

International  
Paralympic Committee



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**Paralympic**  
Committee

# The Epidemiology of Injuries in Paralympic Alpine Skiing at the Sochi 2014 Paralympic Winter Games

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IPC Medical Committee  
VISTA 2015






# IPC Injury and Illness Survey

## Aims and Objectives

1. Characterize injuries and illnesses amongst Paralympic Athletes in as much detail as possible
  2. Identify modifiable mechanisms of injury and pre-disposing factors for injury and illness
  3. Assess the positive and negative long term effects of athletic competition on Paralympic athletes
  4. Devise, implement and assess prevention strategies to reduce injury and illness in various sporting competitions
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# IPC Injury and Illness Survey


**IPC INJURY AND ILLNESS PREVENTION STUDY**  
 International Paralympic Version 1.4.008  
 USER : Ian Stuart Millar  
 TEAM : British Paralympics  
**SOCHI 2014 PARALYMPIC GAMES**

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Your ongoing commitment to this project. If you experience any problems with data entry please contact us.

Would you like to record?

Step 2 : In which sport did the athlete incur the injury?

Proceed to step 2  
Proceed to step 2

- ✓ (Select a sport ...)
- Alpine Skiing
- Biathlon
- Cross-Country Skiing
- Ice Sledge Hockey
- Wheelchair Curling

Record illnesses ; proceed to step 3

On what date would you like to record the above? Click on the number in the appropriate box.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Key
			30	31			
					1	2	<b>Red</b> Data INCOI (days)
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	<b>Yellow</b> Data INCOI (today)
17	18	19	20	21	22	23	
24	25	26	27	28			<b>Green</b> Data COMP
							<b>Grey</b> Future days

1. New or recurrent injury (select only one)
2. Time loss or medical attention only (select only one)
3. Acute, overuse or acute-on-chronic injury (select only one)
4. Stage of the Games (pre Games or during Games) and type of event (select only one)
5. Decision to continue competing/training (select one)
6. Snow type, weather conditions (select one)
7. Principle intrinsic or extrinsic mechanism of injury (select only one)
8. Other mechanisms (more than one)
9. Injury severity (select only one)
10. Primary anatomical area affected (select only one)
11. Secondary anatomical areas (more than one)
12. Specific final diagnosis in the anatomical area selected (select only one)



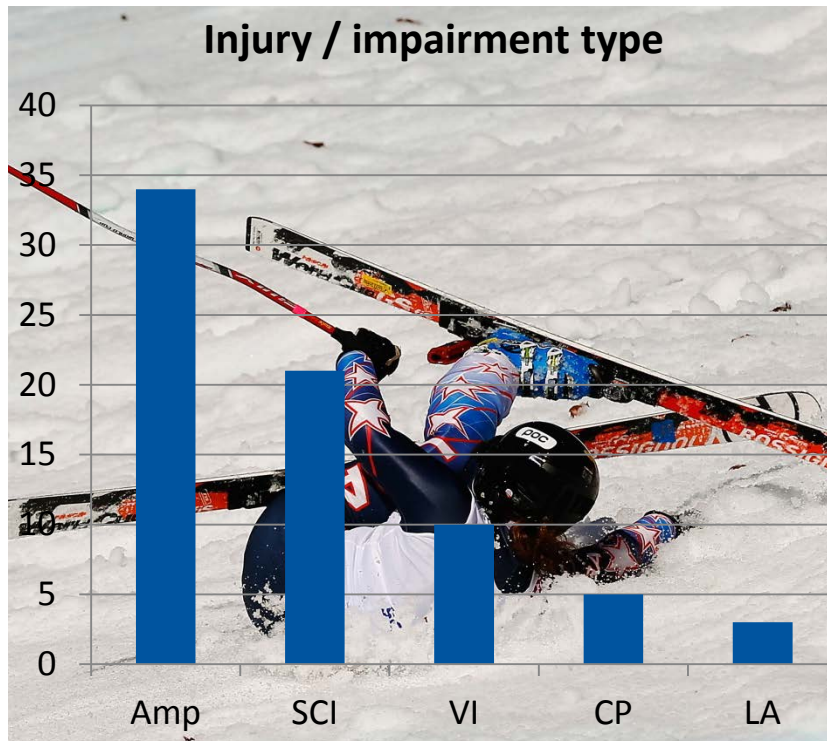
# Alpine Skiing/Snowboard



- 547 Athletes / 45 countries
  - Alpine Skiing/Snowboard : 219 Aa
- IP: 37,0%
- IR: 41,1/1000 athlete days
- Alpine Skiing
  - 73 Injury Encounters / 19 countries
  - 1/3 injuries from 1 country
- Snowboard
  - 14 Injury Encounters / 9 countries



