permanent impairment directly attributable to the work-related injury. If the percentage pre-existing impairment cannot be assessed, then no deduction is to be made.

Psychiatric impairment rating scale (PIRS)

11.11 Behavioural consequences of psychiatric disorder are assessed on six scales, each of which evaluates an area of functional impairment:

1. Self care and personal hygiene (Table 11.1)
2. Social and recreational activities (Table 11.2)

} Activities of daily living

3. Travel (Table 11.3)
4. Social functioning (relationships) (Table 11.4)
5. Concentration, persistence and pace (Table 11.5)
6. Employability (Table 11.6)

11.12 Impairment in each area is rated using class descriptors. Classes range from 1 to 5, in accordance with severity. The standard form must be used when scoring the PIRS. The examples of activities are examples only. The assessing psychiatrist should take account of the person's cultural background. Consider activities that are usual for the person's age, sex and cultural norms.

Table 11.1: Psychiatric impairment rating scale — Self care and personal hygiene

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population
Class 2	Mild impairment: able to live independently; looks after self adequately, although may look unkempt occasionally; sometimes misses a meal or relies on take-away food.
Class 3	Moderate impairment: Can't live independently without regular support. Needs prompting to shower daily and wear clean clothes. Does not 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 11.2: Psychiatric impairment rating scale — Social and recreational activities

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population: regularly participates in social activities that are age, sex and culturally appropriate. May belong to clubs or associations and is actively involved with these.
Class 2	Mild impairment: occasionally goes out to such events without needing a support person, but does not become actively involved (eg, dancing, cheering favourite team).
Class 3	Moderate impairment: rarely goes out to such events, and mostly when prompted by family or close friend. Will not 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 come to visit family or flat mate.
Class 5	Totally impaired. Cannot tolerate living with anybody, extremely uncomfortable when visited by close family member.

Table 11.3: Psychiatric impairment rating scale — Travel

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population: Can travel to new environments without supervision.
Class 2	Mild impairment: can travel without support person, but only in a familiar area such as local shops, visiting a neighbour.
Class 3	Moderate impairment: cannot 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 trusted person.
Class 5	Totally impaired: may require two or more persons to supervise when travelling.

Table 11.4: Psychiatric impairment rating scale — Social functioning

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population: No difficulty in forming and sustaining relationships (eg, 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 by periods of separation or domestic violence. Spouse, relatives or community services looking after children.
Class 4	Severe impairment: unable to form or sustain long term relationships. Pre-existing relationships ended (eg, lost partner, close friends). Unable to care for dependants (eg, own children, elderly parent).
Class 5	Totally impaired: unable to function within society. Living away from populated areas, actively avoiding social contact.

Table 11.5: Psychiatric impairment rating scale — Concentration, persistence and pace

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population. Able to 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 periods of up to 30 minutes, then feels fatigued or develops headache.
Class 3	Moderate impairment: unable to read more than newspaper articles. Finds it difficult to follow complex instructions (eg, operating manuals, building plans), make significant repairs to motor vehicle, type long 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 institutional setting.

Table 11.6: Psychiatric impairment rating scale — Employability

Class 1	No deficit, or minor deficit attributable to the normal variation in the general population. Able to work full time. Duties and performance are consistent with the injured worker'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 but in a different environment from that of the pre-injury job. The duties require comparable skill and intellect as those of the pre-injury job. Can work in the same position, but no more than 20 hours per week (eg, no longer happy to work with specific persons, or work in a specific location due to travel required).
Class 3	Moderate impairment: cannot work at all in same position. Can perform less than 20 hours per week in a different position, which requires less skill or is qualitatively different (eg, less stressful).
Class 4	Severe impairment: cannot work more than one or two days at a time, less than 20 hours per fortnight. Pace is reduced, attendance is erratic.
Class 5	Totally impaired. Cannot work at all.

Using the PIRS to measure impairment

11.13 Rating psychiatric impairment using the PIRS is a two-step procedure:

1. Determine the median class score.
2. Calculate the aggregate score.

Determining the median class score

11.14 Each area of function described in the PIRS is given an impairment rating which ranges from Class 1 to 5. The six scores are arranged in ascending order, using the standard form. The median is then calculated by averaging the two middle scores eg:

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

*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.

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

Median class score and percentage impairment

11.16 Each median class score represents a range of impairment, as shown below:

- Class 1 = 0–3%
- Class 2 = 4–10%
- Class 3 = 11–30%
- Class 4 = 31–60%
- Class 5 = 61–100%

Calculation of the aggregate score

11.17 The aggregate score is used to determine an exact percentage of impairment within a particular median class range. The six class scores are added to give the aggregate score.

Use of the conversion table to arrive at percentage impairment

11.18 The aggregate score is converted to a percentage score using the conversion table (Table 11.7 below).

11.19 The conversion table was developed to calculate the percentage impairment based on the aggregate and median scores.

11.20 The scores within the conversion table are spread in such a way to ensure that the final percentage rating is consistent with the measurement of permanent impairment percentages for other body systems.

Table 11.7: Conversion table

Aggregate score

% Impairment	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 obtained is: 1+1+1+1+1+1=6.
- The highest aggregate score is 5+5+5+5+5+5= 30.
- The table therefore has aggregate scores ranging from six to 30.
- Each median class score has an impairment range, and a range of possible aggregate scores (eg class 3 = 11-30%).
- The lowest aggregate score for class 3 is 13 (1 + 1 + 2 + 3 + 3 + 3 = 13).
- The highest aggregate score for class 3 is 22 (3 + 3 + 3 + 3 + 5 + 5 = 22).
- The conversion table distributes the impairment percentages across aggregate scores.

b. Same aggregate score in different classes

- The conversion table shows that the same aggregate score leads to different percentages of impairment in 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,
  - 34% in Class 4.
- This is due to the fact that an injured worker whose impairment is in median class 2 is likely to have a lower score across most areas of function. They may be significantly impaired in one aspect of their life, such as travel, yet have low impairment in social function, self-care or concentration.
- Someone whose impairment reaches median class 4 will experience significant impairment across most aspects of his or her life.

Examples: (Using the previous cases)

Example A

PIRS scores **Median class**

1	2	**3**	**3**	4	5	= 3

Aggregate score **Total % Impairment**

1 +	2 +	3 +	3 +	4 +	5 =	18	22%

Example B

PIRS scores **Median class**

1	2	**2**	**3**	3	4	= 3

Aggregate score **Total % Impairment**

1 +	2 +	2 +	3 +	3 +	4 =	15	15%

Example C

PIRS scores **Median class**

1	2	**3**	**5**	5	5	= 4

Aggregate score **Total % Impairment**

1 +	2 +	3 +	5 +	5 +	5 =	21	44%

Table 11.8: PIRS rating form

Name		Claim reference number	
D.O.B.		Age at time of injury	
Date of injury		Occupation before injury	
Date of assessment		Marital status before injury	

Psychiatric diagnoses	1.	2.
	3.	4.
Psychiatric treatment		
Is impairment permanent?	Yes No (Circle one)	

PIRS category	Class	Reason for decision
Self care and personal hygiene		
Social and recreational activities		
Travel		
Social functioning		
Concentration, persistence and pace		
Employability		

Score Class						Median
						=

Aggregate Score						Total	%
+	+	+	+	+	+	=	
Impairment (%WPI) from Table 11.7							
Less pre existing impairment (if any)							
Final Impairment (%WPI)							

12. Haematopoietic system

Chapter 9, AMA5 (page 191) applies to the assessment of permanent impairment of the haematopoietic system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

12.1 AMA5 Chapter 9 (pp 191-210) provides guidelines on the method of assessing permanent impairment of the haematopoietic system. Overall, that chapter should be followed when conducting the assessment, with variations indicated below.

12.2 Impairment of end organ function due to haematopoietic disorder should be assessed separately, using the relevant chapter of the WorkCover WA Guidelines. The percentage WPI due to end organ impairment should be combined with any percentage WPI due to haematopoietic disorder, using the combined values table (pp 604-606 AMA5).

Anaemia

12.3 Table 12.1 (below) replaces AMA5 Table 9–2 (p 193).

Table 12.1: Classes of anaemia and percentage whole person impairment

Class 1: 0–10% WPI	Class 2: 11–30% WPI	Class 3: 31–70% WPI	Class 4: 71–100% WPI
No symptoms and haemoglobin 100–120g/L and no transfusion required	Minimal symptoms and haemoglobin 80–100g/L and no transfusion required	Moderate to marked symptoms and haemoglobin 50–80g/L before transfusion and transfusion of 2 to 3 units required, every 4 to 6 weeks	Moderate to marked symptoms and haemoglobin 50–80g/L before transfusion and transfusion of 2 to 3 units required, every 2 weeks

12.4 The AMS should exercise clinical judgement in determining WPI, using the criteria in Table 12.1. For example, if comorbidities exist which preclude transfusion, the AMS may assign Class 3 or Class 4, on the understanding that transfusion would under other circumstances be indicated. Similarly, there may be some claimants with Class 2 impairment who, because of comorbidity, may undergo transfusion.

12.5 Pre-transfusion haemoglobin levels in Table 12.1 are to be used as indications only. It is acknowledged that for some claimants, it would not be medically advisable to permit the claimant's haemoglobin levels to be as low as indicated in the criteria of Table 12.1.

12.6 The AMS should indicate a percentage WPI, as well as the class.

Polycythaemia and myelofibrosis

12.7 The level of symptoms (as in Table 12.1) should be used a guide for the AMS in cases where non-anaemic tissue iron deficiency results from venesection.

White blood cell diseases

12.8 In cases of functional asplenia, the AMS should assign 3% WPI. This should be combined with any other impairment rating, using the combined values table (pp 604-606 AMA5).

AMA5 Table 9–3 (p 200) should not be used for rating impairment due to HIV infection or auto immune deficiency disease. An impairment evaluation is not required by an AMS for these diseases. For each of the purposes for which an impairment assessment may be obtained, there is no entitlement for HIV infection. A worker who has contracted AIDS in the course of employment is deemed to have 100% impairment under Item 82 of Part 2 of Schedule 2 of the Act. If the worker is obtaining an assessment for common law, the worker will be deemed to have at least 25% WPI under section 93Q(3) of the Act for the purposes of making an election to seek damages at common law. An AMS is not required to assess a worker's degree of impairment, however the worker will require certification from a medical practitioner to the effect that the worker has contracted AIDS.

