# **DISCUSSION PAPER**

# EXECUTIVE SUMMARY

#### 1. TITLE

Permanent Disability Evaluation Schedule ("PDES") 2016 Review

#### 2. ISSUE

At issue is the 2016 Review of the PDES ("2016 Review"). The PDES is a guide set out in policy to assist in the calculation of permanent disability awards granted under the loss of function method of assessment. In 2014, the Policy, Regulation and Research Division ("PRRD") completed a comprehensive policy review of the PDES. As part of that review, the Board of Directors ("BOD") approved proceeding with an ongoing review of the PDES to ensure it remains current and effective.

#### 3. OVERVIEW

Medical and scientific methods and approaches to disability assessment evolve over time. It is therefore necessary that the PDES and associated policies are reviewed regularly to ensure the content remains current and is effectively applied in practice.

The proposed changes in the current review of the PDES include:

- Updates to sections not previously revised;
- Additional content from the Additional Factors Outline to support decisionmaking; and
- Minor consequential amendments including typographical errors and edits for clarification.

This paper provides a description of the proposed changes and three appendices including a comparison table of ratings in workers' compensation jurisdictions, a summary table of the changes and draft policy.

#### 4. FEEDBACK

Stakeholders are invited to provide feedback of the discussion paper, options, and any additional comments that may be relevant to the issue.

Stakeholder comments will be accepted until **November 30, 2016**. Contact information can be found in section 7 of the full discussion paper.



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At issue is the 2016 Review of the PDES ("2016 Review"). The PDES is a guide set out in policy to assist in the calculation of permanent disability awards granted under the loss of function method of assessment. In 2014, the Policy, Regulation and Research Division ("PRRD") completed a comprehensive policy review of the PDES. As part of that review, the Board of Directors ("BOD") approved proceeding with an ongoing review of the PDES to ensure it remains current and effective.

#### 3. BACKGROUND

#### 3.1 How this issue arose

In March 2014, the BOD approved amendments to the PDES following a comprehensive review by the PRRD.<sup>1</sup> The review clarified, consolidated and updated guidance on the assessment of permanent disabilities under the PDES. Much of the revision consolidated a practice document called the Additional Factors Outline ("AFO") into the PDES.

Also as part of that review, the BOD approved developing a process for the ongoing review of the PDES. After considering stakeholder feedback, the BOD determined that the PDES should be reviewed on an annual basis and form part of the PRRD's annual workplan consultation. The purpose of the annual review is to ensure that the PDES stays current with developments in the medical and scientific literature and other jurisdictions regarding disability assessment. The 2016 Review of the PDES is the first annual review.

#### 3.2 Law and Policy

Where a personal injury or occupational disease results in a permanent impairment, WorkSafeBC may grant the worker a permanent disability award. The *Workers Compensation Act ("Act")* sets out two methods of assessing permanent partial disability awards: the loss of function method, which must be applied in every case,<sup>2</sup> and the loss of earnings method, which is only applied in exceptional cases.<sup>3</sup>

Under the loss of function method, awards are calculated based on the worker's estimated impairment of earning capacity based on the nature and degree of the injury.

<sup>&</sup>lt;sup>3</sup> Section 23(3) of the Act.



<sup>&</sup>lt;sup>1</sup> Board of Directors Resolution Number: 2014/03/19-01.

 $<sup>^2</sup>$  Section 23(1) of the *Act*.

Estimated impairment of earning capacity reflects the extent to which a particular injury is likely to impair a worker's future earning ability.

The *Act* provides that WorkSafeBC may compile a rating schedule of percentages of impairment of earning capacity for specified injuries or diseases. That schedule is the PDES which is found in Appendix 4 of the *Rehabilitation Services & Claims Manual* Volume II ("*RS&CM*") and is used as a guide in determining the compensation payable for a worker's permanent partial disability.<sup>4</sup>

Loss of function assessments are completed once a worker reaches medical plateau.<sup>5</sup> Either a Disability Awards Medical Advisor ("DAMA") or an external service provider may conduct permanent impairment evaluations. Through these evaluations, a worker's level of function is determined.

Based on the permanent impairment evaluation, the appropriate percentage of disability from the PDES is applied to the worker's long-term average net earnings, and the loss of function award is 90 per cent of this amount. When a loss of function award is calculated with reference to the PDES, it is referred to as a scheduled award.

The *Act* provides that decisions regarding the application of the PDES may not be appealed to the Workers Compensation Appeal Tribunal ("WCAT") where the specified percentage has no range or has a range that does not exceed five per cent.<sup>6</sup> This provision is aimed at balancing the competing values of preserving adequate appeal rights with the efficiency and timeliness of decision-making.<sup>7</sup>

### 3.3 2016 Review of the PDES

The 2016 review of the PDES was led by a committee including staff from Clinical Services (Chief Medical Officer, Disability Awards Medical Advisor, Senior Manager), Disability Awards, Client Services, as well as the Evidence Based Practice Group.

Information from the following was considered in the review process:

- Current medical literature on medical/scientific diagnostic criteria for assessment of permanent impairment;
- American Medical Association's Guides to the Evaluation of Permanent Impairment ("AMA Guides"), 5<sup>th</sup> and 6<sup>th</sup> Editions;
- Workers' Compensation Appeal Tribunal and Review Division decisions; and
- DAMA meeting minutes.

<sup>&</sup>lt;sup>7</sup> See WCAT-2005-02034.



<sup>&</sup>lt;sup>4</sup> Section 23(2) of the *Act*.

<sup>&</sup>lt;sup>5</sup> Policy item #39.01, Decision-Making Procedure under Section 23(1) of the RS&CM.

<sup>&</sup>lt;sup>6</sup> Section 239(2)(c) of the Act.

The majority of proposed changes to the PDES for 2016 were identified following implementation of the PDES in 2015. The changes can be classified as follows:

- Updates to sections not previously revised;
- Additional content from the AFO to support decision-making; and
- Minor consequential amendments including typographical errors and edits for clarification.

The changes identified for this review include: Peripheral Nervous System Conditions, Nerve Root Conditions, Traumatic Hearing Loss, Vestibular Disorders, Respiratory System Conditions and Other Skin Conditions.

It should be noted that additional policy revisions related to the PDES are proceeding as separate policy projects. The PRRD is currently working on a policy review of the chronic pain policies and a separate review of the Range of Motion method in assessing disabilities of the spine.

### 4. OTHER JURISDICTIONS

#### 4.1 General

Five Canadian jurisdictions use their own schedule or guide for assessment of permanent impairments, while six jurisdictions use the AMA Guides exclusively (see table in Appendix A, Comparison of Ratings in Workers' Compensation Jurisdictions).

Of the six jurisdictions that use their own schedule, it is important to be aware that the majority of jurisdictions surveyed have their own unique approaches to administering workers' compensation benefits, and use the ratings in their schedules to provide compensation in different ways. For example, ratings may:

- be used to assess different types of disability or impairment;
- be applied to different amounts (from a worker's actual earnings to a set amount prescribed by statute); and
- result in awards that are payable over varying time periods.

In addition, jurisdictions vary in their approaches to adding and/or combining ratings, enhancement and devaluation. When these approaches are taken into consideration, British Columbia ratings for multiple impairments will often be higher than other jurisdictions.

It is also important to note that it is difficult to compare the ratings in the PDES to the AMA Guides due to differences in how permanent impairment is calculated, and the use



of combined values chart. Combining ratings always results in a lower rating than adding the ratings. WorkSafeBC does not combine ratings in the PDES.<sup>8</sup>

# 4.2 Conditions Addressed in the 2016 Review

The table in Appendix A is a comparison of rating values from the PDES and other jurisdictions for the conditions proposed for addition to or revision in the PDES.

Many of the changes addressed in the 2016 Review are consequential amendments and edits for clarification. Changes to rating values for existing conditions are only proposed for one condition, permanent tracheostomy, which, while lower than the other jurisdictions that use the AMA Guides, the proposed increase represents a significant increase from the current value.

In addition, a new condition is proposed for inclusion, impairment of the obturator nerve. The rating values proposed for this condition are suggested to be the same as the PDES rating for a similar nerve and are very similar to the ratings in other jurisdictions which rely mostly on the AMA Guides to rate this condition.

### 5. DISCUSSION

The proposed changes in the 2016 Review include updates, additional content to support decision-making and minor consequential amendments such as typographical edits for clarification. See Appendix B for description of typographical errors.

The following conditions were identified for review in 2016:

#### 5.1 Nerves

#### 5.1.1 Peripheral Nervous System Conditions

#### a) Loss of peripheral nerve

Allodynia, hyperesthesia and dysesthesia are proposed for addition to the criteria for assessing loss of function of a peripheral nerve. As impaired nerve function can result in multiple symptoms, this change was suggested by Clinical Services in order to provide more accurate assessment criteria on the effects of peripheral nerve injury.

#### b) Table of Awards for Peripheral Nerve Conditions

Three minor changes are proposed for the Table of Awards for Peripheral Nerve Conditions. First, the sensory and motor components of the long thoracic nerve were reversed in the table and are now proposed for correction.

<sup>&</sup>lt;sup>8</sup> An exception to this is for ratings for the loss of function of an extremity to ensure the value does exceed the overall rating for amputation of that extremity. See Appendix 4, page A4-8 for information on devaluation.



Second, the lateral cutaneous nerve of the forearm is the same nerve anatomically as the sensory portion of the musculocutaneous nerve of the brachial plexus. Therefore, the values for both nerves should be equal and are proposed to be in this review.

Third, impairment of the obturator nerve is a new condition being proposed for inclusion in the PDES. Currently, the table includes the three main nerves in the arm (i.e., radial, median and ulnar nerves). However, only two of the three main nerves in the leg are currently included (i.e., femoral and sciatic). Inclusion of the obturator nerve would complete the guidance for nerve conditions in the PDES. This is important as injury to this nerve may cause significant functional impairment of the leg.

# 5.1.2 Nerve Root Conditions

A change is proposed to the Criteria for Assessing Loss of Nerve Root Function to parallel the changes to the Criteria for Assessing Loss of Peripheral Nerve Function, under Peripheral Nervous System Conditions (see *5.1.1* above).

# 5.2 Traumatic Hearing Loss

The proposed changes to hearing loss are for the purposes of clarifying rating of unilateral traumatic hearing loss. Unilateral traumatic hearing loss measurement is based on the difference in hearing between both ears. The word "difference" was added to the title of the table on unilateral traumatic hearing loss and in the text description below the table to add clarification to how it is measured.

### 5.3 Vestibular Disorders

The current wording in the table for vestibular disorders does not specify whether the source of objective information is to be obtained from physical examination or more currently used tests. The proposed changes were requested by Clinical Services to reduce testing required and wait times for workers. The new wording allows for an alternate approach to extensive testing while still retaining the intent and classification scheme of the original table.<sup>9</sup>

Vestibular disorders are rated according to criteria set out in five grades. Changes are proposed to the criteria in each of the grades in order to update the descriptions based on the AMA Guides, 6<sup>th</sup> Edition. The new table provides greater information regarding history, physical examination and diagnostic or other objective findings in assessment of vestibular disorders.

