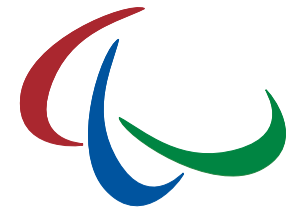


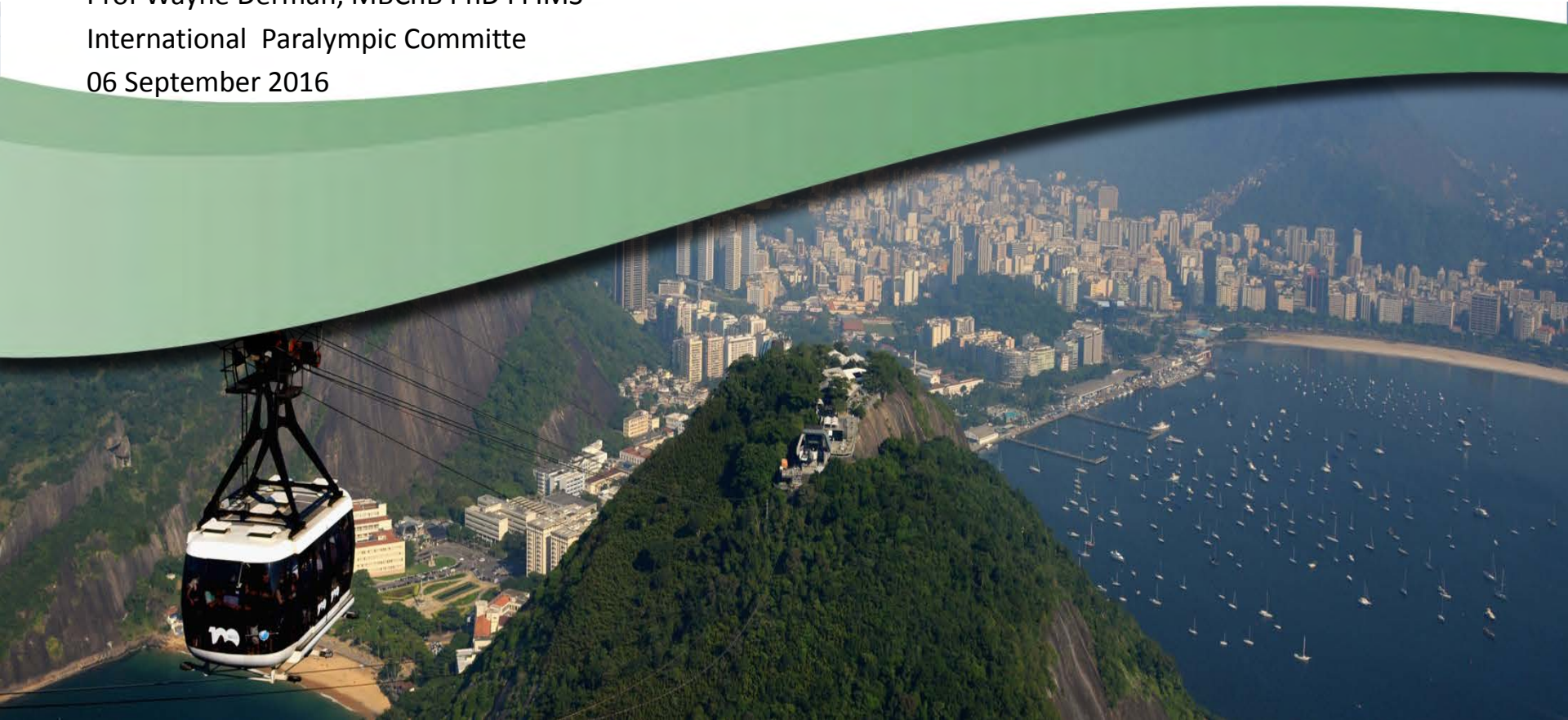
International
Paralympic Committee



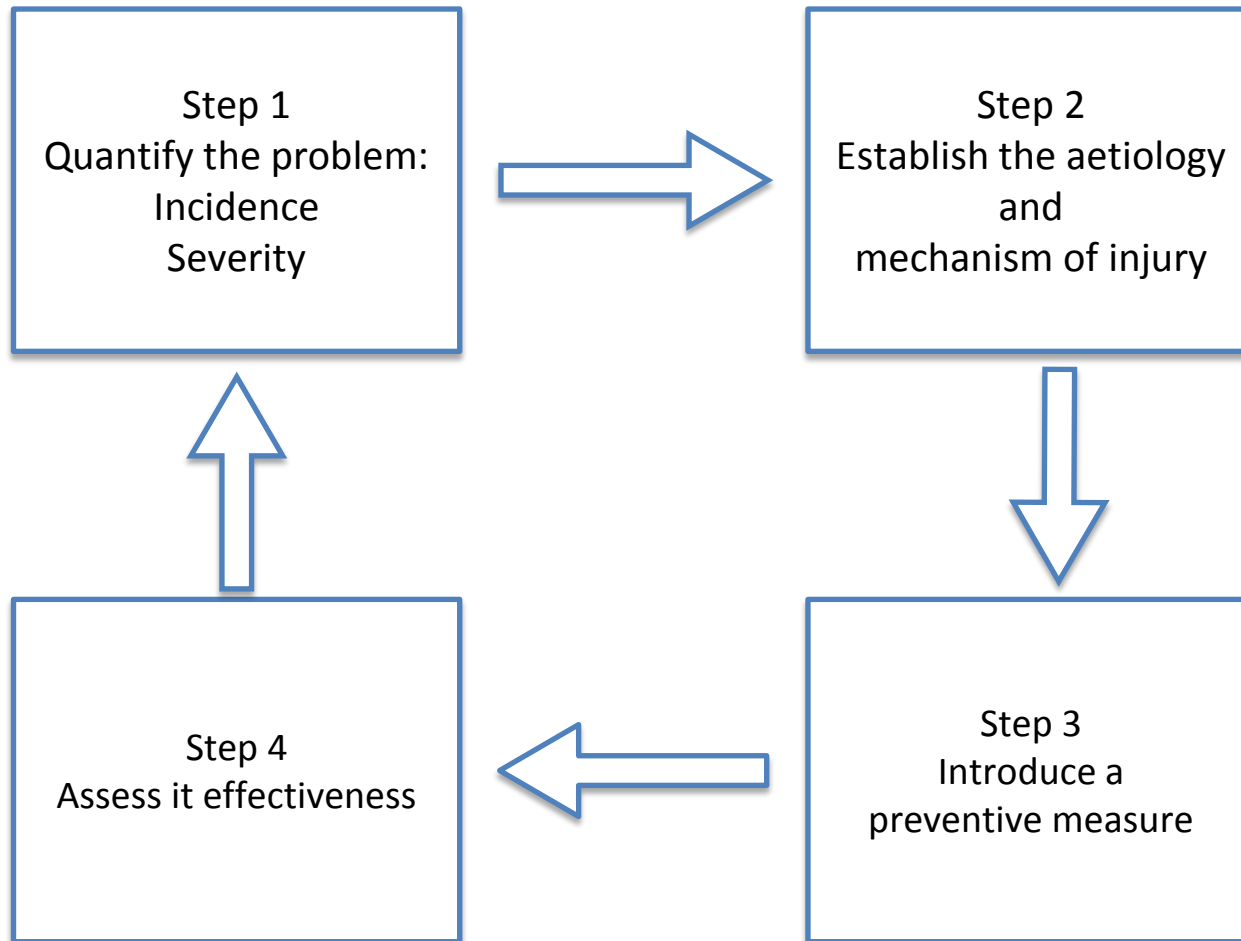
International
Paralympic
Committee

Injury and Illness Epidemiology in Paralympic Sport – Lessons Learnt