Haemorrhagic and platelet disorders

12.9 AMA5 Table 9-4 (p 203) is to be used as the basis for assessing haemorrhagic and platelet disorders.

12.10 For the purposes of the WorkCover WA Guidelines, the criteria for inclusion in Class 3 of AMA5 Table 9-4 (p 203) is:

- symptoms and signs of haemorrhagic and platelet abnormality;
- requires continuous treatment;
- interference with daily activities; requires occasional assistance.

12.11 For the purposes of the WorkCover WA Guidelines, the criteria for inclusion in Class 4 of AMA5 Table 9-4 (p 203) is:

- symptoms and signs of haemorrhagic and platelet abnormality;
- requires continuous treatment;
- difficulty performing daily activities; requires continuous care.

Thrombotic disorders

12.12 AMA5 Table 9-4 (p 203) is used as the basis for determining impairment due to thrombotic disorder.

13. The endocrine system

Chapter 10, AMA5 (page 211) applies to the assessment of permanent impairment of the endocrine system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing.

The WorkCover WA Guidelines take precedence over AMA5

Introduction

13.1 AMA5 Chapter 10 provides a useful summary of the methods for assessing permanent impairment arising from disorders of the endocrine system.

13.2 Refer to other chapters in AMA5 for related structural changes - the skin (e.g. pigmentation in Chapter 8), the central and peripheral nervous system (e.g. memory, in Chapter 13), the urinary and reproductive system (e.g. infertility, renal impairment, in Chapter 7), the digestive system (e.g. dyspepsia, in Chapter 6), the cardiovascular system (in Chapters 3 and 4) and the visual system (Chapter 8 AMA4).

13.3 The clinical findings to support the impairment assessment are to be reported in the units recommended by the Royal College of Pathologists of Australia. (See Appendix 13.1).

13.4 Westergren erythrocyte sedimentation rate (WSR) is equivalent to ESR.

Adrenal cortex

13.5 AMA5 (p 222) first paragraph: disregard the last sentence, 'they also affect inflammatory response, cell membrane permeability, and immunologic responses, and they play a role in the development and maintenance of secondary sexual characteristics'. Replace with: 'immunological and inflammatory responses are reduced by these hormones and they play a role in the development and maintenance of secondary sexual characteristics'.

13.6 AMA5 example 10-18 (pp 224-225): see reference to ESR (13.4 above).

13.7 AMA5 example 10-20 (p 225): History: for 'hypnotic bladder' read 'hypotonic bladder'.

Diabetes mellitus

13.8 AMA5 (p 231): refer to the *Australian Diabetes Association Guidelines* with regard to levels of fasting glucose. (Position statement from the Australian Diabetes Society, reprinted in Appendix 13.2).

13.9 AMA5 (p 231): insert at the end of the second paragraph: 'the goal of treatment is to maintain haemoglobin A1c within 1% of the normal range (4.0-6.3%)'.

Mammary glands

13.10 AMA5 example 10-45 (p 239), current symptoms: disregard the last sentence, 'both bromocriptine and cabergoline cause nausea, precluding use of either drug'and replace with: 'routine use of bromocriptine and cabergoline is normal in Australia. It is rare that nausea precludes their use'.

Criteria for rating permanent impairment due to metabolic bone disease

13.11 AMA5 (p 240): impairment due to a metabolic bone disease itself is unlikely to be associated with a work-related injury and would usually represent a pre-existing condition.

13.12 Impairment from fracture, spinal collapse or other complications may arise as a result of a work injury associated with these underlying conditions (as noted in AMA5, Section 10.10c) and would be assessed using the other chapters indicated, with the exception of Chapter 18 (pain) which is excluded from the WorkCover WA Guidelines.

Appendix 13 .1: Interpretation of pathology tests

From *Manual of use and interpretation of pathology tests,* third edition. Reprinted with kind permission of the Royal College of Pathologists of Australasia.

Reference ranges, plasma or serum, unless otherwise indicated		
Alanine aminotransferase (ALT)	(adult)	< 35 U/L
Albumin	(adult)	32–45 g/L
Alkaline phosphatase (ALP)	(adult, non-pregnant)	25–100 U/L
Alpha fetoprotein	(adult, non-pregnant)	<10 µg/L
Alpha-1-antitrypsin		1.7–3.4 g/L
Anion gap		8–16 mmol/L
Aspartate aminotransferase (AST)		< 40 U/L
Bicarbonate (total CO_2)		22–32 mmol/L
Bilirubin (total)	(adult)	< 20 µmol/L
Calcium	(total)	2.10–2.60 mmol/L
	(ionised)	1.17–1.30 mmol/L
Chloride		95–110 mmol/L
Cholesterol (HDL)	(male)	0.9–2.0 mmol/L
	(female)	1.0–2.2 mmol/L
Cholesterol (total) *(National Heart Foundation [Australia] recommendation)*		< 5.5 mmol/L
Copper		13–22 µmol/L
Creatine kinase (CK)	(male)	60–220 U/L
	(female)	30–180 U/L
Creatinine	(adult male)	0.06–0.12 mmol/L
	(adult female)	0.05–0.11 mmol/L
Gamma glutamyl transferase (GGT)	(male)	< 50 U/L
	(female)	< 30 U/L
Globulin	adult	25–35g/L
Glucose	(venous plasma) - (fasting) (venous plasma) - (random)	3.0–5.4 mmol/L 3.0–7.7 mmol/L
Lactate dehydrogenase (LD)	(adult)	110–230 U/L
Magnesium	(adult)	0.8–1.0 mmol/L
Osmolality	(adult)	280–300 m.osmoll/kg water

Reference ranges, plasma or serum, unless otherwise indicated (continued)		
pCO^2	(arterial blood)	4.6–6.0 kPa (35–45 mmHg)
pH	(arterial blood)	7.36–7.44 (36–44 nmol/L)
Phosphate		0.8–1.5 mmol/L
pO^2	(arterial blood)	11.0–13.5 kPa (80–100 mmHg)
Potassium	(plasma)	3.4–4.5 mmol/L
	(serum)	3.8–4.9 mmol/L
Prolactin	(male)	150–500 mU/L
	(female)	0–750 mU/L
Protein, total	(adult)	62–80 g/L
Sodium		135–145 mmol/L
Testosterone and related androgens	*See* Table A (below)	

Therapeutic intervals		
Amitriptyline	150–900 nmol/L	60–250 µg/L
Carbamazepine	20–40 µmol/L	6–12 mg/L
Digoxin	0.6–2.3 nmol/L	0.5–1.8 µg/L
Lithium	0.6–1.2 mmol/L	
Nortriptyline	200–650 nmol/L	50–170 µg/L
Phenobarbitone	65–170 µmol/L	15–40 mg/L
Phenytoin	40–80 µmol/L	10–20 mg/L
Primidone	22–50 µmol/L	4.8–11.0 mg/L
Procainamide	17–42 µmol/L	4–10 mg/L
Quinidine	7–15 µmol/L	2.3–4.8 mg/L
Salicylate	1.0–2.5 mmol/L	140–350 mg/L
Theophylline	55–110 µmol/L	10–20 mg/L
Valproate	350–700 µmol/L	50–100 mg/L
Thyroid stimulating hormone (TSH)		0.4–5.0 mIU/L
Thyroxine (free)		10–25 pmol/L
Triglycerides (fasting)		< 2.0 mmol/L
Triiodothyronine (free)		4.0–8.0 pmol/L
Urate	(male)	0.20–0.45 mmol/L
	(female)	0.15–0.40 mmol/L
Urea	(adult)	3.0–8.0 mmol/L
Zinc		12–20 µmol/L

Table A: Reference intervals for testosterone and related androgens (serum)

	Male		Female	
	Pre-pubertal	Adult (age related)	Pre-pubertal	Adult (age related)
Free testosterone (pmol/L)		170–510		< 4.0
Total testosterone (nmol/L)	< 0.5	8–35	< 0.5	< 4.0
SHBG (nmol/L)	55–100	10–50	55–100	30–90 (250–500 in the 3rd trimester)
Dihydrotestosterone (nmol/L)		1–2.5		

Reference ranges, urine		
Calcium		2.5–7.5 mmol/24 hours
Chloride (depends on intake, plasma levels)		100–250 mmol/24 hours
Cortisol (free)		100–300 nmol/24 hours
Creatinine	(child) (male) (female)	0.07–0.19 mmol/24 hours/kg 9–18 mmol/24 hours 5–16 mmol/24 hours
HMMA	(infant) (adult)	< 10 mmol/mol creatinine < 35 µmol/24 hours
Magnesium		2.5–8.0 mmol/24 hours
Osmolality (depends on hydration)		50–1200 m.osmol/kg water
Phosphate (depends on intake, plasma levels)		10–40 mmol/24 hours
Potassium (depends on intake, plasma levels)		40–100 mmol/24 hours
Protein, total	 (pregnancy)	< 150 mg/24 hours < 250 mg/24 hours
Sodium (depends on intake, plasma levels)		75–300 mmol/24 hours
Urate	(male) (female)	2.2–6.6 mmol/24 hours 1.6–5.6 mmol/24 hours
Urea (depends on protein intake)		420–720 mmol/24 hours

Reference ranges, whole blood		
Haemoglobin (Hb)	(adult male) (adult female)	130–180 g/L 115–165 g/L
Red cell count (RCC)	(adult male) (adult female)	4.5–6.5 x 10^{12}/L 3.8–5.8 x 10^{12}/L
Packed cell volume (PCV)	(adult male) (adult female)	0.40–0.54 0.37–0.47
Mean cell volume (MCV)		80–100 fL
Mean cell haemoglobin (MCH)		27–32 pg
Mean cell haemoglobin concentration (MCHC)		300–350 g/L
Leucocyte (White Cell) Count (WCC)		4.0–11.0 x 10^9/L
Leucocyte differential count – Neutrophils – Eosinophils – Basophils – Monocytes – Lymphocytes Platelet count		 2.0–7.5 x 10^9/L 0.04–0.4 x 10^9/L < 0.1 x 10^9/L 0.2–0.8 x 10^9/L 1.5–4.0 x 10^9/L 150–400 x 10^9/L
Erythrocyte sedimentation rate (ESR)	male 17–50 yrs male >50 yrs female 17–50 yrs female >50 yrs	1–10 mm/hour 2–14 mm/hour 3–12 mm/hour 5–20 mm/hour
Reticulocyte count		10–100 x 10^9/L (0.2–2.0%)

