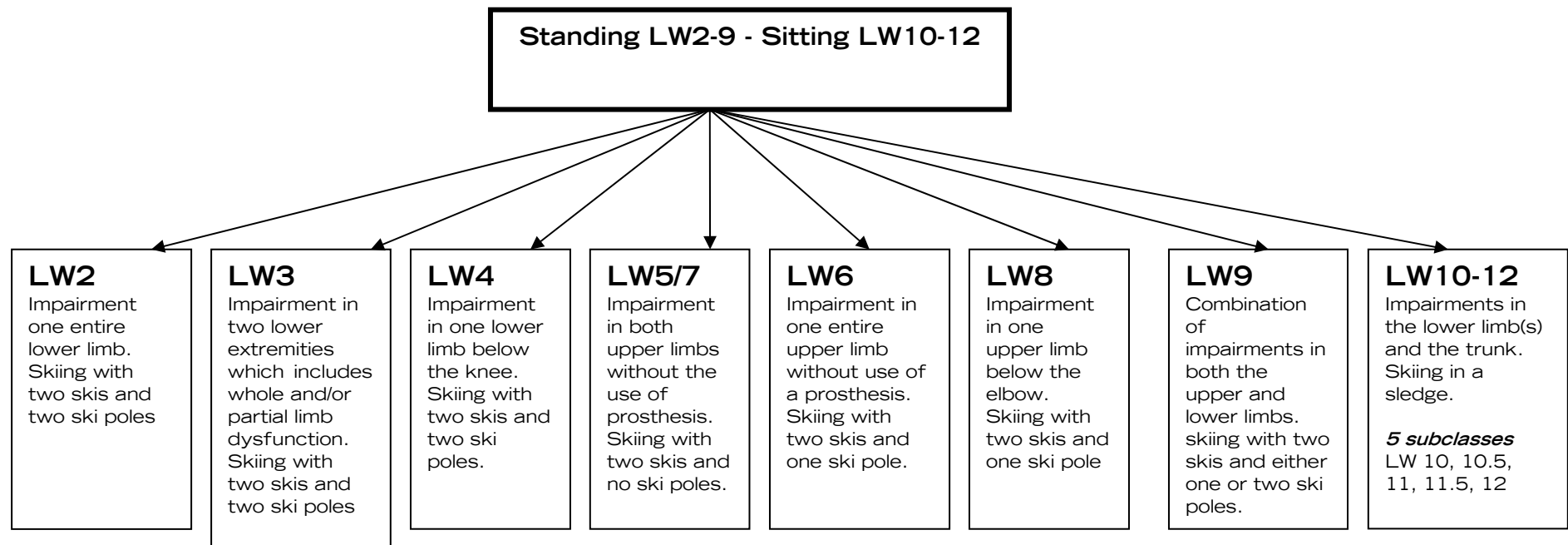
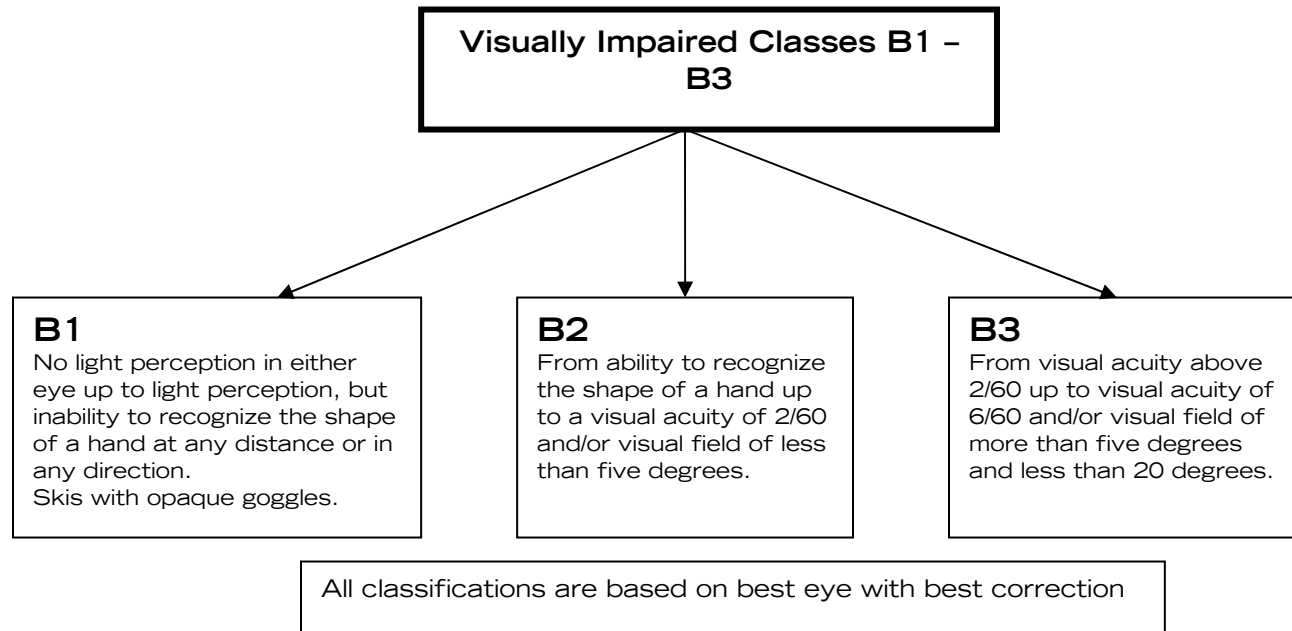


