FIS Injury Surveillance System - FIS ISS
FIS Injury Surveillance System?

- System to monitor injury risk continuously
Why is it important?
Time loss injuries $\geq 1$ day

$n=507$
Severe injuries >28 days

$n=199$

![Bar chart showing injuries per 100 athletes per season for different sports categories: Alpine, Freestyle, Snowboard, Ski jumping, Nordic combined, and Cross country.](chart.png)
Where do the injuries happen?

*All injuries (n=710)*

**Injuries in percentage**

- World Cup & WSC
- Other competition
- Other training (on snow)
- Basic training
- Info missing
Severity

All injuries (n=710)
What kind of injuries?
2006-07 & 2007-08

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<th>4-7</th>
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<td>134</td>
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### Injury types
#### 2006-07 & 2007-08

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<th>Joint and ligament</th>
<th>Muscle and tendon</th>
<th>Contusions</th>
<th>Skin and laceration</th>
<th>Nervous syst/concussion</th>
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Ski jumping and knee injuries...

- 76 ♂ and 70 ♀ interviewed
- Serious knee injuries last 4 seasons
- 11 of 70 (16%) of ♀ jumpers (all during SJ)
- 6 of 76 (8%) of ♂ jumpers (4 during SJ)
Unfortunately

- TD reported 2006-07
  - 36% of time loss injuries
  - 58% of >28 days

- TD reported 2007-08
  - 39% of time loss injuries
  - 62% of >28 days
Please remember

- TD reports are our only record of injuries during WC and other FIS events!
What we are asking

- TDs to complete an injury form for all injuries
- Enlist the assistance of the official race doctor(s) whenever possible - before the start of the race!

“All injuries that occur during official training or competition and require attention by medical personnel”
We encourage...

- Local WC organizers to inform the race doctor(s) about the FIS ISS
- Race doctors to assist the TDs in filling out the injury form
We encourage...

- Team medical personnel to inform the TDs if an injury happens to one of their athletes (so the TDs can fill out the injury form)
- Athletes and coaches to remind team medical personnel to report to the TDs
- Reminder at team captains meeting
### Injury Information

Injuries occurring during warm-up, free skiing/snowboarding or between runs need NOT be recorded! Anmerkung: Verletzungen die während des Aufwärms, bei freien Skifahren/Snowboarding oder zwischen zwei Läufen passieren müssen NICHT gemeldet werden! Note: Des blessures se produisant pendant l'échauffement, le ski/snowboarding libre ou entre les manches/nus n'ont pas besoin d'être enregistrés.

#### Body part

- Head-face/ Kopf-Gesicht/Tête-Face
- Neck-cervical spine/ Nacken-Halswirbel/Neque-Vertèbre cervicale
- Shoulder-clavicle/ Schulter-Schlüsselbein/Epaule-Clavicule
- Upper arm/ Oberarm/Gibas
- Elbow/ Ellenbein
- Forearm/ Unterarm
- Wrist/ Handgelenk
- Hand- Hand
- Finger/ Finger
- Chest/ Brust/Bras/Brustwirbel säule/Thorax (Sternum-Côtes-Haut du dos)
- Abdomen/ Bauch/Abdomen
- Lower back/pelvis-sacrum/ Lendenwirbel säule-Beckenkreuzbein/As du dos-Pelvis-Sacrum
- Hip-groin/ Hüfte-Lesete/Hanche-Aine
- Thigh/ Oberschenkel/Cuisse
- Knee/ Knie/Genoux
- Lower leg/Achilles tendon/ Unterschenkel-Achillessehne/Jambe-Tendon d'Achille
- Ankle/ Fussgelenk/Cheville
- Foot-heel/toe/ Fuss-Fersen-Zeh-Tah-Pied-Talon-Orielis

#### Injury type

- Fractures and bone stress/ Frakturen und Ermüdungsbrüche/Fracture et fracture de fatigue
- Joint (non-bone) and ligament/ Gelenke (nicht Knochen) und Bänder/Joint (articulation) et ligament
- Muscle/ Muskel/Muscle
- Contusion/ Schwellung
- Laceration/ Schnitt
- Nervous System/ Nervensystem/ Système nerveux y compris commotion cérébrale
- Other/ Andere/Autres

Information not available/ Information nicht verfügbar/Information non disponible

#### Absence

- No absence/ Keine Absenz/Pas d'absence
- 1 to 3 days
- 4 to 7 days
- 8 to 28 days
- >28 days

Information not available/ Information nicht verfügbar/ Information non disponible

#### Diagnosis

Specific diagnosis (if available)/ Genauer Diagnose (falls verfügbar)
We are working on:

- Making the injury form easy to find on the FIS website
- Reminder e-mails to local WC organisers and teams to emphasize the importance of injury reporting to the TDs
Take home message

- TD reports are our only record of injuries during WC and other FIS events!
DJO is generously supporting the International Ski Federation Injury Surveillance System
Regarding injuries to ski jumpers

We have understood that you have a very tight schedule during the FIS autumn meetings in Zürich and that there will be no time for an update of the FIS Injury Surveillance System. We therefore just want to inform you regarding a concern the coordinator for the Ladies Ski Jumping Circuit, Edgar Ganster, wanted us to look into, namely a concern regarding knee injuries to the women ski jumpers.

The women's COC level in ski jumping was therefore included in the registration at the same level as World Cup. In addition to the registration by the TD's throughout the season, we also performed interviews with the active male ski jumpers at the World Cup level and female ski jumpers at the Continental Cup level at the season-ending events of the 2007-08 winter season in Lillehammer (Norway) and Schönwald (Germany) regarding serious knee injuries during the previous 4 seasons. A serious knee injury was defined as one leading to an absence from training and competition for >28 days. Coaches and/or physical therapists/physicians were interviewed regarding athletes on the team roster, but not available for interview during the events in question.

A total of 76 male and 70 female ski jumpers were interviewed. Of the 70 female ski jumpers, 11 (16%) reported to have had a serious knee injury. There were 9 cruciate ligament injuries (all anterior cruciate ligaments, ACL) and 2 meniscus injuries. All of the knee injuries had occurred during ski jumping, competition or training. Among the 76 male ski jumpers 6 (8%) reported a serious knee injury, 5 cruciate ligament injuries (2 were ACL injuries) and 1 patella tendon rupture. One of the cruciate ligament injuries and the patella tendon rupture did not occur during ski jumping, but in other training activities.

From this we can say that serious knee injuries represent a problem in ski jumping, especially among female athletes, with an injury risk at least as high as that reported from other high-risk sports such as female handball and football. Furthermore, it is likely that the present numbers underestimate the true incidence of serious knee injuries, since only active athletes were interviewed.

With this knowledge we therefore would recommend that female ski jumpers routinely use preventive training programs similar to those used by handball and football in order to try to reduce the numbers of serious knee injuries.

Best regards

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