Reference ranges, plasma or serum, unless otherwise indicated		
Iron	(adult)	10–30 µmol/L
Iron (total) binding capacity (TIBC)		45–80 µmol/L
Transferrin		1.7–3.0 g/L
Transferrin saturation		0.15–0.45 (15–45%)
Ferritin	(male) (female)	30–300 µg/L 15–200 µg/L
Vitamin B^{12}		120–680 pmol/L
Folate	(red cell) (serum)	360–1400 nmol/L 7–45 nmol/L

Reference ranges, citrated plasma	
Activated partial thromboplastin time (APTT) – Therapeutic range for continuous infusion heparin	25–35 seconds 1.5–2.5 x baseline
Prothrombin time (PT)	11–15 seconds
International normalised ratio (INR) – Therapeutic range for oral anticoagulant therapy	 2.0–4.5
Fibrinogen	1.5–4.0 g/L

Reference ranges, serum	
Rheumatoid factor (nephelometry)	< 30 IU/L
C3	0.9–1.8 g/L
C4	0.16–0.50 g/L
C-reactive protein	< 5.0 mg/L
Immunoglobulins: IgG IgA IgM	 6.5–16.0g/L 0.6–4.0g/L 0.5–3.0g/L

Reference intervals for lymphocyte subsets	
	Adult
Total lymphocytes	1.5–4.0
CD3	0.6–2.4
CD4 (T4)	0.5–1.4
CD8 (T8)	0.2–0.7
CD19	0.04–0.5
CD16	0.2–0.4
CD4/CD8 ratio	1.0–3.2

Appendix 13.2: New classification and criteria for diagnosis of diabetes mellitus

Position Statement from the Australian Diabetes Society,* New Zealand Society for the Study of Diabetes,† Royal College of Pathologists of Australasia‡ and Australasian Association of Clinical Biochemists§

Peter G Colman,* David W Thomas,‡ Paul Z Zimmet,* Timothy A Welborn,* Peter Garcia-Webb§ and M Peter Moore†

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Key messages

Diagnosis of diabetes is not in doubt when there are classical symptoms of thirst and polyuria and a random venous plasma glucose level ≥ 11.1 mmol/L.

The Australasian Working Party on Diagnostic Criteria for Diabetes Mellitus recommends:

- Immediate adoption of the new criterion for diagnosis of diabetes as proposed by the American Diabetes Association (ADA) and the World Health Organization (WHO) — fasting venous plasma glucose level ≥ 7.0 mmol/L.
- Immediate adoption of the new classification for diabetes mellitus proposed by the ADA and WHO, which comprises four aetiological types — type 1, type 2, other specific types, and gestational diabetes — with impaired glucose tolerance and impaired fasting glycaemia as stages in the natural history of disordered carbohydrate metabolism.
- Awareness that some cases of diabetes will be missed unless an oral glucose tolerance test (OGTT) is performed. If there is any suspicion or other risk factor suggesting glucose intolerance, the OGTT should continue to be used pending the final WHO recommendation.

Introduction

Recently, there has been major growth in knowledge about the aetiology and pathogenesis of different types of diabetes and about the predictive value of different blood glucose levels for development of complications. In response, both the American Diabetes Association (ADA) and the World Health Organization (WHO) have re-examined, redefined and updated the classification of and criteria for diabetes, which have been unchanged since 1985. While the two working parties had cross-representation, they met separately, and differences have emerged between their recommendations.

The ADA published its final recommendations in 1997,[1] while the WHO group published its provisional conclusions for consultation and comment in June 1998.[2]

The WHO process called for comments on the proposal by the end of September 1998, with the intention of finalising definitive classification and criteria by the end of December 1998 and of publishing these soon thereafter. However, WHO publications need to go through an internal approval process and it may be up to 12 months before the final WHO document appears.

A combined working party of the Australian Diabetes Society, New Zealand Society for the Study of Diabetes, Royal College of Pathologists of Australasia and Australasian Association of Clinical Biochemists was formed to formulate an Australasian position on the two sets of recommendations and, in particular, on the differences between them. This is an interim statement pending the final WHO report, which will include recommendations on diabetes classification as well as criteria for diagnosis. We see it as very important to inform Australasian health professionals treating patients with diabetes about these changes.

What are the new diagnostic criteria?

The new WHO criteria for diagnosis of diabetes mellitus and hyperglycaemia are shown in Box 1. The major change from the previous WHO recommendation[3] is the lowering of the diagnostic level of fasting plasma glucose to 7.0 mmol/L, from the former level of 7.8 mmol/L. For whole blood, the proposed new level is 6.1 mmol/L, from the former 6.7 mmol/L.

This change is based primarily on cross-sectional studies demonstrating the presence of microvascular[4] and macrovascular complications[5] at these lower glucose concentrations. In addition, the 1985 WHO diagnostic criterion for diabetes based on fasting plasma glucose level (7.8 mmol/L) represents a greater degree of hyperglycaemia than the criterion based on plasma glucose level two hours after a 75 g glucose load (11.1 mmol/L).[6] A fasting plasma glucose level of 7 mmol/L accords more closely with this 2 h post-glucose level.

Recommendation: *The ADA and the WHO committee are unanimous in adopting the changed diagnostic level, and the Australasian Working Party on Diagnostic Criteria recommends that healthcare providers in Australia and New Zealand should adopt it immediately.*

Clinicians should note that the diagnostic criteria differ between clinical and epidemiological settings. In clinical practice, when symptoms are typical of diabetes, a single fasting plasma glucose level of 7.0 mmol/L or 2 h post-glucose or casual postprandial plasma glucose level of 11.1 mmol/L suffices for diagnosis. If there are no symptoms, or symptoms are equivocal, at least one additional glucose measurement (preferably fasting) on a different day with a value in the diabetic range is necessary to confirm the diagnosis. Furthermore, severe hyperglycaemia detected under conditions of acute infective, traumatic, circulatory or other stress may be transitory and should not be regarded as diagnostic of diabetes. The situation should be reviewed when the primary condition has stabilised.

In epidemiological settings, for study of high-prevalence populations or selective screening of high-risk individuals, a single measure — the glucose-level 2 h post-glucose load — will suffice to describe prevalence of impaired glucose tolerance (IGT).

1: Values for diagnosis of diabetes mellitus and other categories of hyperglycaemia[2]

	Glucose concentration (mmol/L [mg/dL])			
	Whole blood		**Plasma**	
	Venous	**Capillary**	**Venous**	**Capillary**
Diabetes mellitus fasting	≥6.1 (≥110)	≥6.1 (≥110)	≥7.0 (≥126)	≥7.0 (≥126)
or 2 h post-glucose load	≥10.0 (≥180)	≥11.1 (≥200)	≥11.1 (≥200)	≥12.2 (≥220)
or both				
Impaired glucose tolerance (IGT)	< 6.1 (< 110)	< 6.1 (< 110)	< 7.0 (< 126)	< 7.0 (< 126)
Fasting (if measured) **and** 2 h post-glucose load	≥6.7 (≥120) and < 10.0 (< 180)	≥7.8 (≥140) and < 11.1 (< 200)	≥7.8 (≥140) and < 11.1 (< 200)	≥8.9 (≥160) and < 12.2 (< 220)
Impaired fasting glycaemia (IFG) Fasting	≥5.6 (≥100) and < 6.1 (< 110)	≥5.6 (≥100) and < 6.1 (< 110)	≥6.1 (≥110) and < 7.0 (< 126)	≥6.1 (≥110) and < 7.0 (< 126)
2 h post-glucose load (if measured)	< 6.7 (< 120)	< 7.8 (< 140)	< 7.8 (< 140)	< 8.9 (< 160)

For epidemiological or population screening purposes, the fasting or 2 h value after 75 g oral glucose may be used alone. For clinical purposes, the diagnosis of diabetes should always be confirmed by repeating the test on another day, unless there is unequivocal hyperglycaemia with acute metabolic decompensation or obvious symptoms. Glucose concentrations should not be determined on serum unless red cells are immediately removed, otherwise glycolysis will result in an unpredictable underestimation of the true concentrations. It should be stressed that glucose preservatives do not totally prevent glycolysis. If whole blood is used, the sample should be kept at 0–4ºC or centrifuged immediately, or assayed immediately. Table reproduced with permission from Alberti KGMM, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: diagnosis and classification of diabetes mellitus. Provisional Report of a WHO Consultation. *Diabet Med* 1998; 15: 539–553. Copyright John Wiley & Sons Limited.

2: Aetiological classification of disorders of glycaemia*

Type 1 (β-cell destruction, usually leading to absolute insulin deficiency)

- Autoimmune
- Idiopathic

Type 2 (may range from predominantly insulin resistance with relative insulin deficiency to a predominantly secretory defect with or without insulin resistance)

Other specific types

- Genetic defects of β -cell function
- Genetic defects in insulin action
- Diseases of the exocrine pancreas
- Endocrinopathies
- Drug or chemical induced
- Infections
- Uncommon forms of immune-mediated diabetes
- Other genetic syndromes sometimes associated withdiabetes

Gestational diabetes

* As additional subtypes are discovered, it is anticipated they will be reclassified within their own specific category. Includes the former categories of gestational impaired glucose tolerance and gestational diabetes. Table reproduced with permission from Alberti KGMM, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: diagnosis and classification of diabetes mellitus. Provisional Report of a WHO Consultation. Diabet Med 1998; 15: 539-553. Copyright John Wiley & Sons Limited.

What about the oral glucose tolerance test?

Previously, the oral glucose tolerance test (OGTT) was recommended in people with a fasting plasma glucose level of 5.5–7.7 mmol/L or random plasma glucose level of 7.8–11.0 mmol/L. After a 75 g glucose load, those with a 2 h plasma glucose level of < 7.8 mmol/L were classified as normoglycaemic, of 7.8–11.0 mmol/L as having IGT and of ≥11.1 mmol/L as having diabetes.

The new diagnostic criteria proposed by the ADA and WHO differ in their recommendations on use of the OGTT. The ADA makes a strong recommendation that fasting plasma glucose level can be used on its own and that, in general, the OGTT need not be used.[1] The WHO group[2] argues strongly for the retention of the OGTT and suggests using fasting plasma glucose level alone only when circumstances prevent the performance of the OGTT.