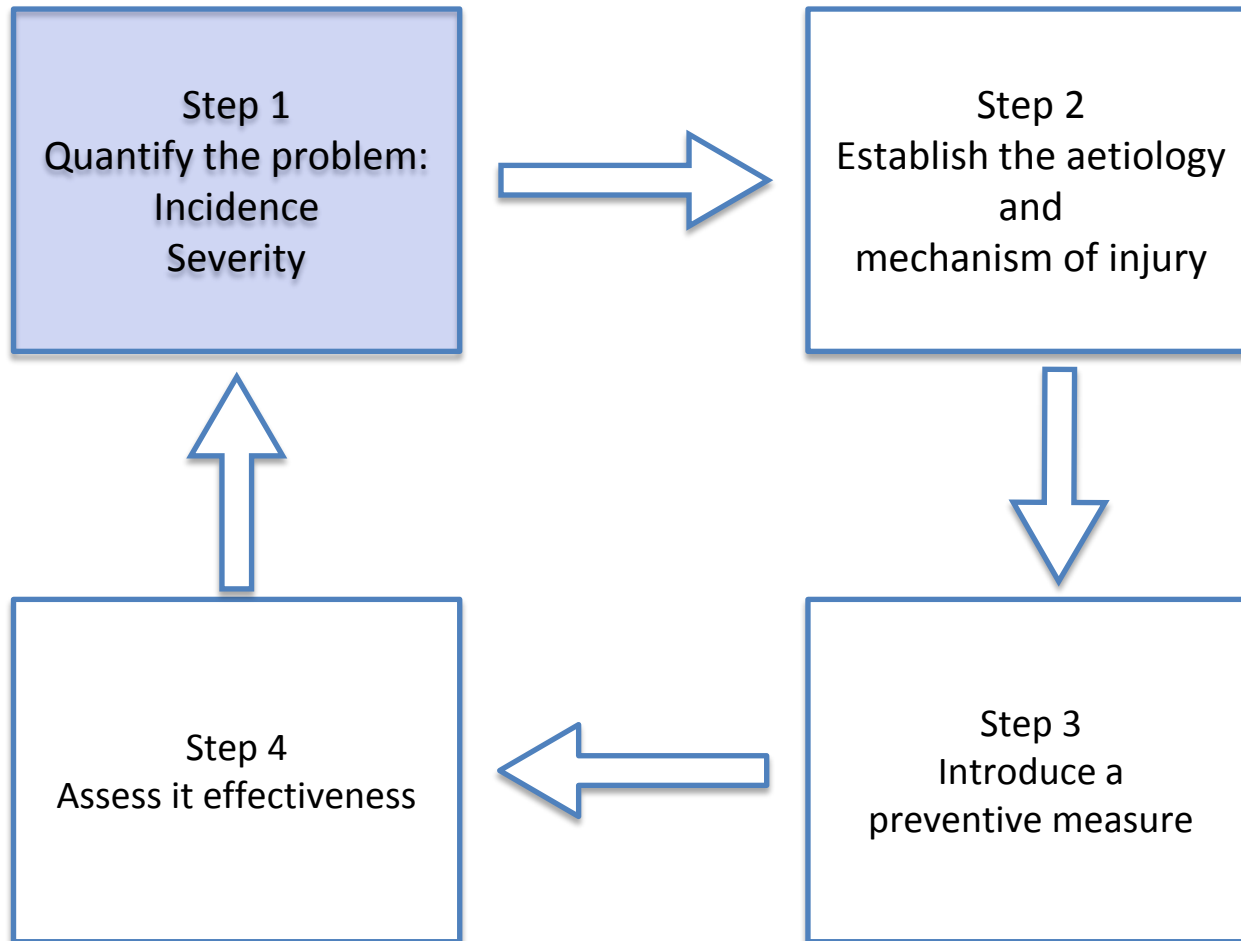
Prof Wayne Derman, MBChB PhD FFIMS
International Paralympic Committee
06 September 2016



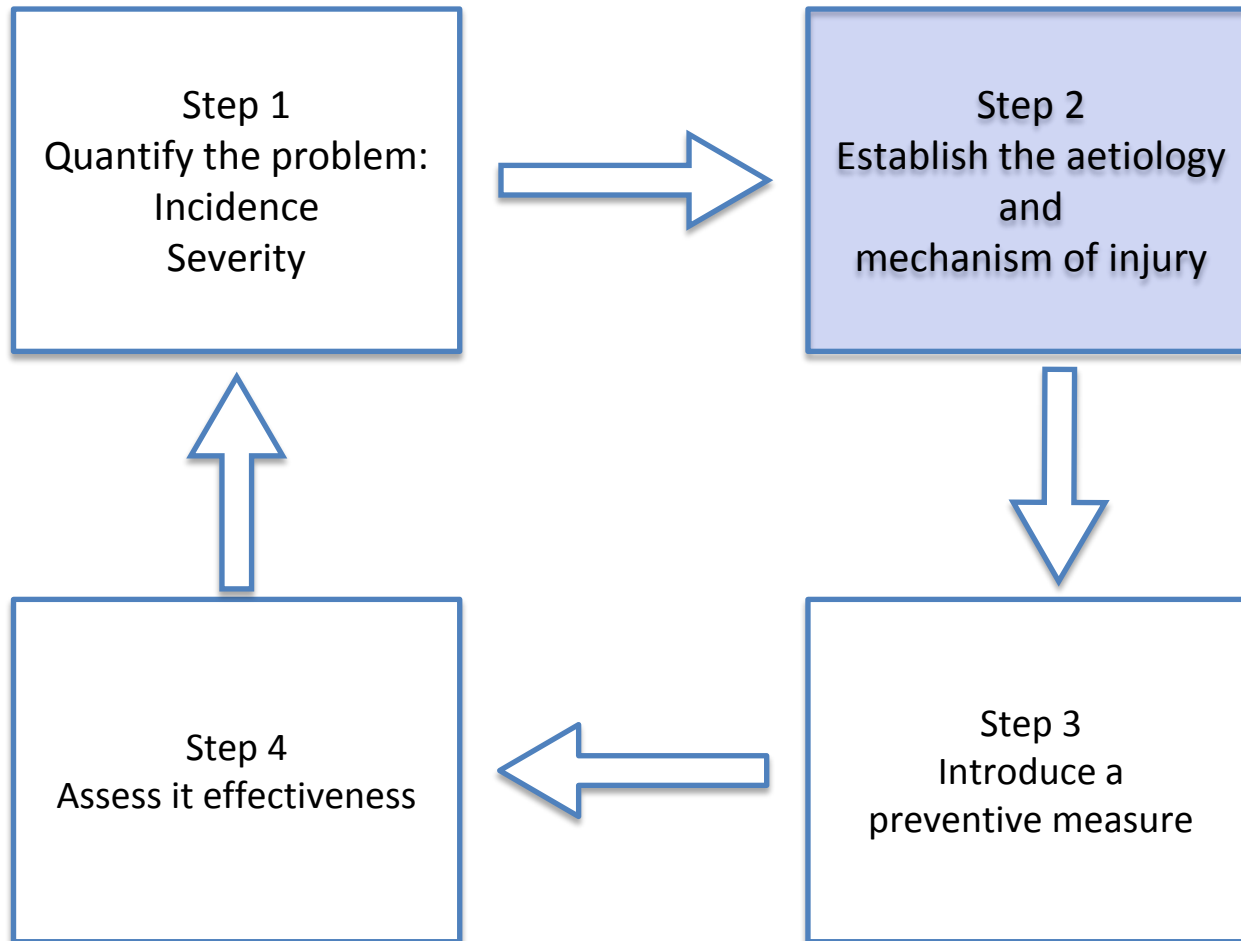
Developing injury prevention programs?