# 5.4 Respiratory System Conditions

Changes are proposed to both the upper and lower respiratory system conditions. For the upper respiratory system conditions section, an increase in the rating for permanent tracheostomy is proposed.

<sup>&</sup>lt;sup>9</sup> It should be noted that Grade 1 in the previous table is equal to Grade 0 in the proposed revised table. Both have a percentage of 0.



For lower respiratory system conditions, the addition of three conditions (hypersensitivity pneumonitis, lung cancer and pneumoconiosis) from the AFO is proposed. In addition, DAMAs proposed changes in this section to result in a greater focus on assessment and testing rather than diagnosis and symptomology. Information that was deemed to be less relevant for impairment assessment is proposed for deletion. These changes result in a section that is more readable. Minor editorial changes are also proposed.

# 5.4.1 Permanent Tracheostomy

The 2016 Review identified permanent tracheostomy as a condition that should be updated to more appropriately reflect the impact of the impairment on earning capacity. The rating is proposed to increase from 2 per cent to 10 per cent of whole body impairment to provide a worker with a permanent tracheostomy the same award value as the maximum value for a worker with a significant tracheal obstruction. The impact of the two impairments are viewed to be similar.

### 5.4.2 Hypersensitivity Pneumonitis, Lung Cancer and Pneumoconiosis

These lower respiratory conditions occur relatively infrequently, and were therefore not selected to be moved into the PDES from the AFO in the previous revision of the PDES. However, Clinical Services advised that guidance in the respiratory section would be more complete with the addition of these three respiratory conditions from the AFO.

A section on "*Permanent Impairment Due to Respiratory Disorders*" from the AFO is also proposed for inclusion to provide greater clarification to the rating method. Minor editorial changes are also proposed.

The addition of these lower respiratory sections, along with the section on Other Skin Conditions below, would fully consolidate guidance into the PDES, making the AFO redundant and allowing it to be removed from practice.

### 5.5 Other Skin Conditions

The rating table on other skin conditions proposed for addition to the PDES was contained in the AFO. Following implementation of the PDES, DAMAs and Disability Awards Officers indicated that this section of the AFO was still in use as a reference source. Therefore, it is proposed for inclusion in the PDES to consolidate guidance on skin conditions. No changes have been made to the table as it reads in the AFO. The proposed table reflects long standing practice.

### 5.6 Loss of Range of Motion

Two changes are proposed related to loss of range of motion. The first change proposed is to wording. Sections of the PDES provide that a loss of range of motion of *less than five degrees* generally does not impair a worker's earning capacity to an



ascertainable degree.<sup>10</sup> This wording suggests that an award would be granted for loss of five degrees or more and was introduced in the 2014 revision of the PDES. It was an unintended consequence to change the degree threshold for an impairment rating.

Previously, the relevant wording referred to range of motion of *five degrees or less*, suggesting that an award is granted for loss of six degrees or more. Proposed is reverting to this original wording of *five degrees or less*. It is important to note that in practice, workers who were assessed for loss of range of motion were not impacted by the revised wording.

During consultation on the comprehensive review of the PDES, stakeholders submitted concerns that the Range of Motion ("ROM") method lacks validity and reliability for the purposes of rating impairment, even when used by experienced evaluators. In particular, stakeholders were concerned with the ROM method in assessing impairment of the spine. In response to this, the Evidence Based Practice Group at WorkSafeBC recommended that a systematic review be commissioned to further investigate the validity and reliability of the ROM and other methods in assessing permanent impairment of the spine in the context of the workers' compensation system. The PRRD has since commissioned a systematic review with a goal to inform accurate and consistent medical assessment of impairments of the spine.

The second change proposed is to clarify the range of motion values for the subtalar joint. The range of motion of the subtalar joint is assessed as a fraction of full inward (inversion) and outward (eversion) movement. However, only one value for loss of range of motion is assigned, a combination of both inversion and eversion values. The proposed changes align with this rating method.

The two changes proposed above will provide clarity to DAMAs who assess permanent impairment using range of motion.

# 5.7 Claims Data and Financial Impact

As the proposed changes do not result in significant changes to practice, it is anticipated that there will be minimal additional costs.

The proposed changes to musculocutaneous and long thoracic nerves, vestibular disorders, hearing loss and the additions of skin and respiratory conditions align with current practice and therefore are not expected to have any financial impact.

The PRRD worked with the Business Information and Analysis department to retrieve data regarding the number of permanent disability awards provided for permanent tracheostomy and obturator nerve. Data regarding these conditions is difficult to obtain because the ratings are calculated manually and not coded for statistical analysis. The PRRD also consulted with DAMAs whose particular specialization is used for assessing these conditions and confirmed that these two conditions are uncommon with respect to permanent impairment.

<sup>&</sup>lt;sup>10</sup> The PDES provides less than three degrees for spine. Emphasis added.



#### 5.7.1 Permanent Tracheostomy

An increase in the rating value for permanent tracheostomy is proposed from two to 10 per cent. This permanent condition is relatively rare with only approximately half a dozen workers with this condition currently receiving a permanent impairment award. Therefore, the cost implications of this increase would not be significant.

#### 5.7.2 Obturator Nerve

This is a new condition proposed for inclusion in the PDES with values equal to what is provided for the femoral nerve. Similar to permanent tracheostomy, this condition is relatively rare and less than a dozen workers are currently receiving a permanent impairment award for this condition, with no financial impact expected.

#### 6. OPTIONS AND IMPLICATIONS

#### **Option 1: Status quo**

#### Implications

- Policy would not be updated to reflect current medical and scientific approaches.
- The Respiratory Disorders section would not be current.

#### **Option 2: Adopt the proposed changes to the PDES**

Under this option, all of the proposed changes to the PDES would be adopted.

#### Implications

- Policy would be updated to reflect current medical and scientific approaches.
- Revisions would provide clarification and consistency.
- The Respiratory Disorders section would be updated.
- Workers with a permanent tracheostomy would receive 10 per cent, up from two per cent.
- Additional conditions would be added.
- The Additional Factors Outline would become redundant and cease to be used in practice.



#### 7. CONSULTATION

Stakeholders are invited to provide feedback on the discussion paper, options, draft policy, and any additional comments that may be relevant to the issue.

Stakeholder comments will be accepted until **November 30, 2016**. When responding, please provide your name, organization, and address. Comments may be sent by mail, fax or e-mail to:

By e-mail: policy@worksafebc.com

By mail: Candace Miller Policy Analyst Policy, Regulation and Research Division WorkSafeBC P.O. Box 5350, Stn. Terminal Vancouver, B.C. V6B 5L5

By fax: 604 279-7599

Please be advised that stakeholders will not be contacted regarding the contents of their submissions unless clarification is needed.

WorkSafeBC's governing body, the Board of Directors, will consider stakeholder feedback before it adopts any amendments to the current policies.

Please note that all comments become part of the Policy, Regulation and Research Division's database and may be published, including the identity of organizations and those participating on behalf of organizations. The identity of those who have participated on their own behalf will be kept confidential according to the provisions of the *Freedom of Information and Protection of Privacy Act.* 



# APPENDIX A **COMPARISON OF RATINGS IN WORKERS' COMPENSATION JURISDICTIONS**

	BC (Current PDES)	BC (AFO)	BC (Proposed PDES)	АВ	МВ	NB	NL	QC	AMA Guides 6 <sup>th</sup> Ed
VI. Lower Extremity									
B. Partial Loss of Range of Motion									
Subtalar	-	-	0-4.25 (full, ¾, ½, ¼ )	Loss of ROM /normal full movement x 6.25%	List expected ROM for inversion and eversion (30° and 20°) <sup>11</sup>	Subtalar arthrodesis 0-10	Subtalar arthrodesis 0-10	2-3 No distinction between inversion and eversion	0.8-2 (Table 16-20) (Figure 16-6)
Inversion	0-4.25 (full, ¾, ½, ¼ )	-	Distinction between inversion and eversion to be removed.	No distinction	(Expected ROM minus measured ROM) x 15%	-	10°- 20° = 2% LEI = 1% WPI <sup>12</sup> 0°- 9° = 5% LEI = 2% WPI	-	Mild=10°-20° Moderate=0°-9°
Eversion	0-4.25 (full, ¾, ½, ¼ )	-	Distinction between inversion and eversion to be removed.	No distinction	(Expected ROM minus measured ROM) x 15%	-	0°-10° = 2% LEI	-	Mild=0°-10°
VIII. Peripheral Nervous System Conditions									
Musculocutaneous Nerve of the Brachial Plexus (sensory)	Normal = 0 Mild=0.375 Moderate=0.75 Marked=1.125 Complete=1.5	-	Normal = 0 Mild=0.5 Moderate=1.0 Marked=1.5 Complete=2.0	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	24	0-2 (Table 15-21)
Obturator Nerve (sensory and motor)		-	Sensory/Motor Normal = 0/0 Mild=0.625/2.5 Moderate = 1.25/5 Marked = 1.875/7.5 Complete = 2.5/10	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	AMA Guides 6 <sup>th</sup> Ed	12	0-3 (motor) 0-1 (sensory) (Table 16-12)

<sup>12</sup> 



<sup>11</sup> Included in Ankle rating inclusive of talocrural joint. No separate rating for subtalar joint. Measurements done in 5 degree increments. Lower extremity impairment ("LEI"), Whole Person Impairment ("WPI").

#### APPENDIX A COMPARISON OF RATINGS IN WORKERS' COMPENSATION JURISDICTIONS

	BC (Current PDES)	BC (AFO)	BC (Proposed PDES)	AB	МВ	NB	NL	QC	AMA Guides 6 <sup>th</sup> Ed
XXI. Respiratory System Conditions									
Permanent Tracheostomy	2	-	10	25	Up to 5% when resulting from cancer	AMA Guides 6 <sup>th</sup> Ed	AMA Guides <sup>13</sup>	30	25 (Table 11-6)
Hypersensitivity Pneumonitis*		Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests		0-100 <sup>14</sup>	AMA Guides 6 <sup>th</sup> Ed	Based on objective testing (i.e. Pulmonary Function Testing)	0-100 Based on evaluation of pulmonary function (Chapter 16)	0-65 (Table 5-4)
Pneumoconiosis*		Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	0-100	0-100 <sup>15</sup>	AMA Guides 6 <sup>th</sup> Ed	Based on objective testing (i.e. Pulmonary Function Testing)	0-100 Based on evaluation of pulmonary function (Chapter 16)	0-65 (Table 5-4)
Lung Cancer*		Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	0-100	0-100 <sup>16</sup>	AMA Guides 6 <sup>th</sup> Ed	Based on objective testing (i.e. Pulmonary Function Testing)	0-100 Based on evaluation of pulmonary function (Chapter 16)	0-65 (Table 5-4)
Permanent Impairment Due to Respiratory Disorders*		Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests	Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests		0-100 <sup>17</sup>		Based on objective testing (i.e. Pulmonary Function Testing)	0-100 Based on evaluation of pulmonary function (Chapter 16)	0-65 (Table 5-4)

<sup>&</sup>lt;sup>13</sup> There may be an associated cosmetic impairment rating added to the WPI.