There are concerns that many people with a fasting plasma glucose level < 7.0 mmol/L will have manifestly abnormal results on the OGTT and are at risk of microvascular and macrovascular complications. This has major ramifications for the approach to diabetes screening, particularly when the Australian National Diabetes Strategy proposal,[7] launched in June 1998 by Dr Michael Wooldridge, then Federal Minister for Health and Aged Care, has early detection of type 2 diabetes as a key priority.

Recommendation: The Australasian Working Party on Diagnostic Criteria has major concerns about discontinuing use of the OGTT and recommends that a formal recommendation on its use in diabetes screening be withheld until the final WHO recommendation is made. However, in the interim, the OGTT should continue to be used.

Diabetes in pregnancy

The ADA has retained its old criteria for diagnosis of gestational diabetes.[1] These differ from those recommended by both WHO[2] and the Australian Working Party on Diabetes in Pregnancy[8] and are

generally not recognised outside the United States. The new WHO statement retains the 1985 WHO recommendation that both IGT and diabetes should be classified as gestational diabetes. This is consistent with the recommendations of the Australasian Diabetes in Pregnancy Society, which recommended a diagnostic 2 h venous plasma glucose level on the OGTT of ≥8.0 mmol/L. In New Zealand, a cut-off level of ≥ 9.0 mmol/L has been applied.[8]

How has the classification of diabetes changed?

The proposed new classification encompasses both clinical stages and aetiological types of hyperglycaemia and is supported by numerous epidemiological studies. The classification by aetiological type (box 2) results from new knowledge of the causes of hyperglycaemia, including diabetes. The terms insulin-dependent and non-insulin dependent diabetes (IDDM and NIDDM) are eliminated and the terms type 1 and type 2 diabetes retained. Other aetiological types, such as diabetes arising from genetic defects of β-cell function or insulin action, are grouped as 'other specific types', with gestational diabetes as a fourth category.

The proposed staging (box 3) reflects the fact that any aetiological type of diabetes can pass or progress through several clinical phases (both asymptomatic and symptomatic) during its natural history. Moreover, individuals may move in either direction between stages.

Impaired glucose tolerance and impaired fasting glycaemia

3: Disorders of glycaemia: aetiological types and clinical stages

Types	Stages: Normoglycaemia — Normal glucose tolerance	Hyperglycaemia — Impaired glucose tolerance and/or impaired fasting glycaemia	Diabetes mellitus — Not insulin-requiring	Diabetes mellitus — Insulin-requiring: For control	Diabetes mellitus — Insulin-requiring: For survival
Type 1 Autoimmune Idiopathic	←	←	←	←	→
Type 2* Predominantly insulin resistance Predominantly insulin secretory defects	←	←	←	←	- - →
Other specific types*	←	←	←	←	- - →
Gestational diabetes*	←	←	←	←	- - →

* In rare instances, patients in these categories (eg, vacor toxicity, type 1 diabetes presenting in pregnancy) may require insulin for survival.
Table reproduced with permission from Alberti KGMM, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: diagnosis and classification of diabetes mellitus. Provisional Report of a WHO Consultation. *Diabet Med* 1998; 15: 539-553. Copyright John Wiley & Sons Limited.

Impaired glucose tolerance (IGT), a discrete class in the previous classification, is now categorised as a stage in the natural history of disordered carbohydrate metabolism. Individuals with IGT are at increased risk of cardiovascular disease, and not all will be identified by fasting glucose level.

In reducing the use of the OGTT, the ADA recommended a new category- impaired fasting glycaemia (IFG)- when fasting plasma glucose level is lower than that required to diagnose diabetes but higher than the reference range (< 7.0 mmol/L but ≥ 6.1 mmol/L. Limited data on this category show that it increases both risk of progressing to diabetes[9] and cardiovascular risk[5]. However, data are as yet insufficient to determine whether IFG has the same status as IGT as a risk factor for developing diabetes and cardiovascular disease and as strong an association with the metabolic syndrome (insulin resistance syndrome).

IFG can be diagnosed by fasting glucose level alone, but if 2 h glucose level is also measured some individuals with IFG will have IGT and some may have diabetes. In addition, the number of people with OGTT results indicating diabetes but fasting plasma glucose level < 7.0 mmol/L is unknown, but early data suggest there may be major variation across different populations.[10] A number of studies, including the DECODE initiative of the European Diabetes Epidemiology Group, have reported that individuals classified with IFG are not the same as the IGT group.[11-15] The European Group believes that, on available European evidence, the ADA decision to rely solely on fasting glucose level would be unwise.

Recommendation: The Australasian Working Party on Diagnostic Criteria recommends immediate adoption of the new classification. However, clinicians should be aware that some cases of diabetes will be missed unless an OGTT is performed. Thus, if there is any suspicion or other risk factor suggesting glucose intolerance, the working party continues to recommend use of an OGTT pending the final WHO recommendation.

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14. The skin

Chapter 8, AMA5 (page 173) applies to the assessment of permanent impairment of the skin, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

14.1 AMA5 Chapter 8 (pp 173-190) refers to skin diseases generally rather than work-related skin diseases alone. This chapter has been adopted for measuring impairment of the skin system, with the following variations.

14.2 Disfigurement, scars and skin grafts may be assessed as causing significant permanent impairment when the skin condition causes limitation in the performance of ADL.

14.3 For cases of facial disfigurement, refer to Table 6.1 in the WorkCover WA Guidelines.

14.4 AMA5 Table 8-2 (p 178) provides the method of classification of impairment due to skin disorders. Three components- signs and symptoms of skin disorder, limitations in ADL and requirements for treatment define five classes of permanent impairment. The AMS should derive a specific percentage impairment within the range for the class that best describes the clinical status of the claimant.

14.5 The skin is regarded as a single organ and all non-facial scarring is measured together as one overall impairment rather than assessing individual scars separately and combining the results.

14.6 A scar may be present and rated as 0% WPI.

Note that uncomplicated scars for standard surgical procedures do not, of themselves, rate an impairment.

14.7 The table for the evaluation of minor skin impairment (TEMSKI) (see Table 14.1) is an extension of Table 8-2 in AMA5. The TEMSKI divides Class 1 of permanent impairment (0%-9%) due to skin disorders into five categories of impairment.

14.8 The TEMSKI is to be used in accordance with the principle of 'best fit'. The AMS must be satisfied that the criteria within the chosen category of impairment best reflect the skin disorder being assessed. If the skin disorder does not meet all of the criteria within the impairment category, the AMS must provide detailed reasons as to why this category has been chosen over other categories.

14.9 Where there is a range of values in the TEMSKI categories, the AMS should use clinical judgement to determine the exact impairment value.

14.10 The case examples provided in AMA5 Chapter 8 do not, in most cases, relate to permanent impairment that results from a work-related injury.

14.11 Work-related case study examples 14.1, 14.2 and 14.3 are included below, in addition to AMA5 examples 8.1-8.22 (pp 178-187).

Table 14.1 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 Good colour match with surrounding skin and the scar(s) or skin condition is barely distinguishable. Claimant is unable to easily locate the scar(s) or skin condition No trophic changes Any staple or suture marks are barely visible	Claimant is conscious of the scar(s) or skin condition Some parts of the scar(s) or skin condition colour contrast with the surrounding skin as a result of pigmentary or other changes Claimant is able to locate the scar(s) or skin condition Minimal trophic changes Any staple or suture marks are visible	Claimant is conscious of the scar(s) or skin condition Noticeable colour contrast of scar(s) or skin condition with surrounding skin as a result of pigmentary or other changes Claimant is able to easily locate the scar(s) or skin condition Trophic changes evident to touch Any staple or suture marks are clearly visible	Claimant is conscious of the scar(s) or skin condition Easily identifiable colour contrast of scar(s) or skin condition with surrounding skin as a result of pigmentary or other changes Claimant is able to easily locate the scar(s) or skin condition Trophic changes evident to touch Any staple or suture marks are clearly visible	Claimant is conscious of the scar(s) or skin condition Distinct colour contrast of scar(s) of skin condition with surrounding skin as a result of pigmentary or other changes Claimant is able to easily locate the scar(s) or skin condition Trophic changes are visible Any staple or suture marks are clearly visible
Location	Anatomic location of the scar(s) or skin condition 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 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 defect	Minor contour defect	Contour defect visible	Contour defect easily visible	Contour defect easily visible
ADL / Treatment	No effect on any ADL. No treatment, or intermittent treatment only, required	Negligible effect on any ADL. No treatment, or intermittent treatment only, required	Minor limitation in the performance of few ADL. No treatment, or intermittent treatment only, required	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 No treatment, or intermittent treatment only, required	Limitation in the performance of few ADL (**including** restriction in grooming or 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
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. Refer to 14.8 regarding application of this table.

Example 14.1:	**Cumulative irritant dermatitis**
Subject:	42-year-old man.
History:	Spray painter working on ships in dry dock. Not required to prepare surface but required to mix paints (including epoxy and polyurethane) with 'thinners' (solvents) and spray metal ships' surface. At end of each session, required to clean equipment with solvent. Not supplied with gloves or other personal protective equipment until after onset of symptoms. Gradual increase in severity in spite of commencing to wear gloves. Off work two months leading to clearance, but frequent recurrence, especially if the subject attempted prolonged work wearing latex or PVC gloves or wet work without gloves.
Current:	Returned to dry duties only at work. Mostly clear of dermatitis, but flares.
Physical examination:	Varies between no abnormality detected to mild dermatitis of the dorsum of hands.
Investigations:	Patch test standard + epoxy + isocyanates (polyurethanes). No reactions.
Impairment:	0%.
Comment:	No interference with ADL.

Example 14.2:	**Allergic contact dermatitis to hair dye**
Subject:	30-year-old woman.
History:	Hairdresser 15 years, with six month history of hand dermatitis, increasing despite beginning to wear latex gloves after onset. Dermatitis settled to very mild after four weeks off work, but not clear. As the condition flared whenever the subject returned to hairdressing, she ceased and is now a computer operator.
Current:	Mild continuing dermatitis of the hands which flares when doing wet work (without gloves) or when wears latex or PVC gloves. Has three young children and impossible to avoid wet work.
Investigation:	Patch test standard + hairdressing series. Possible reaction to paraphenylene diamine.
Impairment:	5%.
Comment:	Able to carry out ADL with difficulty, therefore limited performance of some ADL.

