

ADJUDICATION OF ACTIVITY-RELATED SOFT TISSUE DISORDER (“ASTD”) CLAIMS

Effective Date: June 15, 2004

1. BACKGROUND

In several cases it has been unclear whether an Activity-related Soft Tissue Disorder (“ASTD”) claim should be adjudicated as a personal injury under section 5 or as an occupational disease under section 6 of the *Workers Compensation Act* (the “Act”). As well, given that these types of injuries/conditions are multi-factorial, further guidance on risk factor analysis is required.

2. PURPOSE

The purpose of this Directive is to:

- 1) Clarify the difference between a personal injury and an ASTD (i.e. to clarify what constitutes an ASTD for the purposes of section 6 adjudication and what type of symptom onset should remain in the realm of a section 5 adjudication).
- 2) Provide further guidelines regarding what is considered a minimum risk exposure for the development of an ASTD.

3. EFFECTIVE DATE

This Directive is effective June 15, 2004 and applies to all adjudication decisions made on or after that date.

4. LAW

Section 1 of the *Act* defines an occupational disease as:

... any disease mentioned in Schedule B, and any other disease which the Board, by regulation of general application or by order dealing with a specific case, may designate or recognize as an occupational disease, and "disease" includes disablement resulting from exposure to contamination

Section 5 of the *Act* states, in part:

5(1) Where, in an industry within the scope of this Part, personal injury or death arising out of and in the course of the employment is caused to a worker, compensation as provided by this Part must be paid by the Board out of the accident fund.

Section 6 of the Act states, in part:

6 (1) *Where*

(a) a worker suffers from an occupational disease and is thereby disabled from earning full wages at the work at which the worker was employed or the death of a worker is caused by an occupational disease; and

(b) the disease is due to the nature of any employment in which the worker was employed, whether under one or more employments,

compensation is payable under this Part as if the disease were a personal injury arising out of and in the course of that employment. A health care benefit may be paid although the worker is not disabled from earning full wages at the work at which he or she was employed.

(3) If the worker at or immediately before the date of the disablement was employed in a process or industry mentioned in the second column of Schedule B, and the disease contracted is the disease in the first column of the schedule set opposite to the description of the process, the disease is deemed to have been due to the nature of that employment unless the contrary is proved.

(4.1) The Board may, by regulation,

(a) add to or delete from Schedule B a disease that, in the opinion of the Board, is an occupational disease,

(b) add to or delete from Schedule B a process or an industry, and

(c) set terms, conditions and limitations for the purposes of paragraphs (a) and (b).

(4.2) Despite subsection (4.1), the Board may designate or recognize a disease as being a disease that is peculiar to or characteristic of a particular process, trade or occupation on the terms and conditions and with the limitations set by the Board.

The legislation has listed the following ASTD diagnosis in Schedule B of the Act:

- bursitis, tendinitis, tenosynovitis, hand or arm vibration syndrome (“HAVS”)

5. POLICY

Rehabilitation Services and Claims Manual (“RSCM”) Policy item #13.00, Personal Injury, defines a personal injury as:

...any physiological change arising from some cause, for example, a limitation in movement of the back or restriction in the use of a limb. It is not confined to injuries which are readily and objectively verifiable by their outward signs, e.g. breaks in the skin, swelling, discolouration, deformity, etc. It includes, for example, strains and sprains.

Policy item #13.10, *Distinction between an Injury and Disease*, states that there is a *common difficulty ... to distinguish between an injury and a disease*, and states that the distinction is best defined by example. Diseases listed in the example include *osteoarthritis* and a *disablement resulting from exposure to vibrations over time*, and that *only diseases which are occupational diseases are compensable*.

The policy provides an example of a logger who had fraying of the cartilage: if the fraying was caused through physical activity, and not through degenerative disease or a disorder of internal origin, there would be an injury, rather than a disease.

Policy item #25.10, *Legislative Requirements*, states that:

A disease which is attributed to or is the consequence of a specific event or trauma, or to a series of specific events or traumas, will be treated as a personal injury and will be adjudicated in accordance with the policies set out in Chapter 3.

Policy items #26.01 to 26.04 explain the various ways in which an occupational disease may be designated or recognized.

Policy item #27.40 provides direction when determining whether the diagnosis is due to the nature of any employment and further states that policy items #27.11 through #27.35 require an analysis of risk factors relevant to the causation of ASTDs.