# Alpine Skiing



- 52 / 73 acute injuries
- 28 / 73 injuries resulted in time loss (>1 day)
- Amputee/limb deficiency  
knee – head/face – shoulder & wrist
- Spinal cord injury  
shoulder – neck – head/face
- Visual Impairment  
knee – head/face



# Alpine Skiing

	Upper part of course	Lower part of course	Finish area
Downhill	13 / 8 DNF	5 / 3 DNF	3 / 1 DNF
Super G	3 / 2 DNF	2 / 2 DNF	2 / 2 DNF
Combined	3 / 1 DNF	1	1
Giant Slalom	2 / 1 DNF	2 / 1 DNF	
Slalom	4 / 2 DNF	3 / 1 DNF	

- Amputation/limb deficiency:  
no info - snow conditions – loss of control
- Spinal Cord Injury  
Loss of control – snow conditions
- Visual Impairment  
collided with safety nets – snow conditions



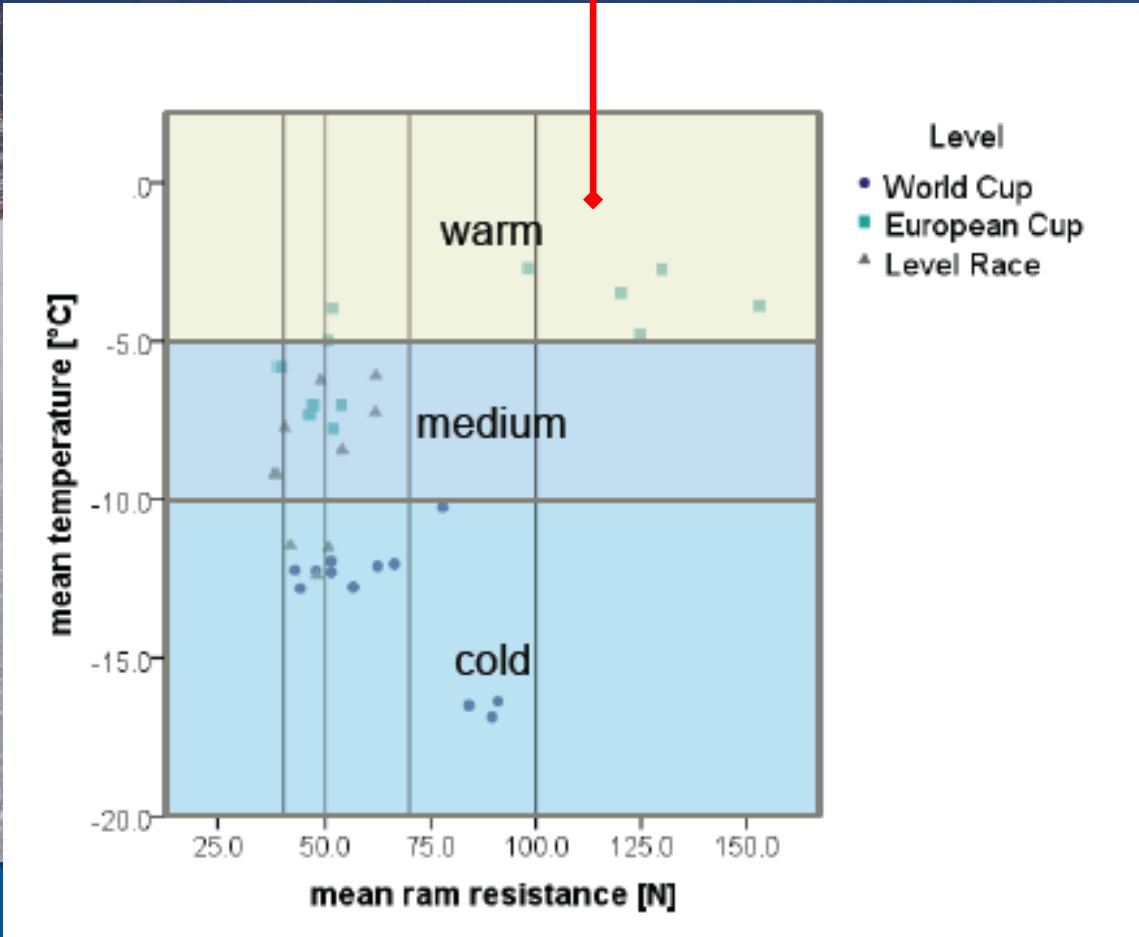
# Snowboard

	Stump	Knee	neck
Loss of control (6/14)		1	2
Prosthesis (2/14)	2		
Twisted extremity (2/14)		2	

- 8 / 14 injuries acute of nature
- 5 / 14 injuries resulted in time loss
- 8 injuries occurred during training