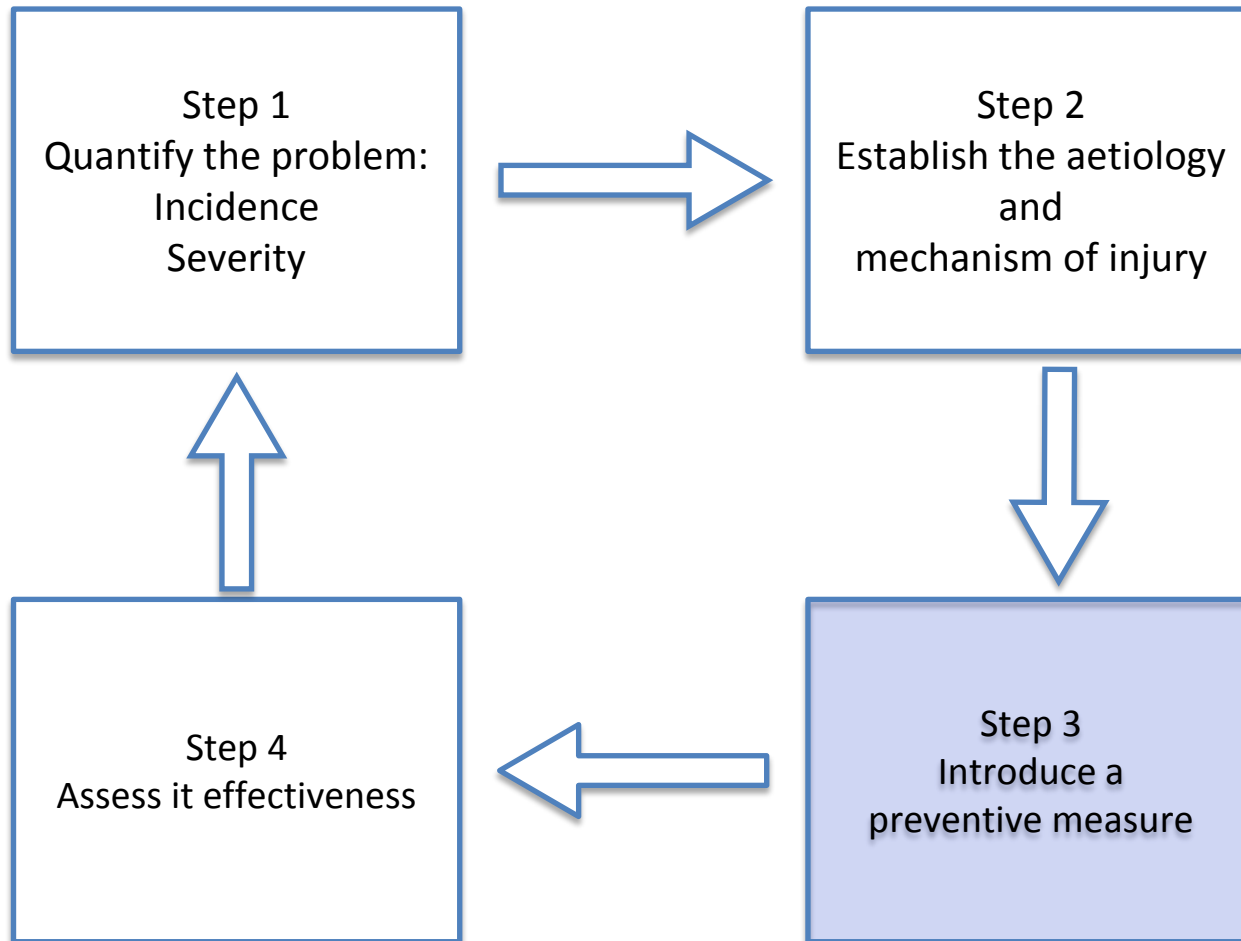
Developing injury prevention programs?



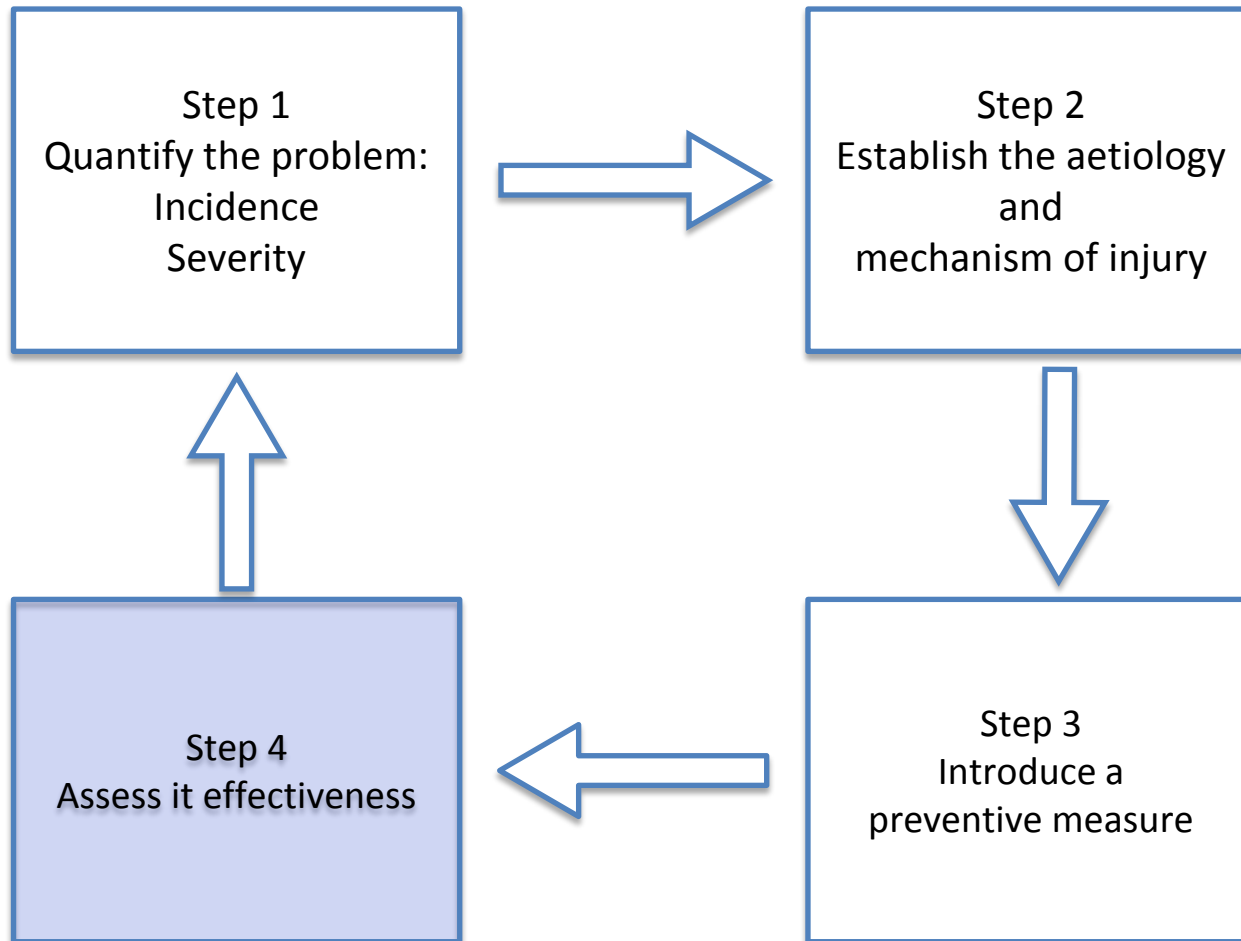
Developing injury prevention programs?