Example 14.3:	**"Cement dermatitis" due to chromate in cement**
Subject:	43-year-old man.
History:	Concreter since age 16. Eighteen month history of increasing hand dermatitis eventually on dorsal and palmar surface of hands and fingers. Off work and treatment led to limited improvement only.
Physical examination:	Fissured skin, hyperkeratotic chronic dermatitis.
Investigation:	Patch test. Positive reaction to dichromate.
Current:	Intractable, chronic, fissured dermatitis.
Impairment:	12%.
Comment:	Unable to obtain any employment because has chronic dermatitis and on disability support pension. Difficulty gripping items including steering wheel, hammer and other tools. Unable to do any wet work (eg painting). Former home handyman, now calls in tradesman to do any repairs and maintenance. Limited performance in some ADL.

Example 14.4:	**Latex contact urticaria/angioedema with cross reactions**
Subject:	Female nurse, age 40.
History:	Six month history of itchy hands minutes after applying latex gloves at work. Later swelling and redness associated with itchy hands and wrists and subsequently widespread urticaria. One week off led to immediate clearance. On return to work wearing PVC gloves, developed anaphylaxis on first day back.
Physical examination:	No abnormality detected or generalised urticaria/angioedema.
Investigation:	Latex radioallergosorbent test, strong positive response.
Current:	The subject experiences urticaria and mild anaphylaxis if she enters a hospital, some supermarkets or other stores (especially if latex items are stocked), at children's parties or in other situations where balloons are present, or on inadvertent contact with latex items including sport goods handles, some clothing, and many shoes (latex based glues). Also has restricted diet (must avoid bananas, avocados and kiwi fruit).
Impairment:	17%.
Comment:	Severe limitation in some ADL in spite of intermittent activity.

Example 14.5:	**Non-melanoma skin cancer**
Subject:	53-year-old married man.
History:	Road worker since 17 years of age. Has had a basal cell carcinoma on the left forehead, squamous cell carcinoma on the right forehead (graft), basal cell carcinoma on the left ear (wedge resection) and squamous cell carcinoma on the lower lip (wedge resection) excised since 45 years of age. No history of loco-regional recurrences. Multiple actinic keratoses treated with cryotherapy or Efudix over 20 years (forearms, dorsum of hands, head and neck).
Current:	New lesion right preauricular area. Concerned over appearance 'I look a mess.'
Physical examination:	Multiple actinic keratoses forearms, dorsum of hands, head and neck. Five millimetre diameter nodular basal cell carcinoma right preauricular area, hypertrophic red scar 3cm length left forehead, 2cm diameter graft site (hypopigmented with 2mm contour deformity) right temple, nonhypertrophic scar left lower lip (vermilion) with slight step deformity and non-hypertrophic pale wedge resection scar left pinna leading to 30% reduction in size of the pinna. Graft sites taken from right post auricular area. No regional lymphadenopathy.
Impairment rating:	6%.
Comment:	Refer to Table 6.1 (facial disfigurement).

Example 14.6:	**Non-melanoma skin cancer**
Subject:	35-year-old single female professional surf life-saver.
History:	Occupational outdoor exposure since 19 years of age. Basal cell carcinoma on tip of nose excised three years ago with full thickness graft following failed intralesional interferon treatment.
Current:	Poor self-esteem because of cosmetic result of surgery.
Physical examination:	One centimetre diameter graft site on the tip of nose (hypopigmented with 2mm depth contour deformity, cartilage not involved). Graft site taken from right post-auricular area.
Impairment rating:	10%.
Comment:	Refer to Table 6.1 (facial disfigurement).

15. Cardiovascular system

Chapters 3 and 4 AMA5 (page 23 and 65) apply to the assessment of permanent impairment of the cardiovascular system, subject to the modifications set out below. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

15.1 The cardiovascular system is discussed in AMA5 Chapters 3 (Heart and Aorta) and 4 (Systemic and Pulmonary Arteries) (pp 25-85). These chapters can be used to assess permanent impairment of the cardiovascular system with the following minor modifications.

15.2 It is noted that in this chapter there are wide ranges for the impairment values in each category. When conducting an assessment, AMS should use their clinical judgement to express a specific percentage within the range suggested.

Exercise stress testing

15.3 As with other investigations, it is not the role of a AMS to order exercise stress tests purely for the purpose of evaluating the extent of permanent impairment.

15.4 If exercise stress testing is available, then it is a useful piece of information in arriving at the overall percentage impairment.

15.5 If previous investigations are inadequate for a proper assessment to be made, the AMS should consider the value of proceeding with the evaluation of permanent impairment without adequate investigations and data (see WorkCover WA Guidelines, Chapter 1 – ordering of additional investigations).

Permanent impairment — maximum medical improvement

15.6 As for all assessments, MMI is considered to have occurred when the worker's condition is well stabilised and unlikely to change substantially in the next year with or without medical treatment.

Vascular diseases affecting the extremities

15.7 Note that in this section, AMA5 Table 4-4 and Table 4-5 (p 76) refer to percentage impairment of the upper or lower extremity. Therefore, an assessment of impairment concerning vascular impairment of the arm or leg requires that the percentages identified in tables 4-4 and 4-5 be converted to WPI. The table for conversion of the upper extremity is AMA5 Table 16-3 (p 439) and the table for conversion of the lower extremity is AMA5 Table 17-3 (p 527).

Thoracic outlet syndrome

15.8 Impairment due to thoracic outlet syndrome is assessed according to AMA5 Chapter 16, the upper extremities and the WorkCover WA Guidelines, Chapter 2.

16. Digestive system

Chapter 6, AMA5 (page 117) applies to the management of permanent impairment of the digestive system. Before undertaking an impairment assessment, users of the WorkCover WA Guidelines must be familiar with the following:

- The Introduction in the WorkCover WA Guidelines
- Chapters 1 and 2 of AMA5
- The appropriate chapter/s of the WorkCover WA Guidelines for the body system they are assessing
- The appropriate chapter/s of AMA5 for the body system they are assessing

The WorkCover WA Guidelines take precedence over AMA5.

Introduction

16.1 The digestive system is discussed in AMA5 Chapter 6 (pp 117-142). This chapter can be used to assess permanent impairment of the digestive system.

16.2 AMA5 Section 6.6, Hernias (p 136): Occasionally in regard to inguinal hernias there is damage to the ilio-inguinal nerve following surgical repair. Where there is loss of sensation in the distribution of the ilio-inguinal nerve involving the upper anterior medial aspect of the thigh, a 1% WPI should be assessed as per Table 5.1 of the WorkCover WA Guidelines. This assessment should not be made unless the symptoms have persisted for 12 months.

16.3 Where, following repair, there is severe dysaesthesia in the distribution of the ilio-inguinal nerve, a maximum of a 5% WPI may be assessed as per Table 5.1 of the WorkCover WA Guidelines. This assessment should not be made unless the symptoms have persisted for 12 months.

16.4 Where, following repair of a hernia of the abdominal wall, there is residual persistent excessive induration at the site, which is associated with significant discomfort, this should be assessed as a Class 1 herniation (AMA5, Table 6-9, p 136). This assessment should not be made unless the symptoms have persisted for 12 months.

16.5 Impairments due to nerve injury and induration cannot be combined. The higher impairment should be chosen.

16.6 A person who has suffered more than one work related hernia recurrence at the same site and who now has limitation of activities of daily living should be assessed as herniation Class 1 (AMA5, Table 6-9, p 136).

16.7 A diagnosis of a hernia should not be made on the findings of an ultrasound examination alone. For the diagnosis of a hernia to be made there must be a palpable defect in the supporting structures of the abdominal wall and either a palpable lump or a history of a lump when straining.

16.8 A divarication of the rectus abdominus muscles in the upper abdomen is not a hernia, although the supporting structures have been weakened, they are still intact.

16.9 Effects of analgesics on the digestive tract:

- Table 6-3 AMA5 (p 121) Class 1 is to be amended to read 'there are symptoms and signs of digestive tract disease'.
- Nonsteroidal anti-inflammatory agents including Aspirin taken for prolonged periods can cause symptoms in the upper digestive tract. In the absence of clinical signs or other objective evidence of upper digestive tract disease, anatomic loss or alteration a 0% WPI is to be assessed.
- Effects of analgesics on the lower digestive tract:
  - Constipation is a symptom, not a sign and is generally reversible. A WPI assessment of 0% applies to constipation.
  - Irritable bowel syndrome without objective evidence of colon or rectal disease is to be assessed at 0% WPI.
- Assessment of colorectal disease and anal disorders requires the report of a treating doctor or family doctor which includes a proper physical examination with rectal examination if appropriate and/or a full endoscopy report.

16.10 **Splenectomy**. Post-traumatic splenectomy or functional asplenia following abdominal trauma should be assessed as a 3% WPI.

16.11 **Abdominal adhesions:** Intra-abdominal adhesions following trauma requiring further laparotomy should be assessed under Table 6-3, AMA5, p 121.

17. Evaluation of permanent impairment arising from chronic pain

(exclusion of Chapter 18, AMA5)

17.1 The International Association for the Study of Pain (IASP) has defined pain as:

> *"An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage".*

17.2 For chronic pain assessment using AMA5 and the WorkCover WA Guidelines, Chapter 18 of AMA5, pain, (p 565-591) is excluded.

Section 13.8 of AMA5 (p 343-344) is also excluded.

17.3 The reasons for excluding chronic pain, as a separate condition from the WorkCover WA Guidelines are:

- It is a subjective experience and is therefore open to exaggeration or fabrication in the compensation setting. Assessment depends on the credibility of the subject being assessed. In order to provide reliability, applicants undergoing pain assessments require more than one examiner at different times, concordance with the established conditions, consistency over time, anatomical and physiological consistency, agreement between the examiners and exclusion of inappropriate illness behaviour.
- Pain cannot be measured and no objective assessment can be made.
- Tools to measure pain are based on self-reports and may be inherently unreliable.
- Some impairment ratings take symptoms into account and some of the ranges of impairment eg WPI spine, may reflect the effect of the injury and pain on ADL. This is not so for impairment assessment of the upper and lower limb which is based on range of movement and diagnosis based estimates, other than for peripheral nerve injury.

17.4 Where there is a peripheral nerve injury and there is sensory loss, some of the sensory nerve impairment categories permit pain to be included (categories 1-5, Table 16.10 p 482 AMA5).