6. ADJUDICATIVE GUIDELINES

Determining whether the Condition is an Occupational Disease or a Personal Injury

I. Recognized by the Board or listed on Schedule B as an Occupational Disease

- a) If the condition is either recognized by the Board or listed in Schedule B, it should be adjudicated under section 6 UNLESS the evidence indicates the condition is:
- attributable to a specific event/trauma;
 - a consequence of a specific event/trauma; or
 - a consequence of a series of specific events/traumas.

II. Not Recognized nor listed on Schedule B as an Occupational Disease

The following are some of the conditions that have not been recognized or scheduled under Board policy as occupational diseases:

- fibrositis
- degenerative disc disease
- osteoarthritis (except for the first CMP joint of the thumbs in a physiotherapist)
- chondromalacia
- patella-femoral syndrome
- myositis

- sprains and strains
- fibromyalgia
- arthritis
- adhesive capsulitis

Accordingly, these conditions should be adjudicated under section 5 of the *Act*.

III. General or Unclear Diagnostic Labels

If the diagnosis is unclear or the condition is described as a non-traumatic condition such as a 'repetitive strain injury' or 'overuse syndrome', further investigation is required. In particular, Board officers should commence risk factor analysis while simultaneously obtaining diagnostic clarification from the physician (or "working diagnosis" from the Medical Advisor). See Policy item #27.35, *Unspecified or Multiple-Tissue Disorders*.

IV. Sudden Symptom Onset

When symptom onset occurs suddenly, as opposed to gradual/slow onset of symptoms, the claim should be adjudicated under section 5.

V. Gradual Onset without Trauma

When no single incident is identified AND the diagnosis is not listed on Schedule B, the following should be considered:

- a. Is the condition the result of an activity resulting in symptom onset within one shift? If so, the adjudication takes place under section 5.
- b. Is the condition the result of an activity resulting in symptom onset over more than one shift? If so, the adjudication takes place under section 5 and section 6.

VI. Adjudicating both Sections 5 and 6

When adjudicating a confirmed ASTD diagnosis (e.g. those recognized or listed on Schedule B) an adjudication under section 5 should also be undertaken. The purpose of this is to rule-out that there was personal injury arising from a traumatic event.

When adjudicating an ASTD claim where there is a "working diagnosis" only, there is the possibility that both sections 5 and 6 need to be adjudicated. For example, a working diagnosis of "repetitive strain", which occurred over the space of three shifts would be adjudicated under section 5 and section 6.4.

VII. Grid

Once a diagnosis or working diagnosis is obtained, the following table or "grid" may then help in determining which claims are adjudicated under section 5 or section 6.

Diagnosis	Sudden Symptom Onset/Specific Event	Symptom Onset on One Shift Only		Symptom Onset Greater Than One Shift
Non-Recognized and Non-Scheduled (the diagnosis is neither recognized nor listed on Schedule B)	Section 5 e.g. traumatic wrist strain	Section 5 e.g. wrist strain but no trauma		Section 5 e.g. wrist strain with no trauma, but symptoms present for longer than one shift
ASTD (the diagnosis is either recognized OR listed on Schedule B.) ¹	Section 5 e.g. traumatic wrist tendinitis	Section 5 (recognized diagnosis only) e.g. wrist carpal tunnel syndrome	Section 6* (scheduled diagnosis only) e.g. wrist tendonitis	Schedule B 6(3) Section 6(1) e.g. wrist tendonitis
ASTD (the "diagnosis" is neither formally recognized nor listed on Schedule B, but includes other diagnoses listed in policy item #27.00)	Section 5 e.g. sudden onset wrist strain	Section 5 (neither formally recognized nor scheduled diagnosis) e.g. wrist "repetitive strain injury"		Section 5 (or) Section 6(4) (where specific diagnosis is to be considered "recognized" as an occupational disease)

* ASTD diagnoses which are listed on Schedule B are: bursitis, tendonitis, tenosynovitis, HAVS

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¹ The legislation has listed tendonitis on Schedule B as a disease. However, it is difficult to contract an occupational disease over the course of one shift. As carpal tunnel is not listed, where the symptom onset occurs over the course of only one shift, these should be adjudicated under section 5.

Appendix I

Assessment Guidelines¹: (consideration of force, magnitude, duration)

These guidelines are not absolutes and consideration must also be given to the cumulative effects of multiple risk factors. The ‘weighing of evidence’ process takes individual characteristics into play. Weighing the cumulative effects (e.g. continuous exposure versus intermittent exposure; or combinations of force and posture) of exposure to risk factors is required in the adjudication of ASTD claims.