Developing injury prevention programs?



Developing injury prevention programs?





IPC INJURY AND ILLNESS PREVENTION STUDY

LONDON 2012 PARALYMPIC GAMES

International Paralympic Committee
Version 1.2.006

USER : Team Doctor (AFG)
TEAM : Afghanistan Paralympic Committee

Injury/Illness Calendar : AFG

[Home](#) [Contact Us](#) [About](#) [Session](#) [Log off](#)

Welcome back!

Thank you for your ongoing commitment to this project. If you experience any problems with data entry please [contact us](#).

Step 1 : Select one of the three options below.

- Record an INJURY for the team today (or on the date selected below)
- Record an ILLNESS for the team today (or on the date selected below)
- No Injuries or Illnesses are recorded for the team today (or on the date selected below)

Step 2 : Click on the date in the calendar below on which you wish to report an injury or illness.

Month/Year	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
August 2012	20	21	22	23	24	25	26
	27	28	29	30	31		
September 2012						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23

Key	
Red	Data INCOMPLETE (past days)
Yellow	Data INCOMPLETE (today)
Green	Data COMPLETE
Grey	Future days

Illness and injury in athletes during the competition period at the London 2012 Paralympic Games: development and implementation of a web-based surveillance system (WEB-IISS) for team medical staff

Wayne Derman,^{1,2} Martin Schwellnus,^{1,2} Esme Jordaan,³ Cheri A Blauwet,^{4,5} Carolyn Emery,^{6,7} Pia Pit-Grosheide,⁵ Norma-Angelica Patino Marques,^{5,8} Oriol Martinez-Ferrer,^{5,9} Jaap Stomphorst,^{5,10} Peter Van de Vliet,^{5,11} Nick Webborn,¹² Stuart E Willick^{5,13}

Factors associated with illness in athletes participating in the London 2012 Paralympic Games: a prospective cohort study involving 49 910 athlete-days

Martin Schwellnus,^{1,2} Wayne Derman,^{1,2} Esme Jordaan,³ Cheri A Blauwet,^{4,5} Carolyn Emery,^{6,7} Pia Pit-Grosheide,⁵ Norma-Angelica Patino Marques,^{8,5} Oriol Martinez-Ferrer,^{5,9} Jaap Stomphorst,^{10,5} Peter Van de Vliet,^{5,11} Nick Webborn,¹² Stuart E Willick,^{5,13}

The epidemiology of injuries at the London 2012 Paralympic Games

Stuart E Willick,^{1,2} Nick Webborn,³ Carolyn Emery,⁴ Cheri A Blauwet,^{1,5} Pia Pit-Grosheide,¹ Jaap Stomphorst,¹ Peter Van de Vliet,⁶ Norma Angelica Patino Marques,^{1,7} J Oriol Martinez-Ferrer,^{1,8} Esmè Jordaan,⁹ Wayne Derman,^{1,10} Martin Schwellnus¹⁰

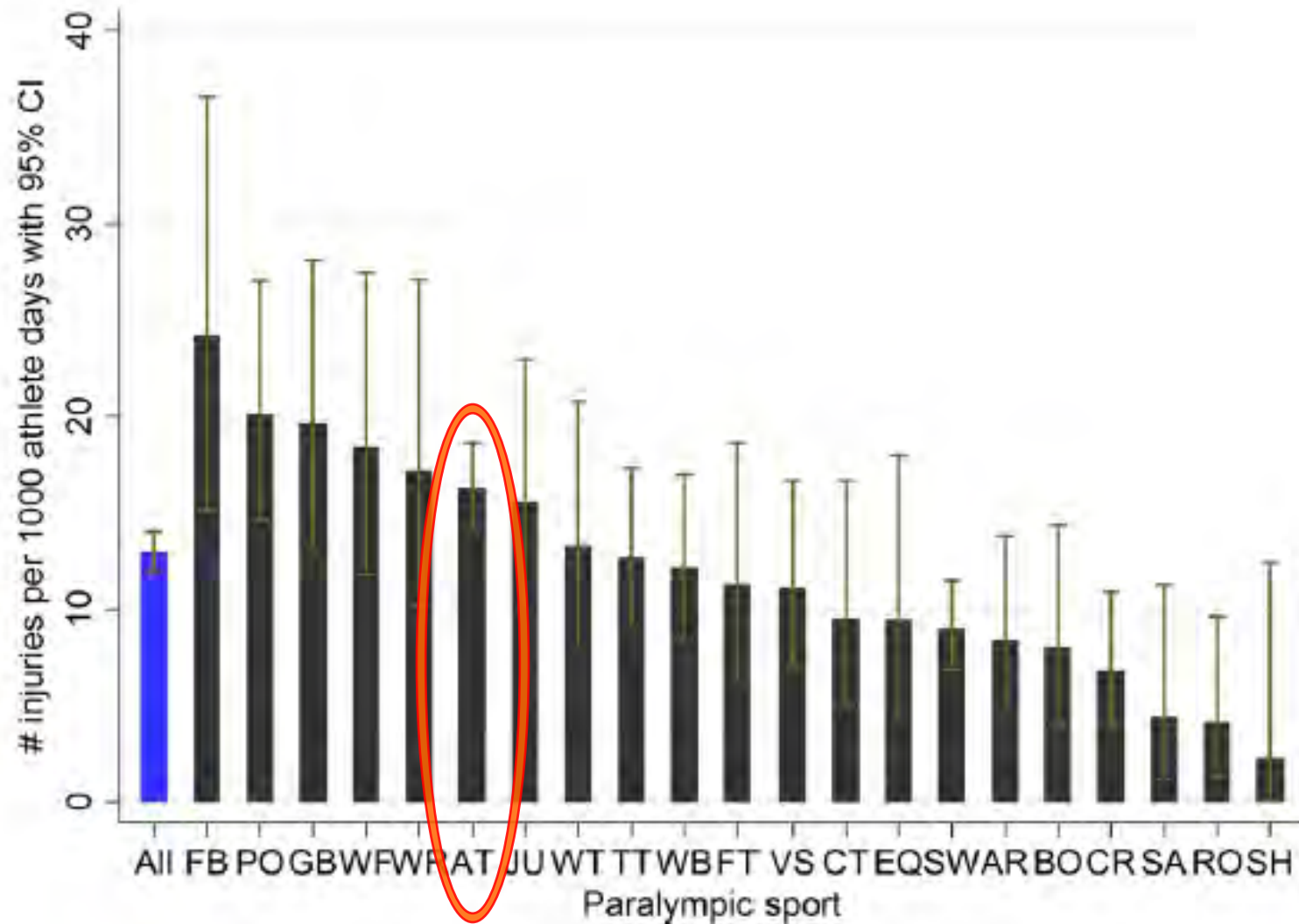


Highlights



- Web-based injury surveillance (IPC-IIS) ↑'s compliance
- Male and female athletes have similar injury rates
- In female athletes, pre-competition injury rates are higher than competition injury rates
- Injury rates are the lowest in the younger athletes
- Half of all injuries seen at the summer Paralympics are new onset acute injuries
- Highest rates of injury are shoulder, wrist/hand and elbow injuries
- Highest rates of injury in football 5-a-side, powerlifting, goalball, wheelchair fencing, wheelchair rugby, & athletics