IPC Nordic Skiing Classification Handbook

SPORT CLASSES

Note: This document is a clarification on the criteria to allocate a skier in a particular sport class under the actual classification system that will be in place up to, and including the Vancouver 2010 Paralympic Winter Games. In light of the IPC Classification Code review, the IPC Nordic Skiing Classification System will be revisited to reflect sport-specific sport class allocation to be implemented post Vancouver 2010





Locomotor Winter Classification LW2-12

The Functional Classification for locomotor impairment is based on:

- Thorough medical documentation of the athlete's impairment
- Functional tests to be performed with standardized equipment. The standardized testing board will be used for the sitting classes
- Functional observation in training practice and/or competition
- For borderline cases, functional observation shall be the final criteria.

Note: Any classification of an athlete may be changed by the official classification team during a competition following First Appearance or resolution of a Protest under Exceptional Circumstances. The new classification of an athlete, when changed during the competition, shall be used in his/her next event of the competition and thereafter.

Classification Procedures LW classes

1. Completion of the personal data and medical information on the classification card.

2. Completion of a manual muscle test (Clarkson 2000) and/or joint mobility test (Clarkson 2000), and entering test results on the classification card. For the assessment of athletes with spinal cord injury, the ASIA classification has to be used (Maynard 1997) and for the assessment of CP Athletes the Ashworth Scale (Ashworth 1964).

3. Completion of a functional assessment with the appropriate tests which are dependent on the functional ability of the athlete.

4. Functional observation of the athlete in practice and/or in competition. Observation in competition is a necessary component of the classification. Special attention will be given to athletes with dys-co-ordination disabilities, athletes with borderline cases, as well as athletes suspected of lack of co-operation.

References:

Testing of Spasticity: Ashworth Scale (Ashworth, B. Preliminary trial of carisoprodal in multiple sclerosis. *Practitioner*. 192:540-542, 1964.)

Testing of Sensibility: After ASIA classification (Maynard F, Bracken M, Creasey G, Ditunno J, Donovan W, Ducker T, et al. International Standards for Neurological and Functional Classification of Spinal Cord Injury. *Spinal Cord* 1997;35:266-74.)

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Testing of Muscle Strength: (Clarkson, H. M. *Musculoskeletal assessment: joint range of motion and manual muscle strength*. 2nd ed. ed. Philadelphia: Lippincott Williams & Wilkins,, 2000, xiv, 432 p.)

Video Recording of the Athlete

The official classification teams will also be responsible for and manage any video recording necessary for classification purposes associated with the competition.

Athletes can only compete as a standing competitor or as a sitting competitor in a given season. Equipment used in competition needs to be listed on the classification card.

Athletes with neurological impairment may be re-evaluated on an annual basis until they show a stable profile. They may be re-evaluated at least once every four years.

Standing Locomotor Winter Classes LW2-9

Individual % are allocated in the classes LW2, LW3 and LW9.

Class LW2

Athletes eligible for Class LW2 are those with impairment in one entire lower limb (involving pelvis and structures distal) skiing with two skis and two ski poles.

Inclusion Criteria:

- Single above knee amputation.
- Single through knee amputation
- Single arthrodesis or ankylosis of knee and/or hip with zero degree of movement of the knee and/or hip.
- Single lower limb impairment that may require use of full limb orthosis.
- Single lower limb affected by either:
 - Paralysis comparable to a through knee or above knee amputation
 - Dysmelia comparable to a through knee or above knee amputation
 - Other orthopedic or neurological involvement comparable to a through knee or above knee amputation.

Class LW3

Athletes eligible for Class LW3 are those with impairment in two lower extremities which includes whole and/or partial limb dysfunction skiing with two skis and two ski poles.

LW3 athletes may be reallocated in other classes depending on their functional ability on the track.

Inclusion Criteria:

- Above knee or below knee amputations in both legs.
- Bilateral forefoot amputation proximal to metatarsals.
- Functional double foot impairment resembling double forefoot amputation.
- Permanent incomplete SCI paralysis without spasticity where muscle strength is decreased bilaterally; maximal 65 points total for both limbs and with a minimal of five points missing in one of the legs and one of the movements must have at least three points missing.
- Incomplete SCI with severe spasticity (Grade 3-2)
- Neuromuscular diseases comparable to double below knee amputation with ordinary prosthesis.