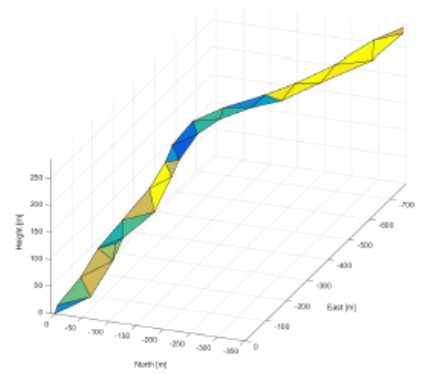
Environment



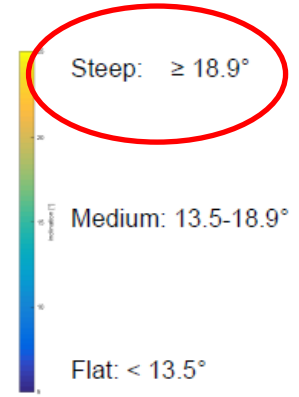


# Course Setting

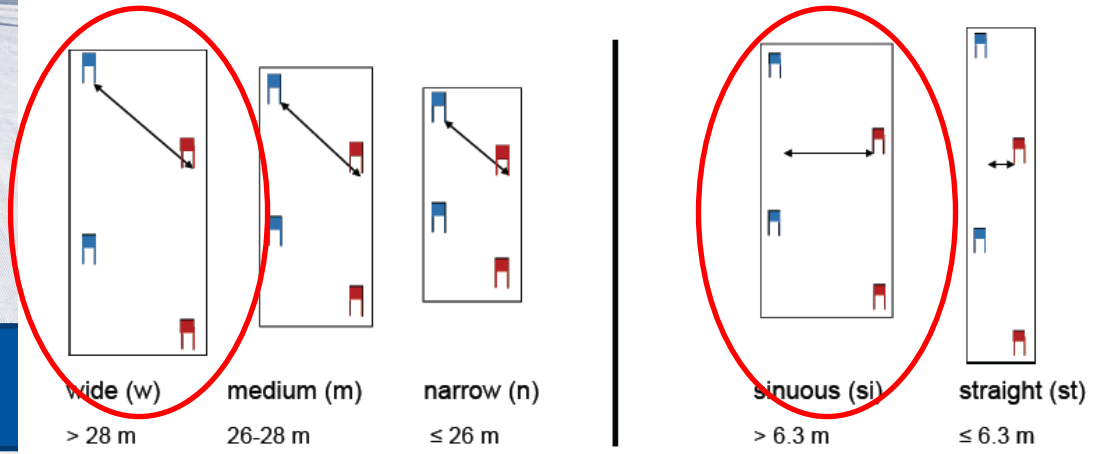
## Steepness



Terrain Model – St. Moritz- Salastrains



## Course setting







Athlete



Coaching





# Equipment

IPC ALPINE SKIING



## IPC POLICY ON SPORT EQUIPMENT

Approval Authority: Governing Board for section 1,2 and 3  
CEO for section 4.  
Responsible Office or Department: IPC Medical Department & Scientific Department  
Approval Date: GB approval on 2 April 2011  
Revision Date(s):  
Related Policies:

### 3. Principles & Definitions

3.1 The fundamental principles regarding the use of equipment used during IPC Sanctioned Competitions and Events, and at Paralympic Games, are:

#### 3.1.1 Safety

All Equipment in use must protect the health and safety of the user, other competitors, officials, spectators and may not cause damage to the environment (e.g. Field of Play).