Injury rate by sport – London 2012



Results – Overall



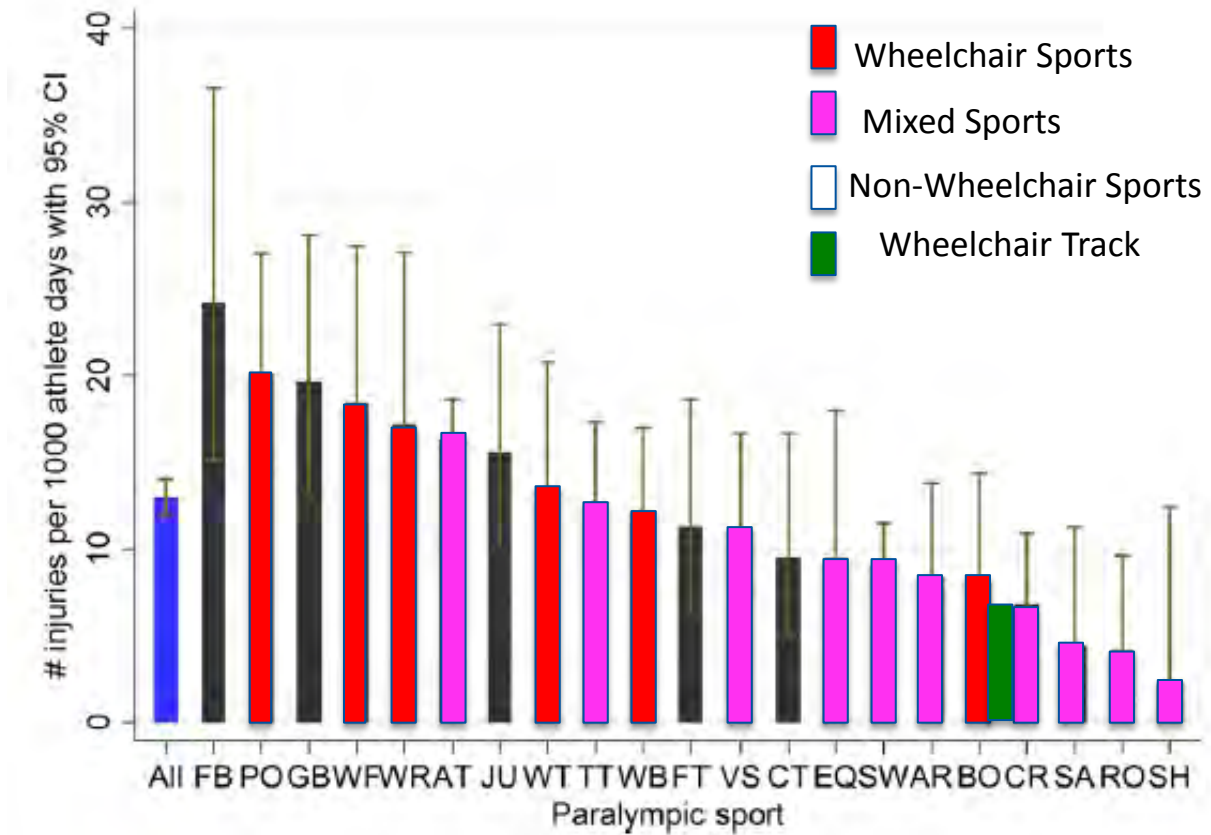
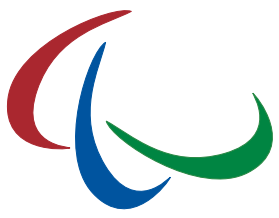
□ A total of 216 injuries were reported in 977 athletes

- IP = 18.4 injuries per 100 athletes
 - Track: IP = 17.1
 - Field: IP = 19.8

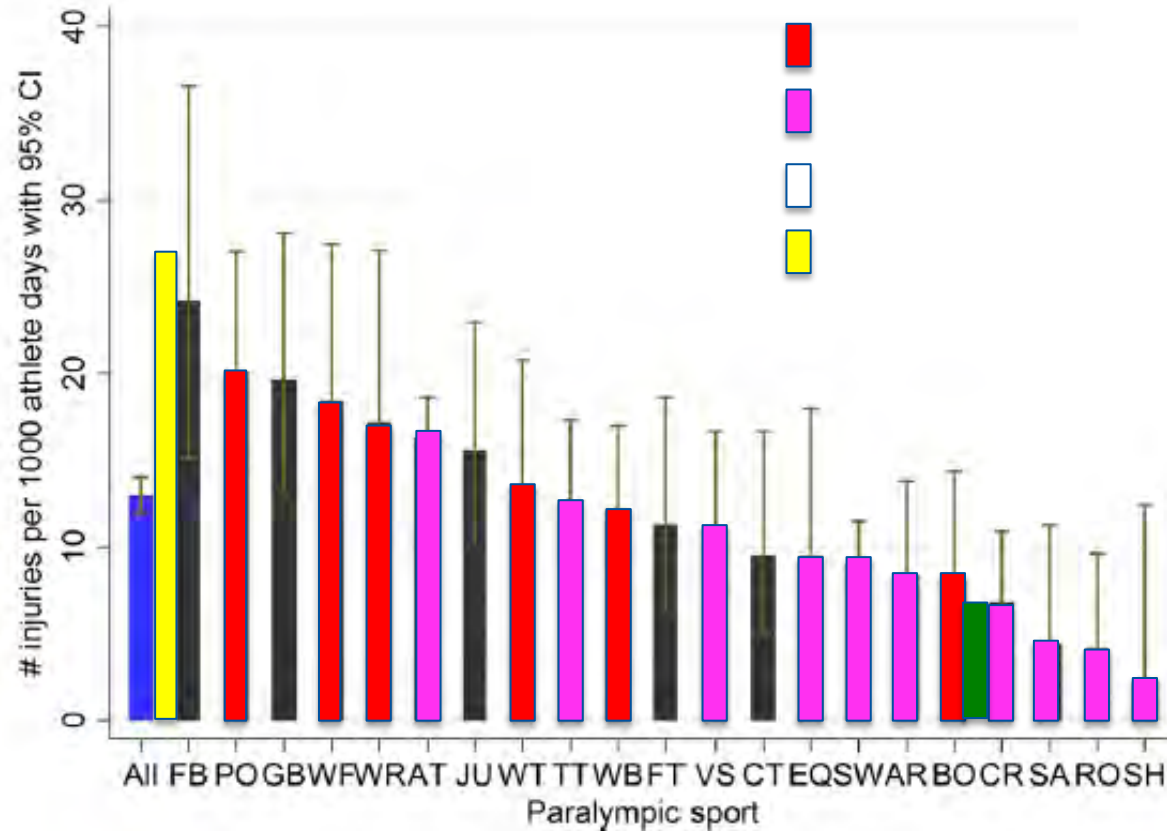
- IR = 22.1 injuries per 1000 athlete-days (95% CI 19.5 – 24.7)
 - Track: IR = 19.1 (95% CI 15.7 – 22.6)
 - Field: IR = 25.2 (95% CI 21.3 – 29.1)



Injuries/1000 athlete days - Sport v Athletics Track Wheelchair



Injuries/1000 athlete days - Sport v Athletics Field Wheelchair





New findings from present studies: Athletics – track and field

The risk of injuries in Paralympic Athletics (track and field)