<sup>&</sup>lt;sup>17</sup> Covered under pulmonary rating system if accepted as compensable diagnosis.



<sup>&</sup>lt;sup>14</sup> Covered under pulmonary rating system if accepted as compensable diagnosis. Pulmonary rating system under review in the future.

<sup>&</sup>lt;sup>15</sup> Covered under pulmonary rating system if accepted as compensable diagnosis.

<sup>&</sup>lt;sup>16</sup> Covered under pulmonary rating system if accepted as compensable diagnosis.

#### APPENDIX A COMPARISON OF RATINGS IN WORKERS' COMPENSATION JURISDICTIONS

	BC (Current PDES)	BC (AFO)	BC (Proposed PDES)	AB	МВ	NB	NL	QC	AMA Guides 6 <sup>th</sup> Ed
XXIII. Contact Dermatitis									
Other Skin Conditions*		0-50	0-50	AMA Guides 6 <sup>th</sup> Ed	Disfigure- ment <sup>18</sup> 0-25	-	AMA Guides 6 <sup>th</sup> Ed	Maximum Percentage for body area x Percentage of anatomical area impaired x Coefficient of anatomico- physiological impairment (1-10% maximum percentage per body segment) Chapter 14	0-58 (Table 8-2, 8-3) Based on size and function

This table was prepared by WorkSafeBC for general information purposes only and is current to January 2016. Individual workers' compensation boards/commissions should be contacted for specific or additional information and clarification. AB-Alberta Permanent Clinical Impairment Guide; MB-Permanent Impairment Rating Schedule;NB-Permanent Physical Impairment Rating Schedule; NL-Permanent Functional Impairment Rating Schedule; Quebec-Annotated Scale of Bodily Injuries Regulation.

<sup>&</sup>lt;sup>18</sup> Covered under cosmetic impairment rating system if there is permanent scarring associated with the accepted condition.



Page in the PDES	Proposed Section	Proposed Change	Rationale
Table of Cor	itents		
Pg. A4-4		XXIII. Contact Dermatitisology	Editorial.
I. Introductio	n		
Pg. A4-5		It is not possible to list every disability in the Schedule. However, the Schedule can be used for guidance if a disability is similar to one that is listed. If a disability is not covered in the Schedule, other information regarding disability assessment may be consulted, including expert medical opinion, current medical/scientific literature and schedules from other and jurisdictions and organizations.	Editorial.
III. Upper Ex	tremity		
Pg. A4-10	C. Partial Loss of Range of Motion	A loss of range of motion of less than five degrees <b>or less</b> generally does not impair a worker's earning capacity to an ascertainable degree.	Clarification.
Pg. A4-12	E. Miscellaneous Conditions and Surgical Procedures	Resurfacing or partial arthroplasties merit the same disability rating as a complete arthroplasty.	Added for consistency with section I. Miscellaneous Conditions and Surgical Procedures for conditions of the VI. Lower



			Extremity (pg A4-
			30). It is based on
			the rationale that
			resurfacing or
			partial
			arthroplasties have
			the same post-
			operative
			complications and
			issues as
			complete
			arthroplasty.
			Consensus
			regarding this
			practice was
			reached in
			consultation with
			Orthopedic
			Specialists.
V. Hands			
Pg. A4-16	C. Partial Loss of	A loss of range of motion of less than five degrees or less generally	Clarification.
	Range of Motion	does not impair a worker's earning capacity to an ascertainable degree.	
VI. Lower Ex	tremity		
Pg. A4-28	F. Partial Loss of	A loss of range of motion of less than five degrees or less generally	Clarification.
	Range of Motion	does not impair a worker's earning capacity to an ascertainable degree.	
Pg. A4-29	F. Subtalar joint	Subtalar <sup>1</sup> /4, <sup>1</sup> /2, <sup>3</sup> /4 <b>or full</b>	Best practices in
Ŭ	,	Inversion	, measurement.
		Eversion $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ or full	



VIII. Periphe	ral Nervous System	Conditions				
Pg. A4-33	A. Criteria for Assessing	1. Sensory Normal		No loss of fur	nction	Additional wording better describes
	Peripheral Nerve	Mild		Slight paresth allodynia/hy	nesia/hypesthesia <b>(or</b> peresthesia/dysesthesia)	symptoms.
	Function	Moderate		Moderate par allodynia/hy	esthesia/hypesthesia <b>(or</b> peresthesia/dysesthesia	
		Marked		As above (mo ulcers/trophic paresthesia/h allodynia/hy	oderate) + loss of stereogn changes or marked hypesthesia <b>(or</b> peresthesia/dysesthesia)	osis +
		Complete		No sensation		
Pg. A4-34	B. Table of Awards for Peripheral Nerve Conditions – Long Thoracic Nerve	Normal Mild Moderate Marked Complete	Sens Ən/a 2n/a- 3n/a 4n/a 5n/a	ory	Motor <del>n/a</del> 0 <del>n/a</del> 2 <del>n/a</del> 3 <del>n/a</del> 4 <del>n/a</del> 5	The rating values for the sensory and motor nerve are switched as a correction (i.e., there is no sensory portion of the long thoracic nerve).
Pg. A4-34	b. Table of Awards for Peripheral Nerve Conditions – Musculocutaneous nerve of the brachial plexus	Normal Mild Moderate Marked Complete	0 .375 1 <del>.75</del> 1. <del>12</del> 5 <del>1.5</del> 2	5 5		lateral cutaneous nerve of the forearm is in fact the sensory portion of the musculocutaneous nerve of the brachial plexus by



					another name. Therefore, their sensory values should be the identical.
TBD	B. Table of Awards for Peripheral Nerve Conditions – <i>Obturator nerve</i>	Normal Mild Moderate Marked Complete	Sensory 0 0.625 1.25 1.875 2.5	Motor 0 2.5 5 7.5 10	Proposed as a new condition to be added to the PDES with rating values the same as a similar nerve, the femoral nerve.
IX. Nerve Ro	ot Conditions				
Pg. A4-38	A. Criteria for Assessing Loss of Nerve Root Function	1. Sensory Normal Mild	No loss of functio Slight paresthesia allodynia/hypere	on a/hypesthesia <b>(or</b> e <b>sthesia/dysesthesia)</b>	Additional wording better describes the condition and symptoms.
		Moderate	Moderate paresth allodynia/hypere	nesia/hypesthesia (or esthesia/dysesthesia)	
		Marked	As above (moder ulcers/trophic cha paresthesia/hype <b>allodynia/hyper</b> e	rate) + loss of stereognosis + anges or marked esthesia <b>(or</b> esthesia/dysesthesia)	
		Complete	No sensation		
X. Spine					
Pg. A4-42	A. General	A loss of range of mo less generally does n	tion in the spine of l <del>e</del> ot impair a worker's	<del>ess than</del> three degrees <b>or</b> earning capacity to an	Clarification.



		-		
		ascertainable degree.		
XI. Central N	ervous System Con	ditions		
Pg. A4-49	G. Impairments of the Upper Extremities	Grade 2 Individual can use the involv grasp and hold objects with difficulty, 4 <b>2</b> 4	ed extremity for self-care, can but has no digital dexterity 10 –	Correction.
XIII. Traumat	ic Hearing Loss			
Pg. A4-54	A. Unilateral Traumatic Hearing Loss	A. Unilateral Traumatic Heari	ng Loss	To ensure clarification in how unilateral traumatic
		Difference in <del>L</del> loss of hearing in decibels (dB) measured in affected ear (ANSI)	Percentage	hearing loss is measured (i.e., difference between both ears).
		20 – 29	1	
		30 – 39	2	
		40 or more	3	
		The loss of hearing due to the competing the first column is the <b>difference ir</b> thresholds of hearing measured in ear audiometry at frequencies of 500, 1,0	ensable condition expressed in dB <b>n the</b> arithmetic average of ich ear in turn by pure tone 100, 2,000 and 3,000 Hz.	
XV. Ear, Nos	e and Throat Condi	tions		
Pg. A4-57	A. Vestibular	The following table is adapted from the AM	A Guides, <b>56</b> <sup>th</sup> Edition.	Ensure



Disorders	Grade 1	Symptoms or signs of vestibular disequilibrium present without supporting objective findings AND Activities of daily living can be performed without assistance	θ	descriptions are current with recent medical science and provide clearer guidance
	<del>Grade 2</del>	Symptoms or signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance except for complex activities such as bicycle riding or certain types of demanding activities related to individual work, such as walking on girders or scaffolds	<del>0—10</del>	to decision- makers.
	Grade 3	Symptoms or signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance except for simple activities such as self care, some household duties, walking and riding in a motor vehicle operated by another person	<del>11 -</del> <del>30</del>	
	Grade 4	Symptoms and signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance, except self care.	31— 60	
	<del>Grade 5</del>	Symptoms and signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living cannot be performed without assistance except self care not requiring ambulation AND Home confinement is necessary	<del>61 -</del> <del>95</del>	



			_
Grade	Symptoms of vestibular disequilibrium present without		
0	supporting objective findings	0%	
	AND		
	Activities of daily living can be performed without assistand		
	No confirmable physical findings		
-	No confirmable diagnostic findings with specific laboratory tests		
Grade	Symptoms of vestibular disequilibrium present consistent with objective findings	1- 10%	
1		1070	
	Activities of daily living can be performed but may have		
	difficulties with complex tasks such as bike riding or		
	working at heights		
	No confirmable findings or mildly abnormal gait,		
	Romberg, other findings		
	Abnormal findings on ENG, VNG, positional nystagmus or		
	abnormal caloric response may be present		
Grade	Symptoms of vestibular disequilibrium present consistent	11-	
2	with objective findings	30%	
	AND		
	Activities of daily living cannot be performed without		
	assistance except for simple activities		
	Unsteady gait, abnormal Romberg		
	Abnormal vestibular testing, or abnormal caloric		
	response, CNS signs, or posturography		
Grade	Symptoms of vestibular disequilibrium present consistent	31-	1
3	with objective findings	60%	
	AND		
	Activities of daily living cannot be performed without		
	assistance except self-care		
	Difficulty walking with assistance		
	woderately abnormal ENG or VNG, moderate sway or		
Crode	Sensory tests on posturography, may have aphormal MRI	64	
Grade	Symptoms of vestibular disequilibrium present consistent	01-	
4		90%	
	Activities of daily living cannot be performed without		
	Astrained of daily infing carnot be performed without		1



XVIII. Uroger Pg. A4-80	nital Tract Condition	assistance except self-care not requiring ambulation         Difficulty standing or walking without assistance         Severely abnormal ENG, VNG and severely abnormal         posturography, may have abnormal brain MRI	Editorial.
	Tract Disease	Note: A claimantworker with only one functioning kidney may have normal rental function due to the efficiency of the remaining kidney; however, the normal safety factor is lost. Value for a claimantworker with one functioning kidney loss is 15%.	
XXI. Respira	tory System Conditi	ons	
Pg. A4-86	B. Upper Respiratory System Conditions- Permanent Tracheostomy	Permanent tracheostomy 210	To be more consistent with other jurisdictions and provide appropriate compensation for the impairment.
Pg. A4-87	C. Lower Respiratory System Conditions	<ul> <li>Symptoms         <ul> <li>Symptoms</li> <li>(a) Dyspnea</li> <li>most common symptom in pulmonary impairment.</li> <li>non-specific - cardiac, hematologic metabolic, neurologic, psychological or physical fitness causes</li> </ul> </li> <li>American Thoracic Society (ATS) Classification of Dyspnea</li> </ul>	Diagnostic and clinical information removed in order to focus section on impairment assessment and testing. Editorial changes also proposed.