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- Spastic diplegia
- Dysmelias comparable to double below knee amputation with ordinary prosthesis.
- Bilateral fixed knee joints.

Class LW4

Athletes eligible for Class LW4 are those with impairment in one lower limb below the knee skiing with two skis and two ski poles.

Inclusion Criteria:

- Single below knee amputation minimum through the ankle joint.
- Motor paresis or paralysis with decrease of muscular strength on the lower limbs with a maximum of 70 points (able bodied normal = 80) of muscle strength. At least 10 points missing in one of the legs and one of the movements must have at least three points missing.
- Monoplegia, comparable with single below knee amputation
- The difference in length between right and left legs should be minimally 7cm after correction.

Class LW5/7

Athletes eligible for Class LW5/7 are those with impairment in both upper limbs without the use of prosthesis skiing with two skis and no ski poles. The impairment shall be such that the athlete can not use poles. If an athlete in LW5/7 athlete is able to use a ski pole then he must complete in LW6 or LW8.

Inclusion Criteria:

- Bilateral upper limb amputation
- Motor paresis/paralysis or dysmelia of both upper limbs

Class LW6

Athletes eligible for Class LW6 are those with impairment in one entire upper limb skiing with two skis and one ski pole without the use of prosthesis. The impairment shall be such that the athlete can only use one ski pole.

Inclusion Criteria:

- Single upper limb amputation through or above the elbow.
- Comparable motor paresis or paralysis in one upper limb above the elbow and/or involves the entire limb*.
- Dysmelia or similar condition above the elbow.
- Neuromuscular disease or orthopedic condition affecting one arm comparable to above criteria*.

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*The athlete has no use of the entire limb and therefore the limb must be fixed to the body during competition. Use of prosthetic is not allowed.

Class LW8

Athletes eligible for Class LW8 are those with impairment in one upper limb below the elbow, skiing with two skis and one ski pole without the use of prostheses. The impairment shall be such that the athlete can only use one ski pole.

Inclusion Criteria:

- Single upper limb amputation below the elbow
- Comparable motor paresis or paralysis in one upper limb below the elbow.
- Dysmelia or similar conditions below the elbow.
- Neuromuscular disease or orthopedic condition affecting one arm comparable to above criteria.

Athletes in this class will be allowed to use affected arm to assist poling or paddling.

LW9

Athletes eligible for LW9 are those with a combination of impairments in both the upper and lower extremities. These athletes will ski with 2 skis and either one or two ski poles. Upon observation, athletes may be placed in other classes depending on the athlete's technical ability on the track.

Inclusion Criteria

- The athlete has impairment in one arm and one leg meeting minimal impairment criteria according to LW4 and LW8.
- CP disorders affecting at least one arm and one leg.

Sitting Locomotor Winter Classes LW10-12:**Minimum Disability Criteria at Least:**

- Single below knee amputation minimum through the ankle joint.
- Motor paresis or paralysis with decrease of muscular strength on the lower limbs with a maximum of 70 points (able bodied normal = 80) of muscle strength. At least 10 points missing in one of the legs and one of the movements must have at least three points missing.
- Monoplegia, comparable with single below knee amputation
- The difference in length between right and left legs should be minimally 7cm after correction.

Note: For all sitting classes the athletes are not permitted to use or have their lower limbs outside of their equipment at any time during the competition.

Criteria for functional assessment in sitting classes on the testing board. The athlete has to be strapped to the test board, at the hip joint, over the knees and over the ankle.

1. Trunk Function

- a. Muscle function
- b. Range of movement

2. Hip Function

- a. Flexion
- b. Extension
- c. Range of movement
- d. Amputee stump length

3. Buttock Sensibility According to the ASIA Classification

- 0 = No function, test impossible
- 1 = Weak or poor function
- 2 = Fair function
- 3 = Normal function

The athlete is in the long sitting position or with bended knees on the test table depending on his/her disability. Special designed cushions are used to sit on and as support under the knees. The athlete has to be strapped to the test board, at the hip joint, over the knees and over the ankle.

Test 1

Sitting ability and movement in the sagittal plane. Sitting with the hands behind the neck, flex forwards at the waists as much as possible. Then extend the trunk and lift to a position of 45° forwards flexion. Hold that position, keeping the hands behind the neck.

Test 2

Sitting ability and movement in the sagittal plane. Arms folded over the chest, lean back to hold 45° backwards extension and come up again to a complete upright sitting position.

Test 3

Sitting ability and movement in the sagittal and frontal planes. Free rotation of the trunk in the long sitting position. Arms fully abducted.