**differs by impairment and event discipline:
A prospective cohort study at the London 2012 Paralympic Games**

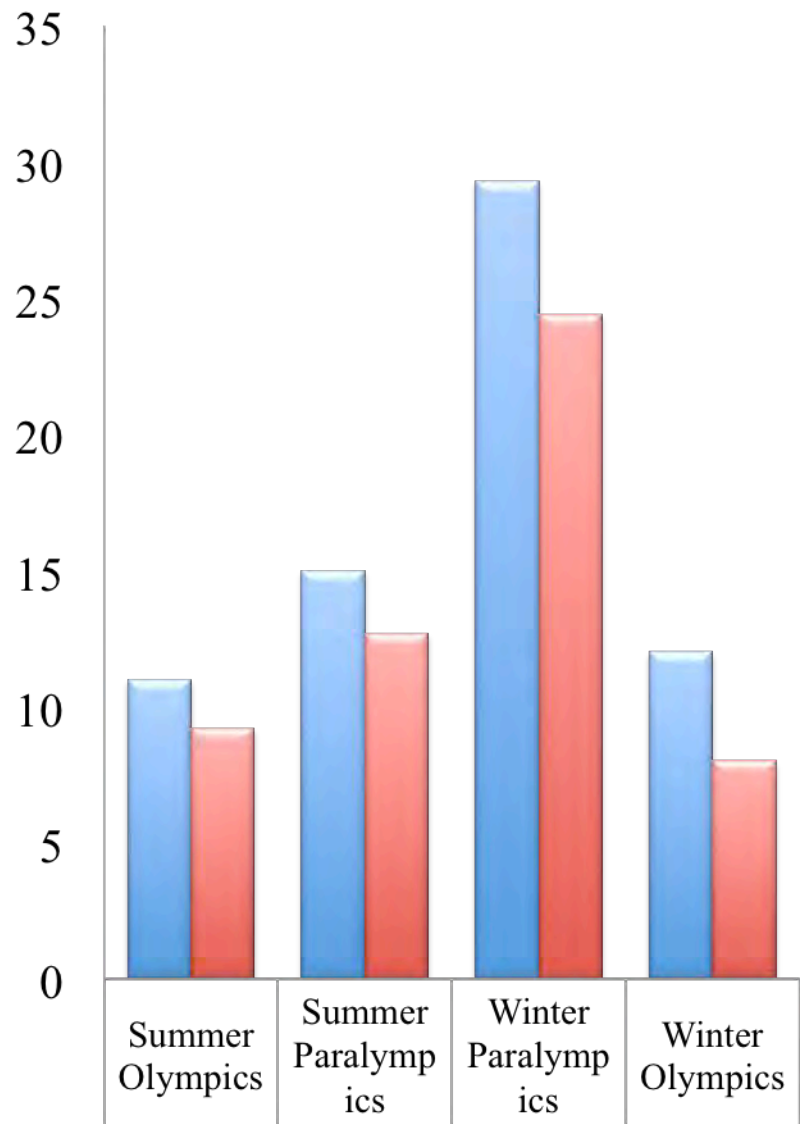


- Wheelchair/seated athletes competing in seated throws (field) experienced a higher incidence of injury than those competing in wheelchair racing (track).
- Ambulant athletes with cerebral palsy experienced a lower incidence of injury in track disciplines when compared to other ambulant athletes.
- For both ambulant and wheelchair/seated athletes, the majority of injuries occurred in competition and do not result in time-loss from competition or training.

Blauwet et al. 2015,

- **impairment and discipline specific**
- **Injury prevention programs should particularly be focused on athletes competing in seated throws and ambulant jumps, given that these disciplines experience a higher incidence of injury.**





■ Injury proportion (%)

■ Injury rate (/1000 athlete days)

Injury proportion (%)	11	15	29,3	12
Injury rate (/1000 athlete days)	9,2	12,7	24,4	8



Results

	London 2012 Paralympics	London 2012 Summer Olympics Athletes	Beijing 2008 Summer Olympics Athletes
Overall Incidence	19/100 athletes	12,9/100 athletes	9,6/100 athletes
Upper limb Incidence	7,2/100 athletes	NR	2/100 athletes
Lower limb Incidence	4,7/100 athletes	NR	5,5/100 athletes

Present study
2014

Engelbrechtsen *et al*
2013

Junge *et al*
2008

Results

	London 2012 Paralympics	London 2012 Summer Olympics Athletes	Beijing 2008 Summer Olympics Athletes
Overall Incidence	19/100 athletes	12,9/100 athletes	9,6/100 athletes
Upper limb Incidence	7,2/100 athletes 1,5 : 1	NR	2/100 athletes 0,3 : 1
Lower limb Incidence	4,7/100 athletes	NR	3,3/100 athletes