Risk Factors

Posture	Body Part	Movement	Degrees of Movement
	Shoulder	Flexion	Greater than 60
	Shoulder	Abduction	Greater than 60
	Elbow	Flexion	Greater than 120
	Elbow	Extension	Greater than 180
	Elbow	Pronation	Greater than 80
	Elbow	Supination	Greater than 80
	Wrist	Flexion	Greater than 25 from anatomical
	Wrist	Extension	Greater than 25 from Functional
	Wrist	Ulnar deviation	Greater than 10
	Wrist	Radial deviation	Greater than 10
	Thumb	Flexion	Full Range
	Thumb	Abduction	Greater than 45
	Finger	Flexion	Full Range
	Hip	Flexion	Greater than 120
	Hip	Extension	Greater than 10
	Knee	Flexion	Greater than 120
	Ankle	Planta Flexion	Greater than 30
	Ankle	Dorsi Flexion	Greater than 10

Work Posture	Position	Surface	Duration
	Squatting		Greater than 2 hours
	Kneeling	Hard	Greater than 2 hours
	Crawling	Hard	Greater than 2 hours

Contact Stress	Hammering	Repetition	Duration
	Any Body Part	10 per hour	Greater than 2 hours

Repetition	Body Part	Movements	Duration
	Shoulder	2 per minute	Greater than 2 hours
	Elbow	10 per minute	Greater than 2 hours
	Wrist	10 per minute	Greater than 2 hours
	Finger	200 per minute/ finger (100 keystrokes/min)	Greater than 4 hours

Force (applied to/by affected body part)	Lift	Repetition	Duration (cumulative/day)
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55 lbs	more than 10 per day		
25 lbs	more than 25 per day from below knee to above shoulders, or lift at arms length		
10 lbs	more than 2 per minute		Greater than 2 hours

Any object lifted and carried greater than 9 meters increases Risk Factors

Push / Pull	Duration	Distance
20 lbs	Greater than 2 hours	Greater than 60 meters

Risk factors increased on rough or inclined surfaces or unstable loads

Grip	Weight	Duration
Power	10 lbs or more unsupported	Greater than 4 hours
Pinch	2 lbs or more unsupported	Greater than 4 hours

Risk factors increased with poor fitting / low friction gloves

Appendix II

GLOSSARY OF TERMS

<i>Administrative Controls</i>	The provision, use, and scheduling of resources in the workplace, including planning, organizing, and staffing and coordinating.
<i>Awkward Posture</i>	Postures where joints are held at or near the end range of motion for that joint, or where loads are supported by passive tissues, or where muscle tension is required to hold the posture. Consideration should be given to: <ul style="list-style-type: none">➤ As a joint moves farther away from its neutral range, it requires more effort to achieve the same force.➤ The weight of the body may contribute significantly to the total load. For example, in long arm reaches, the shoulder muscles must bear the weight of the entire arm.➤ Awkward whole body position when several joints of the body are in awkward postures at the same time. For example, kneeling, crouching involves several joints.
<i>Cycle time</i>	The time to complete one work activity (includes pause time). A time interval during which a regularly occurring sequence of events is completed. A cycle can be the time to complete a job with many tasks or the time to produce one unit.
<i>Duration</i>	The percentage of the work day spent on the repetitive activity. The continuous time a task is performed without an adequate rest break.
<i>Dynamic</i>	Means that there is movement of the affected muscle/tendon group during the task. The biomechanical aspects of the human body in motion.
<i>Engineering Controls</i>	The physical arrangement, alteration or design of workstations, equipment, materials, production facilities or other aspects of the physical work environment.
<i>Ergonomics</i>	The applied science that seeks to fit the job to the individual through the evaluation and design of the work environment in relation to human characteristics and interactions in the workplace.
<i>Ergonomic Factors</i>	Factors which affect the interaction of an individual with the work environment.
<i>Force</i>	The amount of physical effort the individual has to put into a particular movement or activity. Force may be either external (a force applied, voluntarily or involuntarily, to the

surface of the body) or internal (tension within muscles, tendons, and ligaments). Consideration should be given to:

- *Posture* – in an awkward posture you exert more force because your muscles cannot perform efficiently.
- *The speed of movement* – you need extra force at both the beginning and the end of rapid movements such as throwing or catching a load and when your load moves suddenly or unexpectedly.
- *The duration of the exertion* – the longer or more frequently you exert a force, the greater the demand on the body.
- *The weight of the load* – as the weight of a load is increased, you must exert more force when lifting, lowering, pushing, pulling, carrying, or gripping.
- *The friction of the load* – both high and low friction can increase the force you must exert. For example, pushing loads on carpets and holding tools with slippery handles requires both extra force.

