

Clinica Ortopedica e
Traumatologica
dell'Università di Pavia

Fondazione IRCCS
Policlinico
S. Matteo

Chairman: Prof. F. Benazzo



KL SKI

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KL SKI

WHAT IS IT?

*In KL-ski you can become
the fastest person on
earth not pushed by an
engine*



S. Origone
world fastest man 251,40 km/h

KL SKI

How extreme?

- High Altitudes
- Low temperatures
- Wind
- Funny weather
- Distance from closest hospital
- Difficult movements during the race



KL SKI

How extreme?

- Long and Deep race field
- Very High speeds
→ from 160 to 250 km/h



KL SKI
How extreme?
It is extreme also for people preparing and working on the race field...




ORIGONE BROS

World fastest men:
Simone 251,4 Km/h
Ivan 250,7 Km/h



Ivan: world cup winner 2007/2008
Simone: world cup winner 2004/5 2005/6 2006/7

KL SKI
Everything is prepared to reach the fastest speed...



- Skis are 2.38 m tall
- Now there is only one factory that produces them: *ATOMIC*
- Every athlete has at least 5 pairs (one for every race leg)
- Most athletes have one fastest pair that they keep and use for years

Everything is prepared to reach the fastest speed...
Most athletes prepare their materials themselves

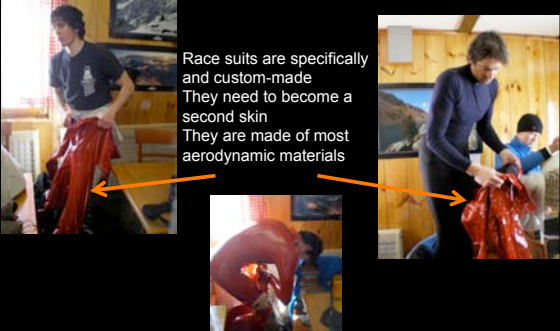


KL SKI
Everything is prepared to reach the fastest speed...



...some other times things become "just a bit" more technical

Everything is prepared to reach the fastest speed...
It takes about one hour to get dressed...




Race suits are specifically and custom-made
They need to become a second skin
They are made of most aerodynamic materials

Everything is prepared to reach the fastest speed...
 It takes about one hour to get dressed...

Custom (home) made spoilers

Sizes and heights are different from athlete to athlete but must be within ruled standards



Everything is prepared to reach the fastest speed...
 It takes about one hour to get dressed...

Everything must be perfectly isolated to obtain the best aerodynamics



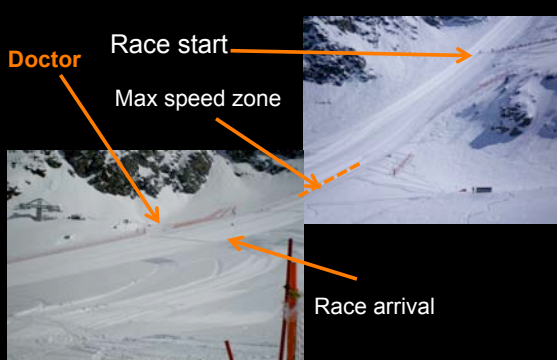
RACE FIELD

Doctor

Race start

Max speed zone

Race arrival



BASIC RULES:

- Races are scheduled on 2 days
 - At least 2 legs for the race to be validated
- At every leg race start is raised of about 20 m (to gain max 20km/m)
- Ranking is based on the speeds registered on last leg



PHASES OF THE COMPETITION:

Race start



PHASES OF THE COMPETITION:

Acceleration



PHASES OF THE COMPETITION:

Max speed



PHASES OF THE COMPETITION:

Deceleration



HIGH SPEED SKIING INJURIES

2 main categories:

- Trauma

- Overuse



TRAUMA

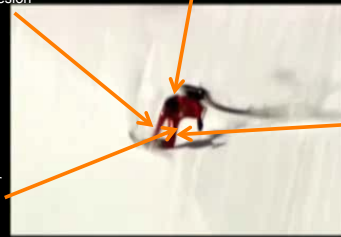
what kind of fracture can we expect?

Superior limb:

- Shoulder
- Humerus
- Forearm
- Elbow
- Wrist
- Hand : Steiner lesion

Loss of helmet → Concussion

Abdominal and/or Thoracic Trauma



Inferior limb:

- Pelvis
- Femur
- Tibia
- Knee joint: MCL /ACL /PCL

TRAUMA

what kind of fracture can we expect?



TRAUMA

what kind of fracture can we expect?



TRAUMA

Always keep an helicopter ready!!



OVERUSE

Lumbar spine

- Black disc
- Disc bulging or Herniation
- Spondilolysis or listesis

Cervical spine



Inferior limb:

- Hip
- Tibia
- Adductor Syndrome
- Hamstrings Syndrome
- Knee joint:
quad and patellar tendon
- foot

GUESS WHO'S THIS...



CONCLUSIONS

The problem of treating this kind of athletes is strictly related to the sport they perform:

- Surgical treatment of multiple severes trauma
- Any kind of overuse injury can be dangerous at 250 km/h and must be treated in order to prevent other major injuries
- Consider the environment
- Consider the athlete and his needs

LES ARCS 2006

Simone Origone 251,40 km/h