Criteria for Observation on the Track in Sitting Classes**1. Sitting Position**

- a. Height of the back of the sledge
- b. Leg position
- c. Strapping

2. Performance on the Track

- a. Changing tracks with trunk and hip assistance
- b. Climbing - trunk assistance
- c. Downhill - trunk stability and control
- d. Trunk control in curves

Class LW10

Athletes eligible for class LW10 are those with impairments in the lower limb(s) and the trunk.

Athlete Profile:

- Minimal trunk muscle activity in flexion and extension so that the athlete is unable to maintain a sitting position against gravity while properly strapped to the test table and without arm support.
- No buttock sensibility S1-S5

Class LW10.5

Athletes eligible for class LW10.5 are those with impairments in the lower limb(s) and the trunk.

Athlete Profile:

- The athlete has some upper abdominal and trunk extensor muscle activity or lower motor function with spinal fusion or scoliosis.
- The athlete will sit statically without arm support when sitting with proper strapping to the test table and will not be able to move beyond base of support.
- No buttock sensibility S1-S5

Class LW11

Athletes eligible for class LW11 are those with impairments in the lower limbs and the trunk. The athlete has most abdominal muscles and trunk extensor muscles, especially those muscle attaching to the pelvis.

Athlete Profile:

- Unable to stand and/or walk even with orthosis
- Able to sit unsupported (+ or - strapping) on the test table and move trunk out of base of support and return unaided while maintaining sitting position.
- Unable to flex either hip from a sitting position against gravity
- May have loss of buttock sensibility S1-S5

Class LW11.5

Athletes eligible for class LW11.5 are those with impairments in the lower limb(s) and the trunk. Athletes have near to normal trunk muscles activation.

Athlete Profile:

- Possibility to stand or walk with or without aid of orthosis
- Able to flex either hip from a sitting position against gravity through partial range
- May have some hip extension (grade 2 or less)
- May have loss of buttock sensibility S1-S5

Class LW12

Athletes eligible for class LW12 are those with impairments in the lower limb(s) with normal trunk function.

Athlete Profile:

- Grade 3-5 hip flexion and extension (unilateral or bilateral)
- May have incomplete loss of buttock sensibility S1-S5
- Able to walk if chooses with or without aids or orthosis

Visually Impaired Classes:

Eligibility: Eligible for competition are those who meet the criteria of the classes B1, B2 and B3.

All classifications are based on best eye with best correction.

Class B1

No light perception in either eye up to light perception, but inability to recognize the shape of a hand at any distance or in any direction. The athlete skis with opaque goggles.

Class B2

From ability to recognize the shape of a hand up to a visual acuity of 2/60 and/or visual field of less than five degrees.

Class B3

From visual acuity above 2/60 up to visual acuity of 6/60 and/or visual field of more than five degrees and less than 20 degrees.

CLASSIFICATION PROCESS

- LW Classes in **IPC** Nordic Skiing

Stage 1 – Examination: This stage entails assessment of impairment, novel motor tasks and movements that are closely related to the movements required in the sport. Two outcomes are possible from this stage:

- No definitive class is assigned for the competition and the Athlete proceeds to Stage 2;
- A class is assigned for the purposes of the current competition and the Athlete proceeds to Stage 3;

Stage 2 – Sports-specific assessment: this entails observation and assessment of the athlete performing the event/s for which they are entered. Performance should be under conditions and at an intensity that are as close as possible to competition conditions. The athlete/ athlete's team is responsible for provision of athlete-specific equipment (classic and free technique skis, sledges, special prosthesis and orthotics used for skiing).

A sport class and sport class status (R or C) is assigned and the Athlete proceeds to Stage 3.

Note that not all athletes are required to attend Stage 2 of classification.

Stage 3 - Review in competition: When the athlete first appears in the competition they should be observed by the classification panel.

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An athlete who fails to cooperate at any stage during the classification process or if, in the opinion of the classification team, deliberately misleads the classifiers shall be considered to have infringed the rules of the competition. The Athlete will be notified and asked to fully co-operate and will be referred to the Chief Classifier for assessment by a second panel. If no co-operative behaviour is observed through the second assessment, the athlete will not be allocated a sport class and disqualified for that particular competition.

The official classification teams will also be responsible for and manage any video recording necessary for classification purposes associated with the competition.

A Classification report will be prepared, presenting a list of all the athletes that have been assigned a class with notification of their sport class status at the end of classification. The report will be submitted by the Chief Classifier to the Event Organizing Committee (EOC) (or designated representative) and the EOC will be responsible for making the report public (usually by displaying it at the classification venue and/or Technical Information Centre). The classification report will include the classification outcome and the time at which the classification report was posted. Any protest regarding these classifications must be lodged with the Chief Classifier as outlined in the classification protest procedures of IPC Nordic Skiing.