<i>Frequency</i>	Relates to the amount of time during the work cycle that the affected muscle/tendon groups are working, compared to the amount of time such tissues have to return to a relaxed or resting state.
<i>Frequently repeated</i>	means the frequency of the work cycle for the tasks being performed (the number of times the same motion or muscle contraction is performed within a specified period).
<i>Job Enlargement</i>	The addition of tasks to a job to make it more varied and interesting.
<i>Job Rotation</i>	The planned interchange of jobs among a group of workers at regular intervals to vary each worker's tasks. In this way, postures are varied, stressful tasks are shared and interest and versatility are increased.
<i>Magnitude</i>	Means the degree of exposure to a noted risk factor
<i>Neutral Position</i>	The body position which minimizes stresses on the body. Typically the neutral posture will be near the mid-range of any joint's range of motion.
<i>Repetition</i>	A pattern of movements performed over and over during a given time period. Consideration should be given to: <ul style="list-style-type: none">• Cycle time• Work period• Duration• Rest period within each cycle

<i>Rest Period</i>	The portion of each work cycle where the muscle/tendon is maintained in a neutral position.
<i>Risk</i>	The likelihood and extent of harm a individual may encounter because of a work condition or activity.
<i>Risk Factor</i>	<p>A general term for a factor which the medical/scientific research indicates may be relevant to the issue of causation. The principle risk factors to consider when looking at work performed are the intensity, duration and frequency of:</p> <ul style="list-style-type: none"> • Repetition • Force • Posture • Vibration
<i>Significant component</i>	Means that the worker has been performing work activities, involving the described structure, for sufficiently long enough that it is biologically plausible that the condition affecting the muscle/tendon group has resulted from the work activities.
<i>Static Exertion</i>	A muscular action which involves maintaining some part of the body in a fixed posture.
<i>Static Load</i>	When a limb is held or maintained against gravity, or against some other external force.
<i>Sustained</i>	Means that the affected muscle/tendon group has been held in a static position for a sufficient period of time that it is biologically plausible that the condition affecting the muscle/tendon group has resulted from the work activities.
<i>Task</i>	A distinct work activity to accomplish a specific purpose. One or more elements can comprise a task. Several tasks can comprise a job.
<i>Task Variation</i>	The degree to which a task remains unchanged. Consideration should be given to how varied are the work duties; although a task appears repetitive, are there frequent interruptions such as telephone calls, reloading a machine, moving the next piece of work into place etc; the number of and duration of rest periods; the amount of job rotation; the less varied the task, the less likely are the affected tissues able to return to a resting state of recovery.
<i>Torque (moment)</i>	A force that produces or tends to produce rotation; the rotational force about a point (e.g., torque is the force required to tighten a bolt).

Work Environment Includes the physical layout, location, equipment, materials, work processes, and conditions such as temperatures and light.

Work Period The time to complete the entire task before job rotation or a break.

Work Process Includes the sequence of activities and the interaction of persons, equipment, materials, energy and information. This term is also referred to as the "organization of work".

The following tables identify the terms of reference for:

Magnitude, Frequency, Duration

	None 0%	Infrequent 1 – 10 %	Occasional 11 – 33%	Frequent 34 – 66%	Constant 67 -100 %
Sedentary	10 lbs	10 lbs	10 lbs	Negligible	Negligible
Light	20 lbs	20 lbs	20 lbs	10 lbs	10 lbs
Medium	50 lbs	50 lbs	50 lbs	20 lbs	10 lbs
Heavy	100 lbs	100 lbs	100 lbs	50 lbs	20 lbs
Very Heavy	Over 100 lbs	Over 100 lbs	Over 100 lbs	Over 50 lbs	Over 20 lbs

LOW		MEDIUM		HIGH	
0	2	4	6	8	10
Hands idle most of the time: no regular exertions	Consistent, conspicuous long pauses; or very slow motions	Slow steady motion/ exertion; frequent brief pauses	Steady motion/ exertion; Infrequent pauses	Rapid steady motion/ exertion; Infrequent pauses	Rapid steady motion or continuous exertion, difficulty keeping up

ⁱ Reference materials used in establishing these Assessment Guidelines include:

- *Workers Compensation Act* (sections 5 and 6)
- RSCM, Chapter 4
- ASTD Reference Guide
- Occupational Health and Safety Guidelines
- Current medical literature (Best Medical Practice Guidelines, NIOSH, OSHA, WCB Prevention Guidelines, Interjurisdictional Information)