17.5 The Section 17.2m, 'causalgia and complex regional pain syndrome (reflex sympathetic dystrophy)' (p 553 AMA5) should not be used. Table 16-16 AMA5 p 496 has been replaced by Table 17.1 in the WorkCover WA Guidelines. The table is used to determine if complex regional pain syndrome (CRPS) is a rateable diagnosis. It is important to exclude diagnoses that may mimic CRPS, such as disuse atrophy, unrecognised general medical problems, somatoform disorders, and factitious disorder. Once the diagnosis is established, assess impairment as in AMA5.

Complex Regional Pain Syndrome (CRPS) Type 1

17.6 For CRPS1 to be present for the purposes of assessment:

- The diagnosis is to be confirmed by criteria in Table 17.1.
- The diagnosis has been present for at least one year (to ensure accuracy of the diagnosis and to permit adequate time to achieve MMI).
- The diagnosis has been verified by more than one examining physician.
- Other possible diagnoses have been excluded.

17.7 CRPS1 is to be assessed as follows:

- Apply the diagnostic criteria for complex regional pain syndrome type 1 (Table 17.1).

Table 17.1 Diagnostic Criteria for Complex Regional Pain Syndrome (CRPS) types 1 and 2

1. Continuing pain, which is disproportionate to any causal event.
2. Must report at least 1 symptom in each of the 4 following categories: • Sensory: Reports of hyperaesthesiae and/or allodynia • Vasomotor: Reports of temperature asymmetry and/or skin colour changes and/or skin colour asymmetry • Sudomotor/oedema: Reports of oedema and/or sweating increase or decrease and/or sweating asymmetry • Motor/trophic: Reports of decreased range of joint motion and/or motor dysfunction (tremor, dystonia) and/or trophic changes (hair, nail, skin)
3. Must display at least 1 sign* at time of evaluation in all of the following 4 categories: • Sensory: Evidence of hyperalgesia (to pin prick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement) • Vasomotor: Evidence of temperature asymmetry and/or asymmetric skin colour changes • Sudomotor/oedema: Evidence of oedema and/or sweating asymmetry • Motor/trophic: Evidence of decreased active joint range of motion and/or motor dysfunction (tremor, dystonia) and/or trophic changes (hair, nail, skin)
4. There is no other diagnosis that better explains the signs and symptoms.
*A sign is included only if it is observed and documented at time of the impairment evaluation.

- If the criteria in each of the sections 1, 2, 3 and 4 in Table 17.1 are satisfied, the diagnosis of CRPS1 may be made.
- Rate the extremity impairment resulting from loss of motion of each individual joint involved.
- Rate the extremity impairment resulting from sensory deficits and pain, according to the grade that best fits the degree or amount of interference with ADL described in AMA5 table 16.10a (p 482) . Use clinical judgement to select the appropriate severity grade and the appropriate percentage from within the range shown in each grade. The maximum value is not automatically applied. The value selected represents the extremity impairment. A nerve value multiplier is not used.

- Combine the extremity impairment for loss of joint motion with the impairment for pain or sensory deficit using the combined values chart (AMA5, p 604) to obtain the final extremity impairment.
- Convert the final extremity impairment to WPI using Table 16.3 p 439 for the upper extremity and Table 17.3 p 527 for the lower extremity in AMA5.

Complex Regional Pain Syndrome (CRPS) type 2, causalgia

17.8 For CRPS2, the mechanism is an injury to a specific nerve. The methodology in AMA5 pp 496-497 is to be followed:

- If the criteria in each of the sections 1, 2, 3 and 4 in Table 17.1 are satisfied and there is objective evidence of an injury to a specific nerve, the diagnosis of CRPS2 may be made.
- Rate the extremity impairment due to loss of motion of each individual joint involved.
- Rate the extremity impairment resulting from sensory deficits and pain of the injured nerves according to the determination methods described in section 16.5b and Table 16-10a (Chapter 16) AMA5. Use clinical judgement to select the appropriate severity grade and the appropriate percentage from within each range shown in the grade.
- Rate the extremity impairment resulting from motor deficits and loss of power of the injured nerve according to the determination method in Section 16.5b and Table 16-11a (Chapter 16) AMA 5.
- Combine the extremity impairment percents for loss of range of motion of the joints involved, pain or sensory deficits and motor deficits, if present, to determine the final extremity impairment, using the combined values chart (AMA5, p 604).
- Convert the final extremity impairment to WPI using Table 16.3 p 439 for the upper extremity and Table 17.3 p 527 for the lower extremity in AMA5.

Appendix 1: Key definitions

AMA5

Means the Fifth Edition of the American Medical Association's (AMA) Guides to the Evaluation of Permanent Impairment and any published errata.

AMA4

Means the Fourth Edition of the American Medical Association's (AMA) Guides to the Evaluation of Permanent Impairment.

Approved Medical Specialist (AMS)

Means a person currently designated under section 146F of the Act as an Approved Medical Specialist.

Approved Medical Specialist (AMS) panel

Means an AMS panel constituted under Part VII Division 3 of the Act.

Degree of impairment

In relation to a worker, means –

(a) a worker's degree of permanent impairment for the purposes of Part III Division 2A;

(b) a worker's degree of permanent whole person impairment (WPI) for the purposes of Part IV Division 2 Subdivision 3;

(c) a worker's degree of permanent WPI for the purposes of Part IXA;

(d) a worker's degree of permanent WPI for the purposes of clause 18A (2aa)(a).

Injury, means –

(a) a personal injury by accident arising out of or in the course of the employment, or whilst the worker is acting under the employer's instructions;

(b) a disease because of which an injury occurs under section 32 or 33;

(c) a disease contracted by a worker in the course of his employment at or away from his place of employment and to which the employment was a contributing factor and contributed to a significant degree;

(d) the recurrence, aggravation, or acceleration of any pre existing disease where the employment was a contributing factor to that recurrence, aggravation, or acceleration and contributed to a significant degree; or

(e) a loss of function that occurs in the circumstances mentioned in section 49, but does not include a disease caused by stress if the stress wholly or predominantly arises from a matter mentioned in subsection (4) unless the matter is mentioned in paragraph (a) or (b) of that subsection and is unreasonable and harsh on the part of the employer.

Maximum Medical Improvement (MMI)

An assessment of a worker's degree of permanent impairment is only to be conducted when the AMS considers that the worker's condition has stabilised to the extent required for an evaluation of permanent impairment. This is considered to occur when the worker's condition is unlikely to change substantially in the ensuing 12 months with or without further medical treatment (i.e. further recovery or deterioration is not anticipated). At this stage the worker is considered to have reached maximum medical improvement (MMI). The only exception to the principle that the condition must be stable for an evaluation to be done is in the limited circumstances outlined in the Act and these WorkCover WA Guides, which provide for a special evaluation to be conducted.

Secondary condition

Means a condition, whether psychological, psychiatric, or sexual, that, although it may result from the injury or injuries concerned, arises as a secondary or less direct, consequence of that injury or those injuries.

The Act

The *Workers' Compensation and Injury Management Act 1981*.

WorkCover WA Guidelines

Means the directions published by WorkCover WA under section 146R in the form of the *WorkCover WA Guidelines for the Evaluation of Permanent Impairment*.

Appendix 2: Evaluation of permanent impairment for Part 2 of Schedule 2 of the Act

The table set out in Part 2 of Schedule 2 of the Act was inserted by the *Workers' Compensation Reform Act 2004* and differs from the discontinued Schedule 2 regime (Part 1 of the table set out in Schedule 2, Items 1-39) in that impairments mentioned in Items 40 - 82 will be evaluated in accordance with the WorkCover WA Guidelines.

Injuries that occur before 14 November 2005 will continue to be assessed under Items 1-39 and do not require an impairment evaluation by an AMS.

All injuries that occur after 14 November 2005 will be subject to an impairment evaluation and Part 2 of the Schedule 2 table will apply. The exception to this is Item 82 – AIDS. A worker is deemed to have 100% impairment if a medical practitioner certifies that the worker has contracted AIDS. An AMS is therefore not required to certify or assess the level of impairment for AIDS.

Care must be taken when choosing the relevant item number for the purpose of a Schedule 2 impairment assessment. Before formulating an impairment rating, the AMS should read the 'Conversion Factor Table for Schedule 2 Table of Compensation Payable Part 2' on the following pages. When assessing a worker with an injury confined to the ring finger, the correct item number would be chosen from Item number 59 (Impairment of ring finger), or Item 65 (Impairment of the distal phalanx of the ring finger). It is not appropriate to assess the worker using Item 52 (Impairment of the arm below elbow), or Item 55 (Impairment of hand), unless the injury would also lead to an impairment of the arm below the elbow or hand respectively.

When the impairment is strictly limited to the distal phalanx (eg partial amputation) and there is no loss of motion of the distal interphalangeal or more proximal joints of the digit, or sensory loss proximal to the distal phalanx, Item 62, 64 or 65 should be used (see Worked Example/Case Study Number 6, p 100 of the WorkCover WA Guidelines). In all other cases of digit injury the respective digit impairment (Items 56-60) should be used (see Worked Example/Case Study Number 7, p 101 of the WorkCover WA Guidelines).

Item 76 of Part 2 of Schedule 2 has changed compared to Item 36A in Part 1. Item 76 provides for the evaluation of the thoracic spine or lumbar spine, or both, in order to simplify the assessment. The percentage of the Prescribed Amount has increased by 15% for impairment of the back (75%), neck (55%) and pelvis (30%) compared to the relevant Items in the old Schedule 2 regime.

Items 40-43 are to be assessed in accordance with AMA4 Chapter 8 (p 209). The AMS (who is not an ophthalmologist) will require the worker to submit to examination by an ophthalmologist and ensure the ophthalmologist examines the worker in accordance with AMA4.

The provisions in Chapter 1 of the WorkCover WA Guidelines, relating to multiple impairments, do not apply to assessments under Part 2 of Schedule 2.