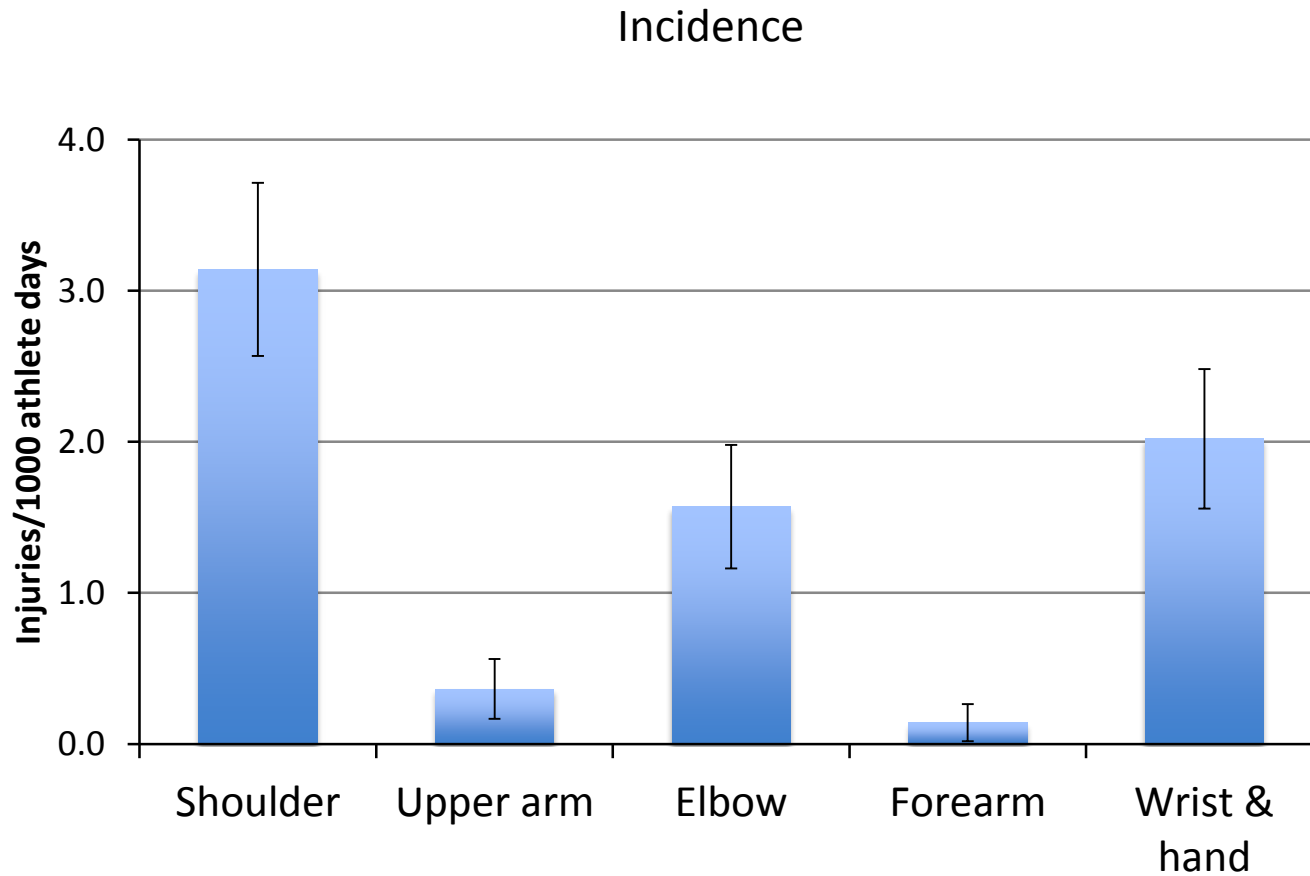
Present study
2014

Engelbrechtsen *et al*
2013

Junge *et al*
2008

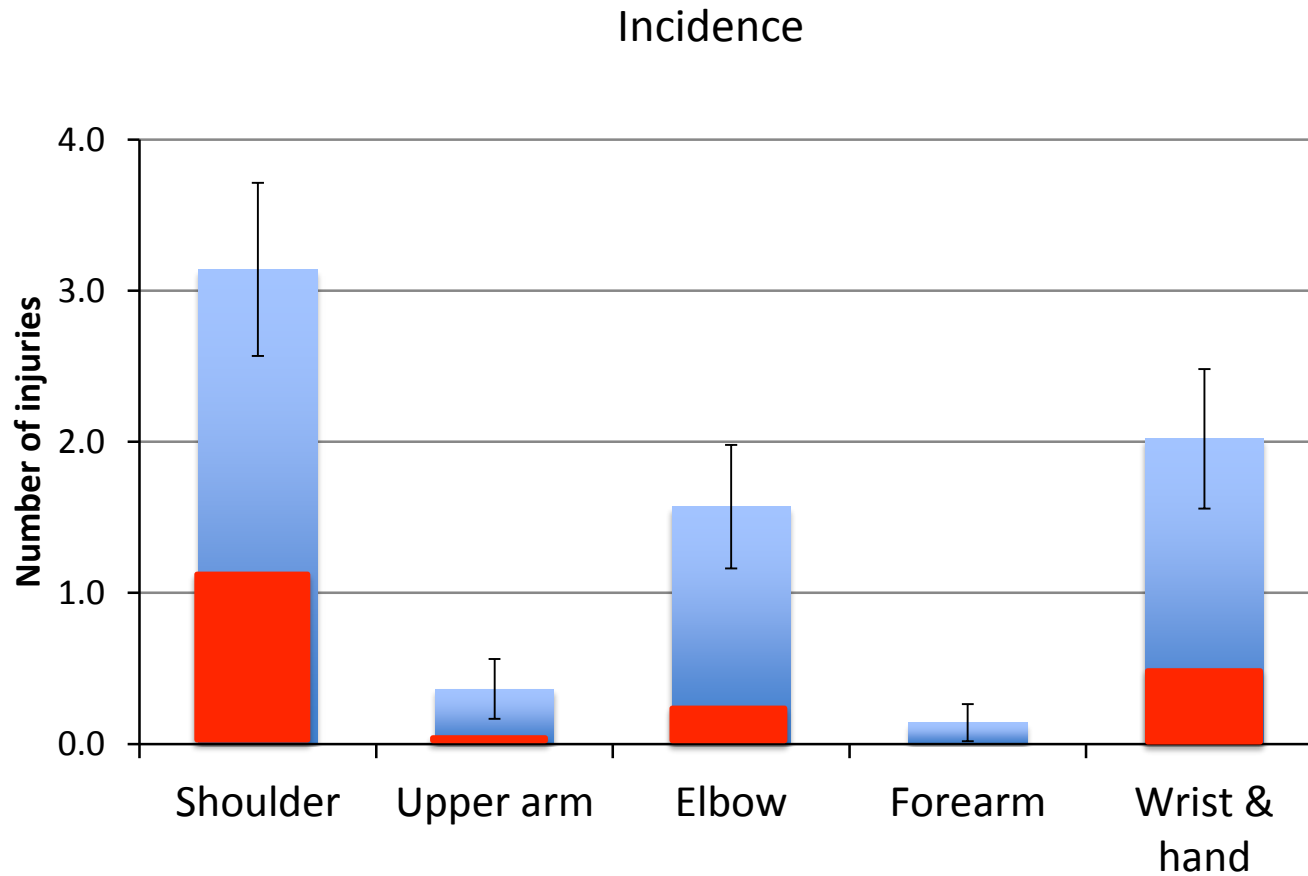
Results

Most commonly injured region