	Severity Question/Res	Definition by Historical ponse	
	Mild	Do you have to walk more slowly on the level than people of your age because of breathlessness?	
	Moderate	Do you have to stop for breath when walking at your own pace on the level?	
	Severe	<ul> <li>Do you ever have to stop for breath after</li> <li>walking about 100 yards or for a few minutes on the level?</li> </ul>	
	Very Severe	Are you too breathless to leave the house, or breathless on dressing or undressing?	
<del>(b)</del>	) Cough		
	Document		
	<del>⊖ presenc</del>	e/absence	
	<del>o producti</del>	ve/non-productive	
	$\circ$ relations	ship to work	
	- duration		
	<del>o nemopt</del> y	<del>/SIS</del>	
	Chronic bronchitis	= sputum-producing cough that occurs	
	on most days for a	at least 3 consecutive months a year for	
	at least 2 consecu	tive years (ATS criteria)	



<ul> <li>Hemoptysis</li> <li>Conditions that are often associated with hemoptysis include bronchogenic carcinoma, pulmonary emboli, bronchiectasis, tuberculosis, aspegilloma, and arteriovenous malformations.</li> </ul>	
<ul> <li>(d) Wheezing         <ul> <li>high pitched musical sounds</li> <li>inspiratory or stridor suggests laryngeal causes</li> <li>expiratory suggests bronchospasm</li> </ul> </li> </ul>	
<ul> <li>(e) Symptoms Due to Thoracic Cage Abnormalities</li> <li>Such as spinal abnormalities (e.g. Kyphoscoliosis).</li> <li>Respiratory compromise is produced by a combination of restricted lung volume, decreased cross-sectional area of the vascular bed, and decrease in chest wall compliance which occurs with age.</li> </ul>	
<ul> <li>Progressive stiffness of the chest wall with age increases the work of breathing and causes hyperventilation. Hypoxia is a powerful pulmonary vasoconstrictor and further decreases vascular cross- sectional area, leading to cor pulmonale.</li> <li>Judge severity of respiratory impairment on criteria</li> </ul>	
<ul> <li>listed in "Forced Expiratory Maneuvers", "Diffusing Capacity for Carbon Monoxide" and other criteria for rating impairment due to respiratory disease provided.</li> <li><b>3.</b> Tobacco Use and Environmental Exposure</li> </ul>	



(a) Tobacco Use
<ul> <li>Standard measure of "pack years":</li> </ul>
number of years x number of packs of smoking smoked per day
<ul> <li>Most frequent cause of chronic bronchitis, emphysema, and lung cancer, and can exacerbate asthma.</li> </ul>
<ul> <li>Risk of bronchogenic carcinoma decreases progressively in the first 10-15 years after quitting smoking, stabilizing at a point slightly higher than someone who has never smoked.</li> </ul>
(b) Environmental Exposure
<ul> <li>Exposure to toxic materials, irritative gases, fumes, mists or vapours, organic materials, fibrogenic dust, bioaerosols, paints, glues, pesticides and allergens as well as pets, cool-mist vaporizers, humidifiers, indoor hot tubs and chlorinated and ozonated swimming pools all may cause, or exacerbate respiratory disease.</li> </ul>
4. Evaluation of Respiratory Disease
(a) Physical Examination
<ul> <li>Noisy breath sounds may indicate airflow obstruction.</li> </ul>
Pursed lip breathing during expiration may suggest

chronic obstructive pulmonary disease (COPD).	
<ul> <li>Inspiratory crackles heard in two thirds of people with chronic interstitial lung disease may be associated with restrictive respiratory impairment.</li> </ul>	
<ul> <li>Wheezes or rhonchi indicate bronchial abnormalities and are often heard in obstructive airway disease.</li> </ul>	
<ul> <li>Cyanosis unreliable indicator of severe pulmonary impairment, and requires pulse oximetry or arterial blood gas analysis for confirmation.</li> </ul>	
<ul> <li>Vitals, including oxygen saturation</li> </ul>	
Posture	
Breath sounds	
Central cyanosis	
<ul> <li>Digital clubbing associated with pulmonary fibrosis, bronchiectasis, bronchogenic carcinoma, pleural tumours, lung abscess, empyema and cyanotic congenital heart disease.</li> </ul>	
<del>(b) Chest X-ray</del>	
<ul> <li>Initial posteroanterior and lateral views in full inspiration</li> </ul>	



<del>(c)</del>	Computed Tomography (CT) - High-Resolution CT	
	<ul> <li>More sensitive in evaluating certain pulmonary disasses such as ashastasis</li> </ul>	
	<ul> <li>Conventional CT - 10 mm thick slices. Good for high radiographic attenuation lesions.</li> </ul>	
	<ul> <li>HRCT - 1-2 mm thick slices. Good for low radiographic attenuation lesions.</li> </ul>	
	<ul> <li>HRCT delivers significantly less whole body effective dose radiation than standard CT.</li> </ul>	
(d <b>a</b> )	Forced Expiratory Maneuvers (Simple Spirometry)	
	<ul> <li>Spirometric testing equipment, calibration, and administration techniques must conform to the guidelines of the 1994 ATS Statement on Standardization of SpirometryATS/ERS Standardisation of spirometry statement (2005).</li> </ul>	
	• If tolerated by the claimantworker, remove pulmonary medications up to 24 hours before spirometry or methacholine challenge testing to assess pulmonary function without the effects of medication.	
	<ul> <li>To use pulmonary function measures, obtain measurements of the FVC, FEV1, and Dco (Diffusing</li> </ul>	



Capacity for Carbon Monoxide). and compare these to the appropriate predicted normal value tables in Appendix B. (Pulmonary Function Tables I, III, V, VII, IX and XI) For the average or mean predicted normal value, find the individual's age in the left-hand column and height along the top row; the predicted value lies at the intersection of the appropriate row and column. In addition, identify the lower limit of normal for the measure in question by using the appropriate predicted lower limit value tables in Appendix B. (Pulmonary Function Tables II, IV, VI, VIII, X, and XII) The lower limit of normal has been calculated based upon the standard convention of the lower limit of normal lying at the fifth percentile, below the upper 95% of the reference population, according to ATS recommendations
<ul> <li>The ATS task force for the interpretation of pulmonary function recommends an adjustment on a population basis for predicted lung function in blacks.</li> </ul>
<ul> <li>Multiply values for predicted normal FVC (Pulmonary Function Tables I and III) by 0.88, for predicted normal FEV1 (Pulmonary Function Tables V and VII), by 0.88 and for normal single breath Dco (Pulmonary Tables IX and XI) by 0.93 for blacks.</li> </ul>
<ul> <li>North American whites have larger spirometric values for a given age, height and gender than North American blacks.</li> </ul>
Reliable population data are not yet available for other



ethnic groups, such as Hispanics, Native North Americans and Asians, although similar in tendencies to North American blacks, have been noticed in these racia groups, it is still recommended that the values for North American whites be used in assessing their respiratory impairment.
(eb) Diffusing Capacity for Carbon Monoxide (Dco)
<ul> <li>Use a single breath Dco to evaluate all levels of impairment.</li> </ul>
<ul> <li>Physiological factors affecting the gas transfer process Include:</li> </ul>
i) Alveolar-capillary membrane thickness ii) Available gas exchange surface area iii) Gas solubility
iv) Pulmonary capillary blood volume v) Hematocrit
vi) Test gas concentration gradient across the alveolar-capillary membrane
vii) Hemoglobin binding site availability
<ul> <li>Mechanical factors affecting Dco results include:</li> </ul>
i) Test gas inhalation speed ii) Inspiration depth
iii) Period of breath holding
iv) Expiration speed
Extrapulmonary factors



		<ul> <li>i) Cigarette smoking can elevate blood CO levels causing as much as 10-12% hemoglobin saturation and decreasing Dco.</li> <li>ii) Have claimantworker not smoke for at least 8 hours before the test</li> </ul>	
		<ul> <li>Use tables in Appendix B (Pulmonary Function Tables IX and XI) for predicted normal diffusing capacity.</li> </ul>	
		<ul> <li>Use table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests) to determine respiratory impairment.</li> </ul>	
	(f <b>c</b> )	Cardiopulmonary Exercise Testing	
		Used to determine whether claimant'sworker's complaint of dyspnea is due to respiratory or cardiac conditions.	
	( <del>g</del> d)	Arterial Blood Gases	
		<ul> <li>In most claimantsworkers with obstructive lung disease, exercise capacity correlates with FEV, better than arterial partial pressure of oxygen (PO2).</li> </ul>	
		<ul> <li>For impairment evaluation, hypoxia must be measured on two separate occasions at least 4 weeks apart.</li> </ul>	
		Pulse oximetry often provides an adequate estimate of	



			hypoxia and is less invasive than arterial blood gases.	
			<ul> <li>Arterial PO2 less than 55 mm Hg is evidence of severe impairment if claimantworker is at rest, breathing room air at sea level.</li> </ul>	
			<ul> <li>Arterial PO2 less than 60 mm Hg may also indicate severe impairment if the claimantworker also has one or more of the following:</li> </ul>	
			<ul> <li>i) Pulmonary hypertension</li> <li>ii) Cor pulmonale</li> <li>iii) Increasingly severe hypoxia during exercise testing</li> <li>iv) Erythrocytosis</li> </ul>	
			(he) Rating Impairment Due to Respiratory Disease	
			<ul> <li>All claimantsworkers being assessed for respiratory impairment require spirometry.</li> </ul>	
			<ul> <li>Claimantworker must meet all of the listed criteria except for VO2 max in order to be considered non- impaired (see table in Appendix C "Impairment Classification For Respiratory Disease, Using Pulmonary Function and Exercise Tests").</li> </ul>	
TBD	C. Lower Respiratory System Conditions	3.	Hypersensitivity Pneumonitis Once acute episode has resolved and condition is stable, impairment rated by table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests).	Consolidate guidance on respiratory system conditions. Moved into PDES from pg. 55 of the AFO.