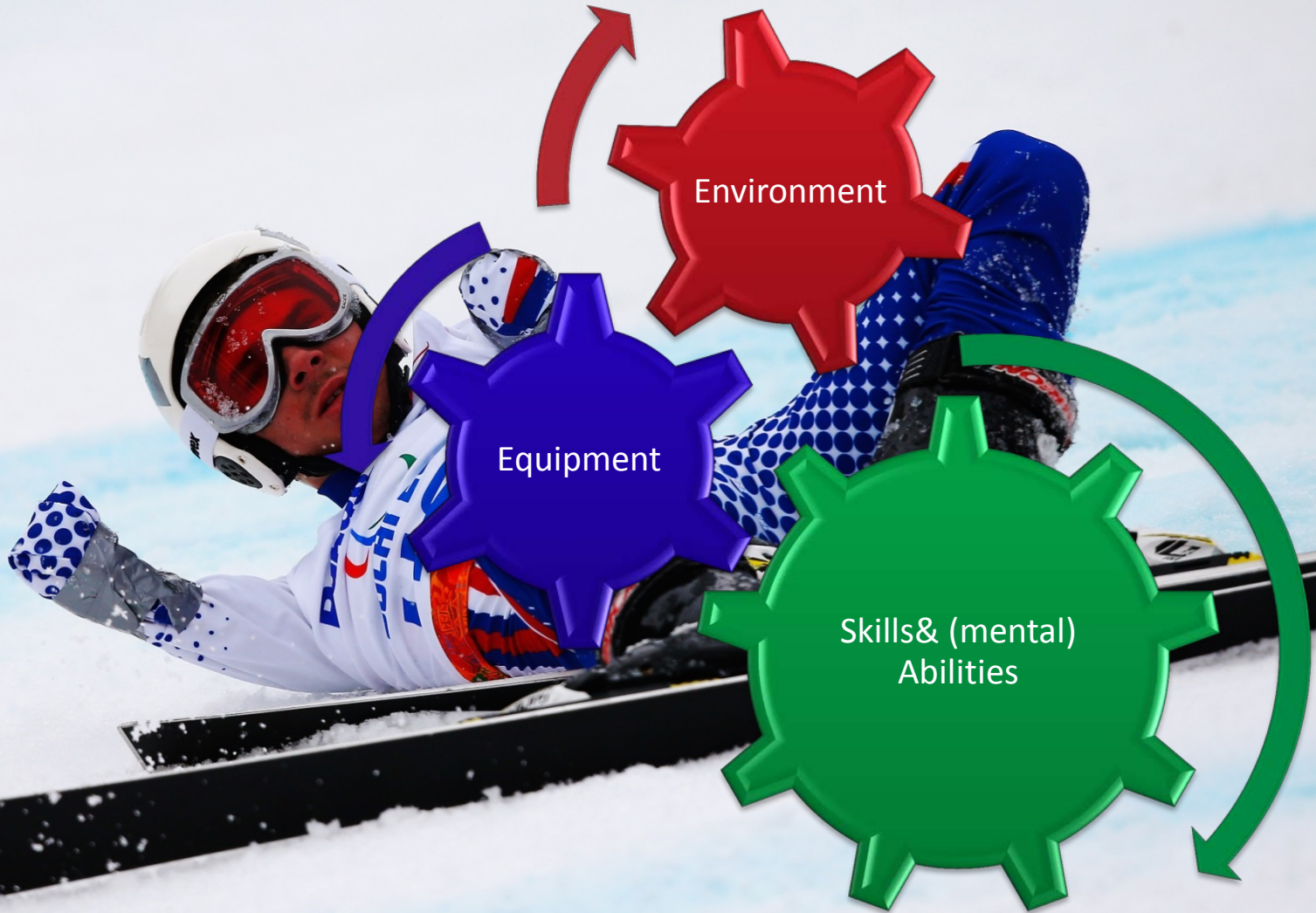
#### 3.1.2 Fairness

Equipment needs to be regulated in sports rules in sufficient detail.

#### 3.1.3 Universality

The cost and large scale availability of (principal components of) equipment should be considered to guarantee access to a sufficiently large number of athletes in the sport.

# Injury ~ Performance ~







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