Conversion Factor Table for Schedule 2

Table of Compensation Payable

Part 2

Item	Nature of injury or Impairment	Maximum % of PA	Conversion Factor
	EYES		
40.	Impairment of sight of both eyes	100	100 x WPI/85
41.	Impairment of sight of an only eye	100	100 x WPI/85
42.	Impairment of sight of one eye	50	100 x WPI/24
43.	Impairment of binocular vision	50	100 x WPI/85
	N.B Eyes are assessed in accordance with AMA4		
	HEARING		
44.	Impairment of hearing	75	100 x WPI/35
	SPEECH		
45.	Impairment of power of speech	75	100 x WPI/35
	BODY AND MENTAL		
46.	Impairment of mental capacity	100	WPI
47.	Impairment of spinal cord function	100	WPI
	SENSORY		
48.	Impairment of sense of taste and smell	50	100 x WPI/5
49.	Impairment of sense of taste	25	100 x WPI/5
50.	Impairment of sense of smell	25	100 x WPI/5
	ARM		
51.	Impairment of arm at or above elbow	90	100 x WPI/60
52.	Impairment of arm below elbow	80	100 x WPI/57
	HAND		
53.	Impairment of both hands	100	100 x WPI/81
54.	Impairment of hand and foot	100	100 x WPI/67
55.	Impairment of hand or thumb and 4 fingers	80	Hand Impt
56.	Impairment of thumb	35	Digit Impt
57.	Impairment of forefinger	17	Digit Impt
58.	Impairment of middle finger	13	Digit Impt
59.	Impairment of ring finger	9	Digit Impt
60.	Impairment of little finger	6	Digit Impt
61.	Impairment of movement of joint of thumb	17	100 x Digit Impt/50
62.	Impairment of distal phalanx of thumb	20	100 x Digit Impt/50
63.	Impairment of portion of terminal segment of thumb involving one-third of its flexor surface without loss of distal phalanx	15	100 x Digit Impt/45
64.	Impairment of distal phalanx of forefinger	10	100 x Digit Impt/45

Item	Nature of injury or Impairment	Maximum % of PA	Conversion Factor
65.	Impairment of distal phalanx of middle finger	8	100 x Digit Impt/45
	ring finger	6	100 x Digit Impt/45
	little finger	4	100 x Digit Impt/45
66.	Impairment of distal phalanx of each finger of the same hand (not including the thumb) in one accident	31	100 x Digit Impt/45
	LEG		
67.	Impairment of leg at or above knee	70	100 x WPI/40
68.	Impairment of leg below knee	65	100 x WPI/32
	FEET		
69.	Impairment of both feet	100	100 x WPI/44
70.	Impairment of foot	65	100 x WPI/25
71.	Impairment of great toe	20	100 x Lower extremity Impt/12
72.	Impairment of any other toe	8	100 x Lower extremity/2
73.	Impairment of 2 phalanges of any other toe	5	100 x Lower extremity/2
74.	Impairment of phalanx of great toe	8	100 x Lower extremity/5
75.	Impairment of phalanx of any other toe	4	100 x Lower extremity/2
	BACK, NECK AND PELVIS		
76.	Impairment of the back (thoracic spine or lumbar spine or both)	75	100 x WPI/60
77.	Impairment of the neck (including cervical spine)	55	100 x WPI/40
78.	Impairment of the pelvis	30	100 x WPI/15
	MISCELLANEOUS		
79.	Impairment of genitals	50	100 x WPI/20
80.	Impairment from facial scarring or disfigurement	80	100 x WPI/50
81.	Impairment from bodily, other than facial, scarring or disfigurement	50	100 x WPI/95
82.	AIDS	100	N/A

Worked Examples/Case Studies

1. Back Pain:

Subject:

25-year old man, Process Operator

History:

Onset low back and left thigh pain whilst lifting at work. Initial assessment revealed left paravertebral muscle spasm, a positive SLR at 60° on left and absent left ankle reflex. Symptoms substantially resolved over six weeks after anti-inflammatory and analgesic medications and physiotherapy.

Current Symptoms:

No pain at rest, no leg symptoms. Able to perform ADL. Generalised low backache after repetitive heavy lifting.

Physical Examination:

Good ROM of lumbar spine with mild end of range discomfort and muscle guarding and asymmetrical spinal motion. SLR negative with full motor and sensory function.

Clinical Studies:

CT and MRI show a lumbar L5/S1 left posterolateral disc protrusion.

Diagnosis:

Left posterolateral disc herniation lumbar L5/S1 and a resolved left SI radiculopathy.

Impairment Rating:

Use AMA5 Table 15 –3 (p 384), 5% WPI.

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 76 p 94) the degree of impairment for the purpose of a Schedule 2 assessment is:

100 x 5/60 = 8.33% of Item 76

This should be reported by the AMS as:

8.33% of Item 76 Impairment of the back (lumbar spine).

2. Back Pain:

Subject:

35 year old man, Brickie's Labourer

History:

Previous history severe backache a year before the new accident, requiring 3-4 days off. Lifting heavy load of bricks, sudden onset pain with shooting pain left buttock and into left leg and big toe. Two days later numbness of left lower leg and big toe. CT identified large disc protrusion at C4/5 extending posteriorly and left lateral encroaching left L5 nerve root. MRI confirmed this and with clinical signs of radiculopathy. Had a decompression laminectomy removing disc material from a compressed left L5 nerve root.

Current Symptoms:

No further shooting pains left leg though numbness and weakness persisted. Ongoing low back pain and reduction in ADL.

Physical Examination:

Some reduction in forward flexion due to pain. Persisting left L5 dermatome sensory loss and weakness in foot dorsiflexion. SLR to 70% with some hamstring tightening.

Clinical Studies:

No further investigations post surgery.

Diagnosis:

Decompression laminectomy for L4/5 disc herniation with persisting left L5 radiculopathy.

Impairment Rating:

AMA5 Table 15–3 (p 384). This involves some loss of ADL and DRE rating is III giving 13% WPI. With WorkCover WA Guidelines Table 4.2 (p 36), additional 3% WPI due to single level surgery and residual radiculopathy. Combined with DRE rates 13cw 3% = 16% WPI.

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 76 p 94) impairment is:

100 x 16/60 = 26.67% of Item 76

This should be reported by the AMS as:

26.67% of Item 76 Impairment of the back (lumbar spine).

3. Neck Pain:

Subject:

58-year old woman, Office Worker

History:

Neck ache associated with computer work over several months. Then developed ache in right upper arm and forearm, which was associated with the neck ache. As her symptoms deteriorated, she saw her doctor. Treated with analgesics, anti-inflammatories, and physiotherapy. Plain x-rays identified extensive cervical spondylosis with C5/6 and C6/7 foraminal osteophytes on right. Workers' compensation accepted for aggravation of cervical spondylosis. On assessment she denied previous neck problems.

Current Symptoms:

Ongoing neck ache and right arm ache requiring analgesics and anti- inflammatories. Little change over previous 12 months and caused some modifications of ADL. No further radiology taken.

Physical Examination:

Diminished active range of movements of neck with extension left lateral flexion and left rotation being uncomfortable and resulting in muscle guarding and spasm. Neurological assessment was normal.

Diagnosis:

Cervical spondylosis which has become symptomatic with non-radicular upper limb pain.

Impairment Rating:

Note Section 4.26 of these WorkCover WA Guidelines (p 34). Consider AMA5 Table 15 –5 (p 392) Cervical Category II (5–8% of WPI) + Point 6, p 381 AMA5 gives an assessment of 8% WPI.

'Apportionment'– no evidence for pre-existing symptoms despite compelling evidence to the contrary on radiology, no reduction for pre-existing condition.

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 77 p 94) impairment is:

100 x 8/40 = 20% of Item 77

This should be reported by the AMS as:

20% of Item 77 impairment of neck.

4. Thoracic Pain: Subject:

28-year old woman, Forestry Worker

History:

Struck by falling branch in mid-thoracic region. She fell to the ground and was pinned by the branch. She was conscious, though in severe pain in her neck and thoracic regions. She complained of tingling in both her legs and inability to move them. In EO imaging revealed wedge compression fracture of T8 and T9 with a spinous process fracture of T10. Some patchy sensory loss below T8 dermatome laterally with mild weakness in both lower limbs. As a result surgical stabilisation was undertaken. Over next 8 months there was a full return of power and sensation in both lower limbs.

Current Symptoms:

Pain and stiffness in the lower thoracic spine. No ongoing neurological symptoms. She was continuing with administrative duties. Undertaking normal ADL. Plain radiographs revealed healed vertebral body fractures at T8 and T9 with 20% compression of each. Surgical fusion at three levels across T7 to T10. Neurological examination was normal.

Diagnosis:

Fractures T8 and T9 vertebral body compression fractures, T10 spinous process fracture. Three level spinal fusion. No permanent neurological compromise.

Impairment Rating:

Operations requiring surgical ankylosis (fusion) are considered under DRE category IV. See AMA5 Box 15 –1 (p 383): Alteration of motion segment integrity. WPI is assessed using AMA5 Table 15–4 (p 389). This leads to an assessment of 20–23% WPI. In this case the lower figure of 20% is appropriate due to the good recovery of function of ADL.

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 76 p 94) impairment is:

100 x 20/60 = 33.3% of Item 76

This should be reported by the AMS as:

33% of Item 76 thoracic spine.

5. Upper Extremity: Subject:

30-year old woman, Process Worker

History:

Tripped and fell onto right outstretched hand, resulting in a painful and swollen right wrist. Limited movements because of pain. Light touch reduced palmar aspect of hand and fore and ring fingers. X-rays revealed fractures of scaphoid triquetrum and volar dislocation of lunate. Open reduction and internal fixation was undertaken. Rupture of scapholunate ligament and intact lunotriquetral ligament with attached fragment of triquetrum was seen at surgery. Internal fixation with k-wires and repair of volar and dorsal intracapsular ligaments undertaken. Subsequent x-rays at four months revealed united fractures with increased sclerosis of lunate and proximal pole of scaphoid. Median nerve function returned to normal.

Current Symptoms:

Pain-free but only 30° active wrist extension, 10° active radial deviation 15° active ulna deviation. Pronation and supination was normal. A return to keyboard work resulted in discomfort at 30 minutes and able to perform activities of daily living. X-rays show sclerosis of proximal pole of scaphoid and scapholunate angle of 65° and radiolunate of 15°. The scapholunate gap was 2mm.

Diagnosis:

Fracture of scaphoid, triquetrum with rupture of scapholunate and lunotriquetral ligaments resulting in surgical repair and stabilisation.

Impairment Rating:

Reduced wrist motion. AMA5 Section 16.4g Wrist motion impairment:

AMA5 Figure 16–28 (p 467): IF = 5%, IE = 4%

Figure 16–29 (p 468): IRD = 2%, IUD = 3%

These are added 5 + 4 + 2 + 3 = 14% UE Impairment

OR:

Carpal instability AMA5 Section 16.7, Table 16–25. The highest category in this case is mild, (8%) upper extremity impairment.