TBD	C. Lower	4.	Pneumoconiosis	Consolidate
	System Conditions	•	Diseases resulting from inhalation of mineral dusts such as silica, coal, and asbestos, and metals such as cobalt and beryllium.	respiratory system conditions. Moved into PDES from pg. 56 of the AFO.
		•	Radiological and pathological patterns from these dusts are usually quite distinct.	
		•	Latency from 10 up to 30 years after initial exposure.	
		•	Severity of impairment depends on:	
			<ul> <li>i) Characteristics of dust inhaled</li> <li>ii) Dust burden retained in the lungs</li> <li>iii) Susceptibility of the individual</li> <li>iv) Length of time since first exposure</li> </ul>	
		•	X-ray changes may progress after removal and may or may not be associated with impairment.	
		•	Limit further exposure, particularly if x-ray changes at young age or if there is an associated physiological impairment.	
		•	Rate impairment with table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests).	
TBD	C. Lower Respiratory	5.	Lung Cancer	Consolidate guidance on
	System Conditions	•	Considered severely impaired at diagnosis.	respiratory system conditions.



		<ul> <li>If free of all evidence of recurrence at 1 year re-evaluation, rate according to table below "Scale for Judging Capabilities of Subjects with Cancer".</li> </ul>	Moved into PDES from pg. 57 of the AFO.
		<ul> <li>If evidence of tumour, then considered severely impaired by table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests), Grade 4.</li> </ul>	
		<ul> <li>If tumour recurs, also considered severely impaired (Grade 4).</li> </ul>	
		Scale for Judging Capabilities of Workers with Lung Cancer	
		Grade 0: Fully active; able to carry on all predisease activities without restrictions.	
		Grade 1: Restricted in physically strenuous activity but	
		ambulatory and able to carry out light tasks, such as light work in home or office.	
		Grade 2: Requires occasional to considerable care for most needs and frequent medical care.	
		Grade 3: Capable only of limited self-care and confined to bed or chair at least half of waking hours.	
		Grade 4: Almost totally impaired; cannot care for self, and totally confined to bed or chair.	
TBD	C. Lower	6. Permanent Impairment Due To Respiratory Disorders	Consolidate
	Respiratory		guidance on
	System Conditions	Perform spirometry and Dco on worker.	respiratory system
		Perform VO2 max when indicated.	Conditions.
		Determine predicted values for FVC, FEV, and Dco using the	from pg 58 of the
		appropriate tables.	AFO
		• Determine lower limit of normal for FVC, FEV, and DCO using the appropriate tables.	



		<ul> <li>The worker must meet all of the listed criteria except VO2 max to be considered non-impaired.</li> <li>At least one of the listed criteria must be fulfilled to place a worker in any grade with an impairment rating.</li> <li>It is recognized with some respiratory conditions (e.g. bronchiectasis), that pulmonary impairment can occur that does not significantly impact pulmonary function or exercise test results, but that does impact the ability to perform activities of daily living. In these limited cases, impairment rating is assigned based on extent and severity of pulmonary dysfunction and on inability to perform activities of daily living.</li> <li>Some assistance may be obtained from the "Guidelines to the use of the I.L.O. International Classification of Radiographs of Pneumoconiosis". This booklet was published by the International Labour Office and was revised in 2011.</li> <li>See Appendix B for Pulmonary Function Tables.</li> <li>See Appendix C for Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests.</li> </ul>	
XXIII. Conta	<del>ct</del> Dermat <del>itis</del> ology		-
TBD	B. Other Skin Conditions	B. Other skin conditionsPercent Value of Whole PersonGrade 1Skin disorder signs and symptoms present or	Consolidate guidance on skin conditions.



	AND	
	No or few limitations in performance of activities of	
	daily living, exposure to certain chemical or physical	
	agents may temporarily increase limitation	
	AND	
	Requires no or intermittent treatment 0 – 5	
Grade 2	Skin disorder signs and symptoms present or	
	intermittently present	
	AND	
	I imited performance of some activities of daily living	
	<b>Requires intermittent to constant treatment</b> $6 - 15$	
Grade 3	Skin disorder signs and symptoms present or	
Orade 5	intermittently present	
	AND Limited performance of many activities of doily living	
	Limited performance of many activities of daily living	
	AND Demine interview to the transformed and the	
	Requires intermittent to constant treatment 16 – 30	
Grade /	Skin disorder signs and symptoms constantly	
Graue 4	nrocont	
	AND Limited as former of means of the limit of the limit of	
	Limited performance of many activities of daily living,	
	including intermittent confinement at home	
	AND	
	Requires intermittent to constant treatment 31 – 40	
Grade 5	Skin disorder signs and symptoms constantly	
	present	
	AND	
	Grade 2 Grade 3 Grade 5	AND No or few limitations in performance of activities of daily living, exposure to certain chemical or physical agents may temporarily increase limitation AND Requires no or intermittent treatment 0 – 5 Grade 2 Skin disorder signs and symptoms present or intermittently present AND Limited performance of some activities of daily living AND Requires intermittent to constant treatment 6 – 15 Grade 3 Skin disorder signs and symptoms present or intermittently present AND Limited performance of many activities of daily living AND Limited performance of many activities of daily living AND Requires intermittent to constant treatment 16 – 30 Grade 4 Skin disorder signs and symptoms constantly present AND Limited performance of many activities of daily living, including intermittent confinement at home AND Requires intermittent to constant treatment 31 – 40 Grade 5 Skin disorder signs and symptoms constantly present AND

Limited performance of most activities of daily living including occasional to constant confinement at home AND	
Requires intermittent to constant treatment 41 – 50 Cosmetic, strength, sensory and range of motion awards must	
still be applied up to the allotted maximum.	



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# I. Introduction

The Permanent Disability Evaluation Schedule (the "Schedule") was developed by WorkSafeBC based on consideration of expert medical opinion, current medical/scientific literature and schedules from other jurisdictions and organizations, including but not limited to various editions of the American Medical Association *Guides to the Evaluation of Permanent Impairment* (the "AMA Guides").

As per section 23(2) of the *Act*, the Schedule is used for guidance in the measurement of partial disability under section 23(1) of the *Act*. The Schedule attributes a percentage of total disability to each of the specified disablements. For example, an amputation of the arm, middle, third of humerus, is indicated to be 65%. When that percentage rate is applied, it means that a worker will receive an award under section 23(1) based on 65% of 90% of average net earnings as determined by the *Act*.

The Schedule does not necessarily determine the final amount of the section 23(1) award. The Board may take other factors into account. Thus, the Schedule provides a guideline or starting point for the measurement of disability, rather than a fixed result (see policy item #39.10, *Permanent Disability Evaluation Schedule*).

It is not possible to list every disability in the Schedule. However, the Schedule can be used for guidance if a disability is similar to one that is listed. If a disability is not covered in the Schedule, other information regarding disability assessment may be consulted, including expert medical opinion, current medical/scientific literature and schedules from other and-jurisdictions and organizations.



# **III. Upper Extremity**

#### C. Partial Loss of Range of Motion

Disability from partial loss of range of motion in the upper extremity is proportional to the amount of movement lost, applied to the complete immobility rating:

 $\frac{loss of range of motion}{normal range of motion} \times immobility rating = loss of range of motion rating$ 

The following principles apply when rating partial loss of range of motion in an upper extremity:

- A loss of range of motion of less than five degrees or less generally does not impair a worker's earning capacity to an ascertainable degree.
- When assessing loss of range of motion in an upper extremity, there is usually a normal side for comparison. In instances when a normal side does not exist, reference is made to the normal range of motion values set out below.
- Loss of hyperextension in an unusually flexible worker does not result in a disability. The loss of range of motion in the injured extremity of an unusually flexible worker is compared with the normal range of motion values set out below.

#### **Upper Extremity Normal Range of Motion Values**

#### Degrees

#### Shoulder

70
90

\*Arm in abduction of 90 degrees; if unable to achieve this degree of abduction, internal and external rotation is measured, with the arms at the highest abduction available to injured shoulder bilaterally.



# **III. Upper Extremity**

#### E. Miscellaneous Conditions and Surgical Procedures

Unless otherwise specified, disability ratings for miscellaneous conditions and surgical procedures involving the upper extremity are added to the other applicable ratings for immobility, loss of range of motion and/or loss of strength in the affected extremity.

#### Percentage

Shoulder replacement arthroplasty
Elbow replacement arthroplasty 5.8
Biceps tendon rupture (with no surgical correction)
Proximal
If surgical repair of a biceps tendon rupture is undertaken, disability is rated based on loss of range of motion and loss of strength resulting from the accepted injury and surgical repair, and not the above values. The above ratings for biceps tendon rupture with no surgical correction include consideration of associated loss of range of motion and loss of strength.
Acromioclavicular (AC) or lateral clavicular joint resection
Distal clavicular joint resection
Sternoclavicular joint resection

Resurfacing or partial arthroplasties merit the same disability rating as a complete arthroplasty.



# V. Hands

# B. Immobility of Joints (Arthrodesis or Functional Ankylosis)

Immobility of the interphalangeal (IP) joint, metacarpophalangeal (MCP) joint or the carpometacarpal (CMC) joint of the thumb, in good functional position, is accorded one-half of the amputation value at those levels.

Immobility of the distal interphalangeal (DIP) joint, proximal interphalangeal (PIP) joint or MCP joint of a finger, in good functional position, is accorded threequarters of the amputation value at those levels.

Immobility of a joint in poor functional position may, on a judgment basis, approach the value of an amputation.

#### C. Partial Loss of Range of Motion

#### 1. General

Partial loss of range of motion in the digits is calculated as set out below under items 2 to 4.

The following principles apply to assessment of disability from partial loss of range of motion:

- A loss of range of motion of less than five degrees **or less** generally does not impair a worker's earning capacity to an ascertainable degree.
- For assessment of loss of range of motion in the finger and thumb joints, comparison is made with the corresponding joints of the opposite hand. If the latter are also abnormal or are not available, then the findings would be compared to the normal range of motion values set out in item 5 below.
- Loss of hyperextension in an unusually flexible worker does not result in a disability. The loss of range of motion in the injured digit of an unusually flexible worker would be compared with the normal range of motion values set out below.

### 2. Finger(s)

WORK SAFE BC

Partial loss of range of motion in the finger(s) is calculated as:

 $\frac{\text{loss of range of motion}}{\text{normal range of motion}} \times \frac{3}{4} \times \text{total amputation value of the joint(s)}$ 

This formula is used as it is normally considered that a fused finger joint is equal to three-quarters of the value of an amputation at the same level.

#### April 27, 2016

# **VI.** Lower Extremity

#### F. Partial Loss of Range Of Motion

Disability from partial loss of range of motion in the lower extremity is proportional to the amount of movement lost, applied to the complete immobility rating:

 $\frac{loss \ of \ range \ of \ motion}{normal \ range \ of \ motion} \times immobility \ rating \ = loss \ of \ range \ of \ motion \ rating$ 

The following principles apply when rating partial loss of range of motion in a lower extremity:

- A loss of range of motion of less than five degrees **or less** generally does not impair a worker's earning capacity to an ascertainable degree.
- When assessing loss of range of motion in a lower extremity, there is usually a normal side for comparison. In instances when a normal side does not exist, reference is made to the normal range of motion values set out below.
- Loss of hyperextension in an unusually flexible worker does not result in a disability. The loss of range of motion in the injured extremity of an unusually flexible worker would be compared with the normal range of motion values set out below.

#### Lower Extremity Normal Range of Motion Values

#### Degrees

#### Hip

Flexion	113
Extension	
Abduction	
Adduction	
Internal Rotation	
External Rotation	

#### Knee

Flexion	134
Extension	0

#### Ankle

Dorsiflexion	18
Plantar Flexion	40

# **VI.** Lower Extremity

# Great Toe

IPJ	Flexion	60
	Extension	0
MPJ	Flexion (Plantar Flexion)	37
	Extension (Dorsi Flexion)	63

#### Fraction of full movement

Midtarsal	<sup>1</sup> ⁄ <sub>4</sub> , 1⁄ <sub>2</sub> , 3⁄ <sub>4</sub> or full
Subtalar	
Inversion	<u>¼, ½, ¾</u> or full
Eversion	<sup>1</sup> ⁄ <sub>4</sub> , <sup>1</sup> ⁄ <sub>2</sub> , <sup>3</sup> ⁄ <sub>4</sub> or full

### G. Loss of Strength

A disability rating for loss of strength in the lower extremity is assessed per leg. Such a disability rating is only to be applied if there is strong, consistent, objective evidence of loss of strength that is not taken into account by the amputation or loss of range of motion value, and not covered by peripheral nerve ratings. In addition, there must be a clear pathological explanation for the weakness.

Loss of strength in the lower extremity is assessed as follows:

Strength Loss	Definition	Percentage
Normal	No loss of function	0
Mild	Active movement against strong resistance	1
Moderate Active movement against slight resistance		3
Marked Movement against gravity		5
Complete	No power	7

# **VIII.** Peripheral Nervous System Conditions

#### A. Criteria for Assessing Loss of Peripheral Nerve Function

The criteria for assessing loss of peripheral nerve function are as follows:

#### 1. Sensory

	Normal	No loss of function
	Mild	Slight paresthesia/hypesthesia <b>(or</b> allodynia/hyperesthesia/dysesthesia)
	Moderate	Moderate paresthesia/hypesthesia <b>(or</b> allodynia/hyperesthesia/dysesthesia)
	Marked	As above (moderate) + loss of stereognosis + ulcers/trophic changes or marked paresthesia/hypesthesia (or allodynia/hyperesthesia/dysesthesia)
	Complete	No sensation
2.	Motor	

Normal	No loss of function
Mild	Active movement against strong resistance
Moderate	Active movement against slight resistance
Marked	Movement against gravity
Complete	No power

Sensory and motor awards for loss of peripheral nerve function include consideration of consequent loss of range of motion and loss of strength, unless there is an additional mechanical, anatomical or other underlying pathological reason for limitation of these functions.

# VIII. Peripheral Nervous System Conditions

#### **B.** Table of Awards for Peripheral Nerve Conditions

#### Sensory Motor Long Thoracic Nerve Normal ⊖n/a <del>n/a</del>0 Mild $\frac{2n}{a}$ <del>n/a</del>2 Moderate 3**n/a** <del>n/a</del>3 Marked <del>n/a</del>4 4**n/a** Complete 5**n/a** <u>n/a</u>5 Median Nerve At elbow Normal 0 0 5 5 Mild Moderate 10 10 Marked 15 15 Complete 20 20 At wrist Normal 0 0 Mild 3 2 Moderate 6 4 9 6 Marked Complete 12 8 **Ulnar Nerve** At elbow Normal 0 0 Mild 0.75 3 6 Moderate 1.5 Marked 2.25 10 Complete 3 16 At wrist Normal 0 0 Mild 2 0.6 Moderate 4 1.2 Marked 8 1.8 Complete 2.4 10

#### (Values listed in this table are percentages of total disability)

# VIII. Peripheral Nervous System Conditions

Radial Nerve			
	Normal	0	0
	Mild	0.5	4.5
	Moderate	1	9
	Marked	1.5	13.5
	Complete	2	18
	Complete	-	10
		Sensory	Motor
Axillary Nerve		-	
-	Normal	0	0
	Mild	0.15	1.35
	Moderate	0.3	2.7
	Marked	0.45	4.05
	Complete	0.6	5.4
Lateral Cutaneous Nerve	of the Forearm		
	Normal	0	n/a
	Mild	0.5	n/a
	Moderate	1	n/a
	Marked	1.5	n/a
	Complete	2	n/a
Medial Cutaneous Nerve	of the Forearm		
	Normal	0	n/a
	Mild	0.5	n/a
	Moderate	1	n/a
	Marked	1.5	n/a
	Complete	2	n/a
Musculocutaneous Nerve	of the Brachial	Plexus	
	Normal	0	0
	Mild	. <mark>37</mark> 5	4.5
	Moderate	1 <del>.75</del>	9
	Marked	1. <del>12</del> 5	13.5
	Complete	<del>1.5</del> 2	18



# VIII. Peripheral Nervous System Conditions

Sciatic Nerve			
	Normal	0	0
	Mild	3	4.5
	Moderate	6	9
	Marked	9	13.5
	Complete	12	18
Femoral Nerve			
	Normal	0	0
	Mild	0.625	2.5
	Moderate	1.25	5
	Marked	1.875	7.5
	Complete	2.5	10
Obturator Nerve			
	Normal	0	0
	Mild	0.625	2.5
	Moderate	1.25	5
	Marked	1.875	7.5
	Complete	2.5	10
Saphenous Nerve			
	Normal	0	n/a
	Mild	1	n/a
	Moderate	2	n/a
	Marked	3	n/a
	Complete	4	n/a
Common Peroneal I	Nerve (Lateral Poplitea	al)	
	Normal	0	0
	Mild	1	5
	Moderate	2	10
	Marked	3	15
	Complete	4	20
Deep Peroneal Nerv	e (Anterior Tibial)		
•	Normal	0	0
	Mild	0.2	2.5
	Moderate	0.3	5
	Marked	0.4	10
	Complete	0.5	15

# **VIII.** Peripheral Nervous System Conditions

#### Superficial Peroneal Nerve (Musculocutaneous)

Ν	lormal	0	0
Ν	/lild	0.4	0.5
Ν	/loderate	0.6	1
Ν	/larked	0.8	2
С	Complete	1	2.5
Tibial Nerve (Posterior Tib	ial or Medial Poplit	eal)	
	Normal	0	0
ſ	Mild	2	3
1	Moderate	4	6
1	Marked	6	9
(	Complete	8	12
		Sensory	Motor
Sural Nerve		•	
1	Normal	0	n/a
1	Mild	0.5	n/a
n	Moderate	1	n/a
n	Marked	1.5	n/a
(	Complete	2.0	n/a
Lateral Femoral Cutaneous	s Nerve (Lateral		
<b>Cutaneous Nerve of the Th</b>	nigh)		
1	Normal	0	n/a
n	Mild	0.5	n/a
n	Moderate	1	n/a
n	Marked	1.5	n/a
(	Complete	2.0	n/a
Posterior Cutaneous	-		
Nerve of the Thigh			
1	Normal	0	n/a
1	Mild	0.5	n/a
1	Moderate	1.0	n/a
1	Marked	1.5	n/a
(	Complete	2.0	n/a

Infraorbital nerve sensory loss is rated at 1% of total disability.

Genitofemoral nerve injury – loss of cremasteric reflex. Loss of the cremasteric reflex does not constitute disability.

# **IX. Nerve Root Conditions**

### A. Criteria for Assessing Loss of Nerve Root Function

The criteria for assessing loss of nerve root function are as follows:

#### 1. Sensory

Normal	No loss of function
Mild	Slight paresthesia/hypesthesia <b>(or</b> allodynia/hyperesthesia/dysesthesia)
Moderate	Moderate paresthesia/hypesthesia (or allodynia/hyperesthesia/dysesthesia)
Marked	As above (moderate) + loss of stereognosis + ulcers/trophic changes or marked paresthesia/hypesthesia (or allodynia/hyperesthesia/dysesthesia)
Complete	No sensation

#### 2. Motor

Normal	No loss of function
Mild	Active movement against strong resistance
Moderate	Active movement against slight resistance
Marked	Movement against gravity
Complete	No power

Sensory and motor awards for loss of nerve root function include consideration of consequent loss of range of motion and loss of strength, unless there is an additional mechanical, anatomical or other underlying pathological reason for limitation of these functions.



# X. Spine

# A. General

The following principles apply to assessment of disability in the spine:

- Anatomical loss or damage resulting from injury or surgery may contribute to physical disability of the spine. When anatomic and/or surgical disability is present as well as loss of range of motion of the spine, the final disability rating is based on the greater of the two.
- Range of motion of the spine is difficult to assess on a consistent basis because the joints of the spine are small, inaccessible and not externally visible. Only movement of a region of the spine can be measured; it is not possible to measure mobility of a single vertebra.
- A loss of range of motion in the spine of less than three degrees **or less** generally does not impair a worker's earning capacity to an ascertainable degree.

Total paraplegia is rated as 100% of total disability.

Total quadriplegia is rated as 100% of total disability.

A vertebrectomy merits an award equivalent to the rating for a two-level fusion, plus the rating for total collapse of the removed vertebra.

#### B. Cervical Spine

#### Percentage

Compression fractures
Up to 50% compression0 – 2 Over 50% compression2 – 4
mpairment resulting from surgical oss of intervertebral disc C1 to D1
Ankylosis (fusion) C1 to D1 including surgical loss of intervertebral disc
C1 Jefferson Fracture2
_oss of range of motion
Flexion0 – 6
Extension0-3
Lateral flexion right and lefteach 0 – 2 Rotation right and lefteach 0 – 4

# **XI. Central Nervous System Conditions**

# G. Impairments of the Upper Extremities

# Impairment of one upper extremity:

#### Percentage

Grade 1	Individual can use the involved extremity for self-care, daily activities, and holding, but has difficulty with digital dexterity	1 – 9
Grade 2	Individual can use the involved extremity for self-care, can grasp and hold objects with difficulty, but has no digital dexterity	10 – 4 <b>24</b>
Grade 3	Individual can use the involved extremity, but has difficulty with self-care activities	25 – 39
Grade 4	Individual cannot use the involved extremity for self-care or daily activities	40 – 60

#### Impairment of both upper extremities:

#### Percentage

Grade 1	Individual can use both upper extremities for grasping, and holding, but has difficulty with digital dexterity	1 – 19
Grade 2	Individual can use both upper extremities for self-care, can grasp and hold objects with difficulty, but has no digital dexterity	20 – 39
Grade 3	Individual can use both upper extremities, but has difficulty with self-care activities	40 – 79
Grade 4	Individual cannot use upper extremities	80+

# XIII. Traumatic Hearing Loss

#### Percentage

Complete loss of hearing in one ear with no loss in the other	
Complete loss of hearing in both ears 30	1

#### A. Unilateral Traumatic Hearing Loss

Difference in <del>L</del> loss of hearing in decibels (dB) measured in affected ear (ANSI)	Percentage
20 – 29	1
30 – 39	2
40 or more	3

The loss of hearing due to the compensable condition expressed in dB in the first column is the **difference in the** arithmetic average of thresholds of hearing measured in each ear in turn by pure tone audiometry at frequencies of 500, 1,000, 2,000 and 3,000 Hz.