As the reduced motion and carpal instability reflect the consequences of the same pathology, only one method can be used (see p 499 of AMA5). The higher figure is used. The assessment is 14% UE impairment, or 8% WPI (AMA5 Table 16 3).

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 52 p 93) impairment is:

100 x 8/57 = 14 % of Item 52

This should be reported by the AMS as:

14% of Item 52 impairment of the arm below the elbow.

6. Partial amputation distal phalanx of thumb:

Subject:

36-year old man, Butcher

History:

A 36-year old butcher sustains a partial amputation of the distal phalanx of his left thumb.

Treatment:

He undergoes corrective surgery.

Clinical Findings:

The amputation is 50% of distal phalanx length. He has no residual sensory impairment or stump neuroma. Normal range of movement at the IP, MP and CMC joints.

Impairment Rating:

25% digit impairment, AMA5 Figure 16–4 (p 440).

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 62 p 93) impairment is:

100 x 25/50 = 50% of Item 62

This should be reported by the AMS as:

50% of Item 62 impairment of distal phalanx of thumb.

7. Crushed thumb:

Subject:

22-year old man, Factory Worker

History:

A 22-year old newly hired factory worker has his right dominant thumb caught in and crushed by a machine at work.

Treatment:

Fractures.

Immediate surgery (debridement), and staged reconstructions. Back at work 3 months after injury.

At maximum medical improvement one year after injury.

Clinical Findings:

- IP Joint: ankylosed at 40° (Fig 16–12 AMA5, p 456)
- MP Joint: ROM = 0–60° (Fig 16–15 AMA5, p 457)
- CMC Joint: Adduction lack = 6cm (Table 16–8b AMA5, p 459)
  Radial abduction = 0–30° (Table 16–8a AMA5, p 459)
  Opposition = 4cm (Table 16–9 AMA5, p 460)
- Sensation, circulation and skin coverage: all normal.
- Fractures: all healed without infection or malunion.

Impairment Rating:

- IP Joint ankylosis = 10% thumb impairment
- MP Joint ROM = 0%
- CMC Joint: Adduction lack = 8% thumb impairment
  Radial abduction = 5% thumb impairment
  Opposition = 9% thumb impairment

Total thumb impairment = 32% (for the thumb **add** digit impairment %

(Fig 16–1a AMA5, p 436)

Conversion Factor:

Using the conversion factor from WorkCover WA Guidelines (Item 56 p 93) the degree of permanent impairment for the purpose of a Schedule 2 assessment is:

32% of Item 56

This should be reported by the AMS as:

32% of Item 56 digit impairment (thumb)

Appendix 3: Working groups on permanent impairment

Permanent Impairment Co-ordinating Group 2001

Name	Position
Dr Jim Stewart	Chair
Ms Kate Mckenzie	WorkCover
Mr John Robertson	Labor Council of NSW
Ms Mary Yaager	Labor Council of NSW
Dr Ian Gardner	Medical Representative to Workers Compensation and Workplace Occupational Health and Safety Council of NSW
Dr Stephen Buckley	Rehabilitation Physician
Prof Michael Fearnside	Professor of Neurosurgery
Dr John Harrison	Orthopaedic Surgeon
Dr Jonathan Phillips	Psychiatrist
Professor Bill Marsden	Professor of Orthopaedic Surgery
Dr Dwight Dowda	Occupational Physician
Associate Professor Ian Cameron	Assoc Professor of Rehabilitation Medicine
Dr Robin Chase	Australian Medical Association
2005 Revisions	
Dr Roger Pillemer	Orthopaedic Surgeon
Dr John Dixon Hughes	General Surgeon
Dr Yvonne Skinner	Psychiatrist

Permanent Impairment Co-ordinating Committee 2008

Name	Position
Mr Rob Thomson	Chair
Ms Mary Yaager	Unions NSW
Dr Ian Gardner	Workers Compensation and Workplace Occupational Health and Safety Council of NSW
Associate Professor Michael Fearnside	Associate Professor of Neurosurgery, Neurosurgical Society of Australasia
Dr John Harrison	Orthopaedic Surgeon, Australian Orthopaedic Association, Australian Society of Orthopaedic Surgeons
Dr Yvonne Skinner	Psychiatrist, Royal Australian and New Zealand College of Psychiatrists
Professor Ian Cameron	Professor of Rehabilitation Medicine, Australasian Faculty of Rehabilitation Medicine
Dr Roger Pillemer	Approved Medical Specialist
Dr Michael Gliksman	Australian Medical Association
Dr Neil Berry	Royal Australasian College of Surgeons

Permanent Impairment Co-ordinating Committee 2013

Name	Position
Mr Gary Jeffery	Chair
Mr Kim Garling	WorkCover Independent Review Officer
Ms Alisha Wilde/Mr Shay Degaura	Unions NSW
Dr Mark Burns	Australian Faculty of Occupational and Environmental Medicine
Associate Professor Michael Fearnside	Associate Professor of Neurosurgery, Neurosurgical Society of Australasia
Dr John Harrison	Orthopaedic Surgeon, Australian Orthopaedic Association, Australian Society of Orthopaedic Surgeons
Dr Yvonne Skinner	Psychiatrist, Royal Australian and New Zealand College of Psychiatrists
Professor Ian Cameron	Professor of Rehabilitation Medicine, Australasian Faculty of Rehabilitation Medicine
Dr Roger Pillemer	Workers Compensation Commission, Senior Approved Medical Specialist
Dr Michael Gliksman	Australian Medical Association
Dr Neil Berry	Australasian College of Surgeons
Mr Kevin Gillingham	WorkCover WA
Mr David Caulfield/ Mr Phil Waddas	WorkCover SA
Ms Meg Brighton	WorkSafe ACT

Working Groups

Psychiatric and Psychological

Dr Julian Parmegiani
Dr Derek Lovell
Dr Rod Milton
Dr Yvonne Skinner
Dr Jonathan Phillips
Dr Chris Blackwell
Dr Bruce Westmore
Dr Susan Ballinger
Ms Lyn Shumack
Dr Jack White
Ms Sandra Dunn
Dr Tim Hannon

Hearing

Dr Brian Williams
Dr Joseph Scoppa
Dr Stanley Stylis
Dr Paul Niall
Associate Professor Ian Cameron

Spine

Prof Michael Fearnside
Dr John Cummine
Prof Michael Ryan
Dr Dwight Dowda
Assoc Prof Ian Cameron
Dr Hugh Dickson
Dr Conrad Winer
Dr Mario Benanzio
Dr Jim Ellis
Dr Jim Bodel
Dr William Wolfenden
Dr Kevin BleaseL
Dr John Harrison
Prof Sydney Nade

2005 Revisions

Dr Roger Pillemer

2008 Revisions

Dr Phillipa Harvey-Sutton
Cassock Prof Michael Fearnside
Dr Jim Bodel
Assoc Prof Michael Ryan
Dr Roger Pillemer
Prof Ian Cameron

2012 Revisions

Assoc Prof Michael Fearnside
Dr Phillipa Harvey-Sutton
Dr Jim Bodel
Associate Professor Michael Ryan
Dr Roger pillemer
Professor Ian Cameron

Urinary and Reproductive

Prof Richard Millard
Dr Kim Boo Kuah
Associate Professor Ian Cameron

Upper Limb

Dr Dwight Dowda
Assoc Prof Ian Cameron
Prof Bill Marsden
Assoc Prof Bruce Connelly
Dr David Crocker
Dr Richard Honner
Dr Jim Ellis
Dr Conrad Winer
Dr David Duckworth

2005 Revisions

Dr Roger Pillemer
Dr Graham Mcdougall
Dr Brian Noll
Dr Bruce Connelly

2012 Revisions

Dr Roger Pillemer
Dr John Harrison
Dr Brian Noll
Dr James Bodel
Dr John Cross
Dr Mark Burns
Dr Michael Gliksman
Dr Robert Breit
Prof Ian Cameron

Respiratory, Ear, Nose and Throat

Dr Julian Lee
Prof David Bryant
Dr Joseph Scoppa
Dr Michael Burns
Dr Frank Maccioni
Dr Peter Corte
Dr Brian Williams
Associate Professor Ian Cameron

Skin
Dr Victor Zielinski
Dr Scott Menzies
Dr Edmund Lobel
Associate Professor Ian Cameron

Cardiovascular
Dr Thomas Nash
Dr John Gunning
Dr George Michell
Dr Stephen Buckley
Dr Melissa Doohan
Dr Charles Fisher

Endocrine
Dr Alfred Steinbeck
Prof Peter Hall
Dr Stephen Buckley

Vision
Dr Michael Delaney
Dr Peter Duke
Dr Peter Anderson
Dr John Kennedy
Dr Neville Banks
Associate Professor Ian Cameron

Digestive
Prof Philip Barnes
Dr David De Carle
Dr Dwight Dowda
2012 Revisions
Dr Neil Berry
Dr John Garvey
Dr John Duggan
Dr Nick Talley
Dr David Johnson
Dr John Dixon-Hughes

Nervous System
Dr Stephen Buckley
Associate Professor Ian Cameron
Dr Dwight Dowda
Dr Ivan Lorentz
Dr Keith Lethlean
Dr Peter BLUM
Professor Michael Fearnside
Dr Tim Hannon
2012 Revisions
Associate Professor Michael Fearnside
Dr Mark Burns
Dr Ross Mellick
Professor Ian Cameron

Lower Limb
Dr Dwight Dowda
Associate Professor Ian Cameron
Professor Bill Marsden
Dr Peter Holman
Dr Jay Govind
Dr Jim Bodel
Dr Mario Benanzio
Dr Jim Ellis
Dr Conrad Winer
Dr Cecil Cass
Dr John Harrison
Dr John Korber
2008 Revisions
Dr Roger Pillemer
Dr John Harrison
Professor Ian Cameron
Dr Michael Gliksman
Dr Jim Bodel
Dr Robert Breit
Dr Ian Meakin
2012 Revisions
Dr Roger Pillemer
Dr John Harrison
Dr Brian Noll
Dr James Bodel
Dr John Cross
Dr Mark Burns
Dr Michael Gliksman
Dr Robert Breit
Professor Ian Cameron

Haematopoietic
Prof John Gibson
Dr Stephen Flecknoe
Dr Peter Slezak
Prof John Dwyer
Associate Professor Ian Cameron
Evaluation of permanent impairment arising from chronic pain
Associate Professor Michael Fearnside