# XV. Ear, Nose and Throat Conditions

For hearing impairment, see Sections XIII, "Traumatic Hearing Loss" and XIV, "Non-Traumatic Hearing Loss".

#### A. Vestibular Disorders

The following table is adapted from the AMA Guides,  $56^{th}$  Edition.

#### Percentage

Grade 1	Symptoms or signs of vestibular disequilibrium present without supporting objective findings AND Activities of daily living can be performed without assistance	θ
<del>Grade 2</del>	Symptoms or signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance except for complex activities such as bicycle riding or certain types of demanding activities related to individual work, such as walking on girders or scaffolds	<del>0 – 10</del>
<del>Grade 3</del>	Symptoms or signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance except for simple activities such as self care, some household duties, walking and riding in a motor vehicle operated by another person	<del>11 – 30</del>
Grade 4	Symptoms and signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living can be performed without assistance, except self care.	<del>31 – 60</del>
<del>Grade 5</del>	Symptoms and signs of vestibular disequilibrium present with supporting objective findings AND Activities of daily living cannot be performed without assistance except self care not requiring ambulation AND Home confinement is necessary	<del>61 - 95</del>



# XV. Ear, Nose and Throat Conditions

Grade 0	Symptoms of vestibular disequilibrium present without supporting objective findings AND	0%
	Activities of daily living can be performed without assistance	
	No confirmable physical findings	
	No confirmable diagnostic findings with specific laboratory tests	
Grade 1	Symptoms of vestibular disequilibrium present consistent with objective findings AND	1-10%
	Activities of daily living can be performed but may have difficulties with complex tasks such as bike riding or working at heights	
	No confirmable findings or mildly abnormal gait, Romberg, other findings	
	Abnormal findings on ENG, VNG, positional nystagmus or abnormal caloric response may be present	
Grade 2	Symptoms of vestibular disequilibrium present consistent with objective findings AND	11- 30%
	Activities of daily living cannot be performed without assistance except for simple activities	
	Unsteady gait, abnormal Romberg	
	Abnormal vestibular testing, or abnormal caloric response, CNS signs, or posturography	
Grade 3	Symptoms of vestibular disequilibrium present consistent with objective findings AND	31- 60%
	Activities of daily living cannot be performed without assistance except self-care	
	Difficulty walking with assistance	
	Moderately abnormal ENG or VNG, moderate sway or sensory tests on posturography, may have abnormal MRI	
Grade 4	Symptoms of vestibular disequilibrium present consistent with objective findings AND	61- 95%
	Activities of daily living cannot be performed without assistance except self-care not requiring ambulation	
	Difficulty standing or walking without assistance	
	Severely abnormal ENG, VNG and severely abnormal posturography, may have abnormal brain MRI	



# **XVIII. Urogenital Tract Conditions**

- Note: Normal creatinine clearance
  - males 130-200 L/24h (90-139 ml/min)
  - females 115-180 L/24h (80-125 ml/min)
- Note: A claimantworker with only one functioning kidney may have normal renal function due to the efficiency of the remaining kidney; however, the normal safety factor is lost. Value for a claimantworker with one functioning kidney loss is 15%.

#### **B. Bladder Disorders**

	Percentage
Clinical signs or sequelae requiring occasional treatment	0 – 5
Clinical signs or sequelae requiring continuing medical supervision and medication (e.g. recurring cystitis, incontinence controlled by medication)	6 – 15
Clinical signs or sequelae incompletely controlled with medical and surgical treatment (e.g. retention or partial intermittent incontinence)	16 – 30
Clinical signs or sequelae not controlled with medical and surgical treatment (e.g. total incontinence or complete urinary retention)	31 – 60
	Clinical signs or sequelae requiring occasional treatment Clinical signs or sequelae requiring continuing medical supervision and medication (e.g. recurring cystitis, incontinence controlled by medication) Clinical signs or sequelae incompletely controlled with medical and surgical treatment (e.g. retention or partial intermittent incontinence) Clinical signs or sequelae not controlled with medical and surgical treatment (e.g. total incontinence or complete urinary retention)

### C. Urethral Disorders

		Percentage
(a)	Stricture	
	Grade 1 Requiring occasional dilation	0 – 5
	Grade 2 Requiring dilation	6 – 10
(b)	Fistula(e)	15
(c)	Diverticula(e) with recurrent complications	5

# XXI. Respiratory System Conditions

Tracheal obstruction

<ul><li>minor</li><li>significant</li></ul>	0 – 5 6 – 10
Tracheostomy scar without obstruction	0
Permanent tracheostomy	

### C. Lower Respiratory System Conditions

#### 1. General Principles

- (a) An anatomical change such as circumscribed pleural plaque represents an impairment based on anatomic structure; however, if there is no abnormality of lung function, and no decrease in the ability to perform activities of daily living, then the impairment rating assigned would be zero percent.
- (b) A specific impairment is established by considering the severity and prognosis of the condition and how the impairment affects the individual's ability to perform activities of daily living.
- (c) Symptomatic assessment, though diagnostically useful, provides limited quantitative information, and should not be used as the sole criterion for assessing impairment.
- (d) Pulmonary function tests are the most useful clinical studies for assessing pulmonary functional changes.

#### 2. Symptoms

- (a) Dyspnea
  - most common symptom in pulmonary impairment.
  - non-specific cardiac, hematologic metabolic, neurologic, psychological or physical fitness causes



# XXI. Respiratory System Conditions

#### American Thoracic Society (ATS) Classification of Dyspnea

Severity	Definition by Historical Question/Response	
Mild	Do you have to walk more slowly on the level than people of your age because of breathlessness?	
Moderate	Do you have to stop for breath when walking at your own pace on the level?	
Severe	Do you ever have to stop for breath after walking about 100 yards or for a few minutes on the level?	
Very Severe	Are you too breathless to leave the house, or breathless on dressing or undressing?	
(b) Cough		
<ul> <li>Document</li> </ul>		
→ presence	/absence	
⊖ productiv	e/non-productive	
	<del>iip to work</del>	
<ul> <li>→ duration</li> </ul>		
→ hemoptys	<del>SIS</del>	
Chronic bronchitis = sputum-producing cough that occurs		

Chronic bronchitis = sputum-producing cough that occurs on most days for at least 3 consecutive months a year for at least 2 consecutive years (ATS criteria)

#### (c) Hemoptysis

 Conditions that are often associated with hemoptysis include bronchogenic carcinoma, pulmonary emboli, bronchiectasis, tuberculosis, aspegilloma, and arteriovenous malformations.

#### (d) Wheezing

- high pitched musical sounds
- inspiratory or stridor suggests laryngeal causes
- expiratory suggests bronchospasm

# XXI. Respiratory System Conditions

#### (e) Symptoms Due to Thoracic Cage Abnormalities

- Such as spinal abnormalities (e.g. Kyphoscoliosis).
- Respiratory compromise is produced by a combination of restricted lung volume, decreased cross-sectional area of the vascular bed, and decrease in chest wall compliance which occurs with age.
- Progressive stiffness of the chest wall with age increases the work of breathing and causes hyperventilation. Hypoxia is a powerful pulmonary vasoconstrictor and further decreases vascular crosssectional area, leading to cor pulmonale.
- Judge severity of respiratory impairment on criteria listed in "Forced Expiratory Maneuvers", "Diffusing Capacity for Carbon Monoxide" and other criteria for rating impairment due to respiratory disease provided.

#### 3. Tobacco Use and Environmental Exposure

- (a) Tobacco Use
  - Standard measure of "pack years":

number of years x number of packs of smoking smoked per day

- Most frequent cause of chronic bronchitis, emphysema, and lung cancer, and can exacerbate asthma.
- Risk of bronchogenic carcinoma decreases progressively in the first 10-15 years after quitting smoking, stabilizing at a point slightly higher than someone who has never smoked.
- (b) Environmental Exposure
  - Exposure to toxic materials, irritative gases, fumes, mists or vapours, organic materials, fibrogenic dust, bioaerosols, paints, glues, pesticides and allergens as well as pets, cool-mist vaporizers, humidifiers, indoor hot tubs and chlorinated and ozonated swimming pools all may cause, or exacerbate respiratory disease.

# XXI. Respiratory System Conditions

#### 4. Evaluation of Respiratory Disease

- (a) Physical Examination
  - Noisy breath sounds may indicate airflow obstruction.
  - Pursed lip breathing during expiration may suggest chronic obstructive pulmonary disease (COPD).
  - Inspiratory crackles heard in two thirds of people with chronic interstitial lung disease may be associated with restrictive respiratory impairment.
  - Wheezes or rhonchi indicate bronchial abnormalities and are often heard in obstructive airway disease.
  - Cyanosis unreliable indicator of severe pulmonary impairment, and requires pulse oximetry or arterial blood gas analysis for confirmation.
  - Vitals, including oxygen saturation
  - Posture
  - Breath sounds
  - Central cyanosis
  - Digital clubbing associated with pulmonary fibrosis, bronchiectasis, bronchogenic carcinoma, pleural tumours, lung abscess, empyema and cyanotic congenital heart disease.
- (b) Chest X-ray
  - Initial posteroanterior and lateral views in full inspiration
- (c) Computed Tomography (CT) High-Resolution CT (HRCT)
  - More sensitive in evaluating certain pulmonary diseases, such as asbestosis.
  - Conventional CT 10 mm thick slices. Good for high radiographic attenuation lesions.



# XXI. Respiratory System Conditions

- HRCT 1-2 mm thick slices. Good for low radiographic attenuation lesions.
- HRCT delivers significantly less whole body effective dose radiation than standard CT.
- (da) Forced Expiratory Maneuvers (Simple Spirometry)
  - Spirometric testing equipment, calibration, and administration techniques must conform to the guidelines of the 1994 ATS Statement on Standardization of SpirometryATS/ERS Standardisation of spirometry statement (2005).
  - If tolerated by the claimantworker, remove pulmonary medications up to 24 hours before spirometry or methacholine challenge testing to assess pulmonary function without the effects of medication.
  - Measurements are made from at least three acceptable spirometric tracings that demonstrate uniformity pertaining to both the expiratory flow pattern and concordance of at least two of the test results within 5% of each other; to include the following:
    - i) Forced vital capacity (FVC)
    - ii) Forced expiratory volume in the first second (FEV<sub>1</sub>)
    - iii) Ratio of these measurements (FEV1/FVC)
  - Tracings with the highest FVC and FEV1 are used to occur on different expiratory efforts.
  - Repeat spirometry after bronchodilator administration if FEV1/FVC is below 0.70 or if there is wheezing on physical examination.
  - Use the spirogram indicating best effort, before or after bronchodilator administration, to determine FVC and FEV1 for impairment assessment.



# XXI. Respiratory System Conditions

- To use pulmonary function measures, obtain measurements of the FVC, FEV1, and Dco (Diffusing Capacity for Carbon Monoxide). and compare these to the appropriate predicted normal value tables in Appendix B. (Pulmonary Function Tables I, III, V, VII, IX and XI) For the average or mean predicted normal value, find the individual's age in the left-hand column and height along the top row; the predicted value lies at the intersection of the appropriate row and column. In addition, identify the lower limit of normal for the measure in question by using the appropriate predicted lower limit value tables in Appendix B. (Pulmonary Function Tables II, IV, VI, VIII, X, and XII). The lower limit of normal has been calculated based upon the standard convention of the lower limit of normal lying at the fifth percentile, below the upper 95% of the reference population, according to ATS recommendations.
- The ATS task force for the interpretation of pulmonary function recommends an adjustment on a population basis for predicted lung function in blacks.
- Multiply values for predicted normal FVC (Pulmonary Function Tables I and III) by 0.88, for predicted normal FEV1 (Pulmonary Function Tables V and VII), by 0.88 and for normal single breath Dco (Pulmonary Tables IX and XI) by 0.93 for blacks.
- North American whites have larger spirometric values for a given age, height and gender than North American blacks.
- Reliable population data are not yet available for other ethnic groups, such as Hispanics, Native North Americans and Asians, although similar in tendencies to North American blacks, have been noticed in these racial groups, it is still recommended that the values for North American whites be used in assessing their respiratory impairment.
- (eb) Diffusing Capacity for Carbon Monoxide (Dco)
  - Use a single breath Dco to evaluate all levels of impairment.
  - Physiological factors affecting the gas transfer process Include:
    - i) Alveolar-capillary membrane thickness
    - ii) Available gas exchange surface area
    - iii) Gas solubility
    - iv) Pulmonary capillary blood volume

# XXI. Respiratory System Conditions

- v) Hematocrit
- vi) Test gas concentration gradient across the alveolar-capillary membrane
- vii) Hemoglobin binding site availability
- Mechanical factors affecting Dco results include:
  - i) Test gas inhalation speed
  - ii) Inspiration depth
  - iii) Period of breath holding
  - iv) Expiration speed
- Extrapulmonary factors
  - i) Cigarette smoking can elevate blood CO levels causing as much as 10-12% hemoglobin saturation and decreasing Dco.
  - ii) Have claimant not smoke for at least 8 hours before the test
- Use tables in Appendix B (Pulmonary Function Tables IX and XI) for predicted normal diffusing capacity.
- Use table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests) to determine respiratory impairment.
- (fc) Cardiopulmonary Exercise Testing
  - Used to determine whether claimant'sworker's complaint of dyspnea is due to respiratory or cardiac conditions.
  - Exercise capacity is measured by oxygen consumption per unit time in milliliters per kilogram multiplied by minutes, or in metabolic equivalents (METS).
  - Generally, an individual can sustain a work level equal to 40% of his/her measured maximum oxygen consumption (VO<sub>2</sub> max) for an eight hour period.



# XXI. Respiratory System Conditions

Prolonged Physical Work Intensity/Oxygen Consumption

Work Intensity	Oxygen	Excess Energy
For 70 kg Person	Consumption	Expenditure
Light work	7 ml/kg; 0.5 L/min	< 2 METS
Moderate work	8-15 ml/kg; 0.6-1.0 L/min	2-4 METS
Heavy work	16-20 ml/kg; 1.1-1.5 L/min	5-6 METS
Very heavy work	21-30 ml/kg; 1.6-2.0 L/min	7-9 METS

(gd) Arterial Blood Gases

- In most claimantsworkers with obstructive lung disease, exercise capacity correlates with FEV, better than arterial partial pressure of oxygen (PO<sub>2</sub>).
- For impairment evaluation, hypoxia must be measured on two separate occasions at least 4 weeks apart.
- Pulse oximetry often provides an adequate estimate of hypoxia and is less invasive than arterial blood gases.
- Arterial PO<sub>2</sub> less than 55 mm Hg is evidence of severe impairment if claimantworker is at rest, breathing room air at sea level.
- Arterial PO<sub>2</sub> less than 60 mm Hg may also indicate severe impairment if the claimantworker also has one or more of the following:
  - i) Pulmonary hypertension
  - ii) Cor pulmonale
  - iii) Increasingly severe hypoxia during exercise testing
  - iv) Erythrocytosis
- (he) Rating Impairment Due to Respiratory Disease
  - All claimantsworkers being assessed for respiratory impairment require spirometry.
    - Claimantworker must meet all of the listed criteria except for VO<sub>2</sub> max in order to be considered non-impaired (see table in Appendix C "Impairment Classification For Respiratory Disease, Using Pulmonary Function and Exercise Tests").



# XXI. Respiratory System Conditions

- At least one of the listed criteria must be fulfilled to place an individual in any category with an impairment rating.
- 3. Hypersensitivity Pneumonitis
  - Once acute episode has resolved and condition is stable, impairment rated by table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests).
- 4. Pneumoconiosis
  - Diseases resulting from inhalation of mineral dusts such as silica, coal, and asbestos, and metals such as cobalt and beryllium.
  - Radiological and pathological patterns from these dusts are usually quite distinct.
  - Latency from 10 up to 30 years after initial exposure.
  - Severity of impairment depends on:
    - v) Characteristics of dust inhaled
    - vi) Dust burden retained in the lungs
    - vii) Susceptibility of the individual
    - viii) Length of time since first exposure
  - X-ray changes may progress after removal and may or may not be associated with impairment.
  - Limit further exposure, particularly if x-ray changes at young age or if there is an associated physiological impairment.
  - Rate impairment with table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests).
- 5. Lung Cancer
  - Considered severely impaired at diagnosis.
  - If free of all evidence of recurrence at 1 year re-evaluation, rate according to table below "Scale for Judging Capabilities of Workers with Lung Cancer".



# XXI. Respiratory System Conditions

- If evidence of tumour, then considered severely impaired by table in Appendix C (Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests), Grade 4.
- If tumour recurs, also considered severely impaired (Grade 4).

Scale for Judging Capabilities of Workers with Lung Cancer

Grade 0: Fully active; able to carry on all predisease activities without restrictions.

Grade 1: Restricted in physically strenuous activity but ambulatory and able to carry out light tasks, such as light work in home or office.

Grade 2: Requires occasional to considerable care for most needs and frequent medical care.

Grade 3: Capable only of limited self-care and confined to bed or chair at least half of waking hours.

Grade 4: Almost totally impaired; cannot care for self, and totally confined to bed or chair.

- 6. Permanent Impairment Due To Respiratory Disorders
  - Perform spirometry and Dco on worker.
  - Perform VO2 max when indicated.
  - Determine predicted values for FVC, FEV, and Dco using the appropriate tables.
  - Determine lower limit of normal for FVC, FEV, and Dco using the appropriate tables.
  - The worker must meet all of the listed criteria except VO2 max to be considered non-impaired.
  - At least one of the listed criteria must be fulfilled to place a worker in any grade with an impairment rating.

It is recognized with some respiratory conditions (e.g. bronchiectasis), that pulmonary impairment can occur that does not significantly impact pulmonary function or exercise test results, but that does impact the ability to perform activities of daily living. In these limited cases, impairment



# XXI. Respiratory System Conditions

rating is assigned based on extent and severity of pulmonary dysfunction and on inability to perform activities of daily living.

Some assistance may be obtained from the "Guidelines to the use of the I.L.O. International Classification of Radiographs of Pneumoconiosis".

This booklet was published by the International Labour Office and was revised in 2011.

See Appendix B for Pulmonary Function Tables.

See Appendix C for Impairment Classification for Respiratory Disease, Using Pulmonary Function and Exercise Tests.



# XXIII. Contact Dermatitisology

# A. Contact Dermatitis

Signs and Symptoms	Treatment (see below for details)	Percentage
Skin disorder signs and symptoms not present when the worker is removed from a workplace sensitizing agent, but the worker reacts with recurrent signs and symptoms of marked extent and severity when exposed to the sensitizing agent. The worker experiences these signs and symptoms when he or she returns to the workplace under conditions that do not expose the worker to irritant levels of the sensitizing agent or other known dermal irritants. After considering medical advice, the Board determines that the worker must avoid workplaces containing the sensitizing agent.	Requires no treatment.	1 – 2
In assessing the disability rating, the Board considers the extent to which the sensitizing agent is commonly found in work environments. Generally, the more common the sensitizing agent, the higher the disability rating.		
Skin disorder signs and symptoms present or intermittently present.	Requires no or intermittent treatment with agents listed in 1 below.	3 – 5
Skin disorder signs and symptoms intermittently or constantly present.	Requires intermittent treatment with agents listed in 1 and 2 below.	6 – 24
Skin disorder signs and symptoms constantly present.	Constant treatment with agents listed in 1 and 2 below. Cases such as these are rare and require tertiary level medical input.	25 – 50

In evaluating the severity of the worker's condition and its effect on earning capacity, the Board officer may consider the limitations experienced by the worker in his or her activities of daily living.

# XXIII. Contact Dermatitisology

#### **B.** Other skin conditions

#### Percent Value of Whole Person

Grade 1	Skin disorder signs and symptoms present or intermittent present AND	
	No or few limitations in performance of activities of dail living, exposure to certain chemical or physical agents temporarily increase limitation AND	y may
	Requires no or intermittent treatment	0 – 5
Grade 2	Skin disorder signs and symptoms present or intermitte present AND	ently
	Limited performance of some activities of daily living AND	
	Requires intermittent to constant treatment	6 – 15
Grade 3	Skin disorder signs and symptoms present or intermitte present AND	ently
	Limited performance of many activities of daily living AND	
	Requires intermittent to constant treatment	16 – 30
Grade 4	Skin disorder signs and symptoms constantly present AND	
	Limited performance of many activities of daily living, including intermittent confinement at home AND	
	Requires intermittent to constant treatment	31 – 40
Grade 5	Skin disorder signs and symptoms constantly present AND	
	Limited performance of most activities of daily living in occasional to constant confinement at home	cluding
	Requires intermittent to constant treatment	41 – 50

Cosmetic, strength, sensory and range of motion awards must still be applied up to the allotted maximum.