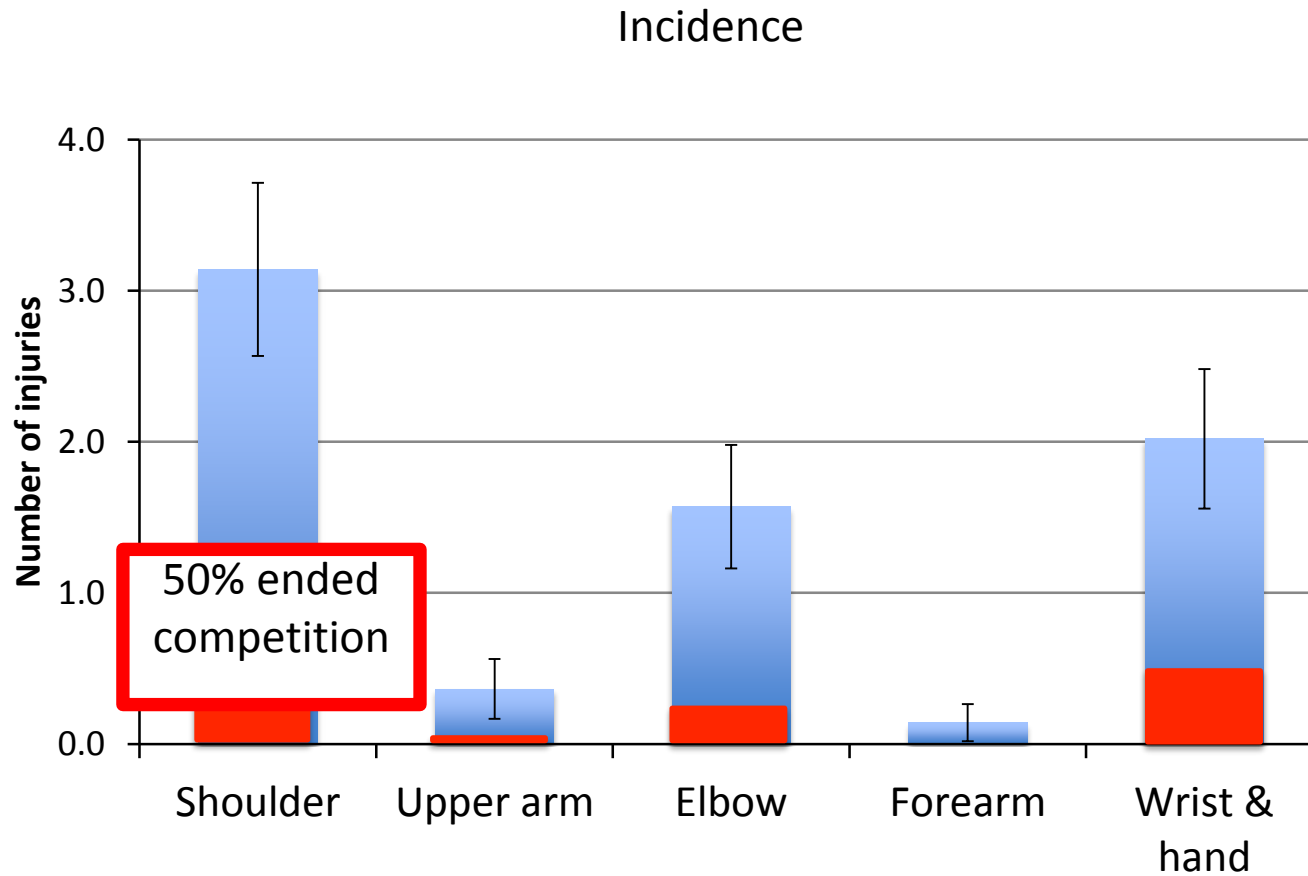
Results

Severity of injuries



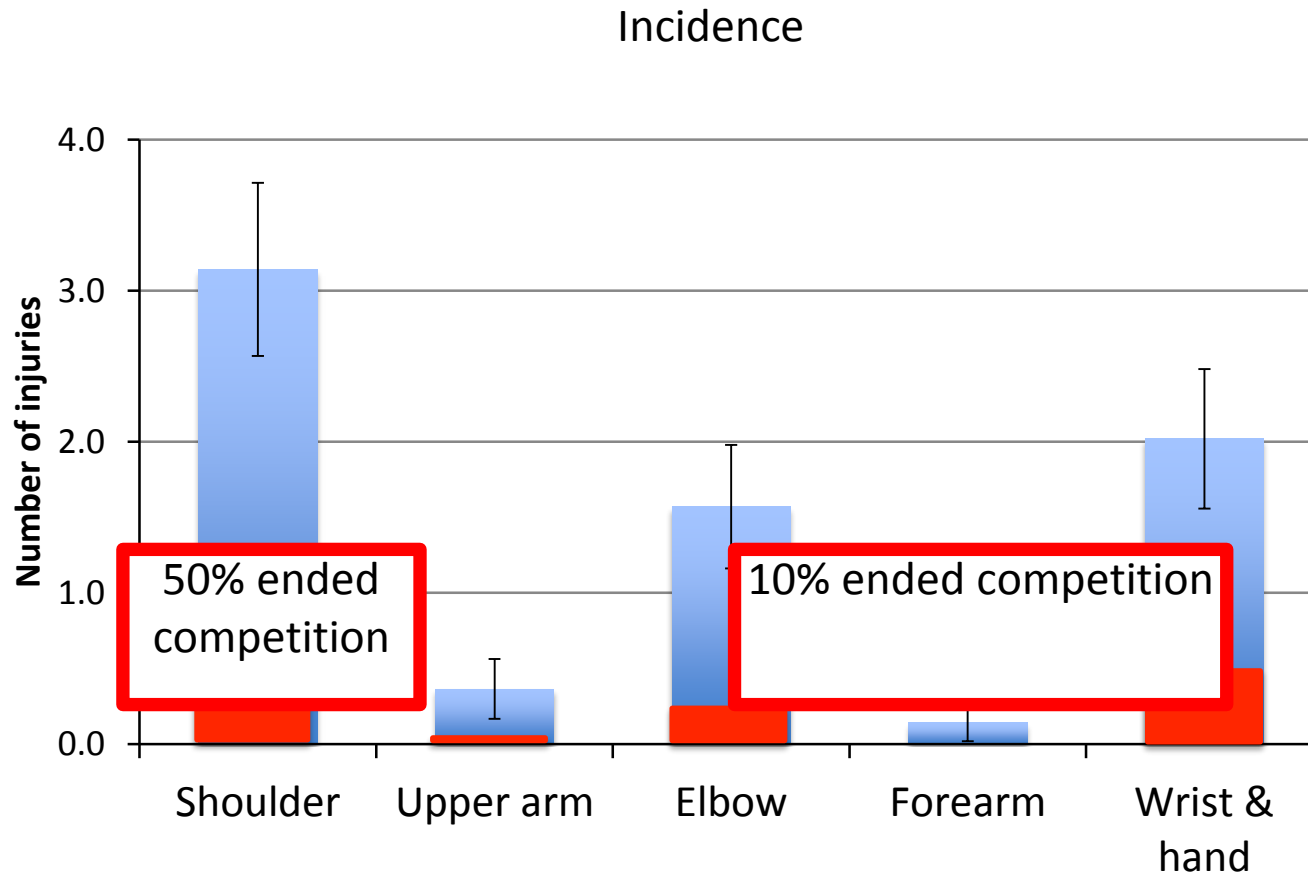
Results

Severity of injuries



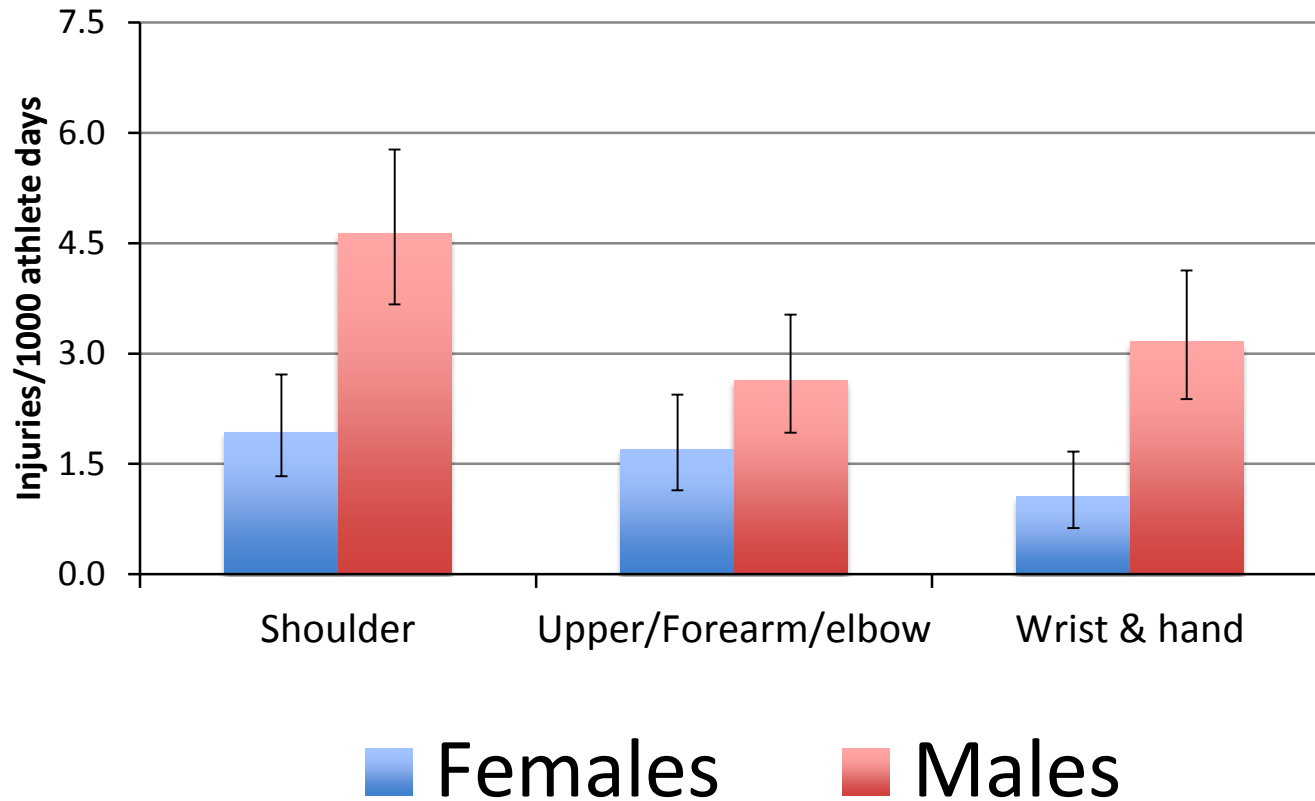
Results

Severity of injuries



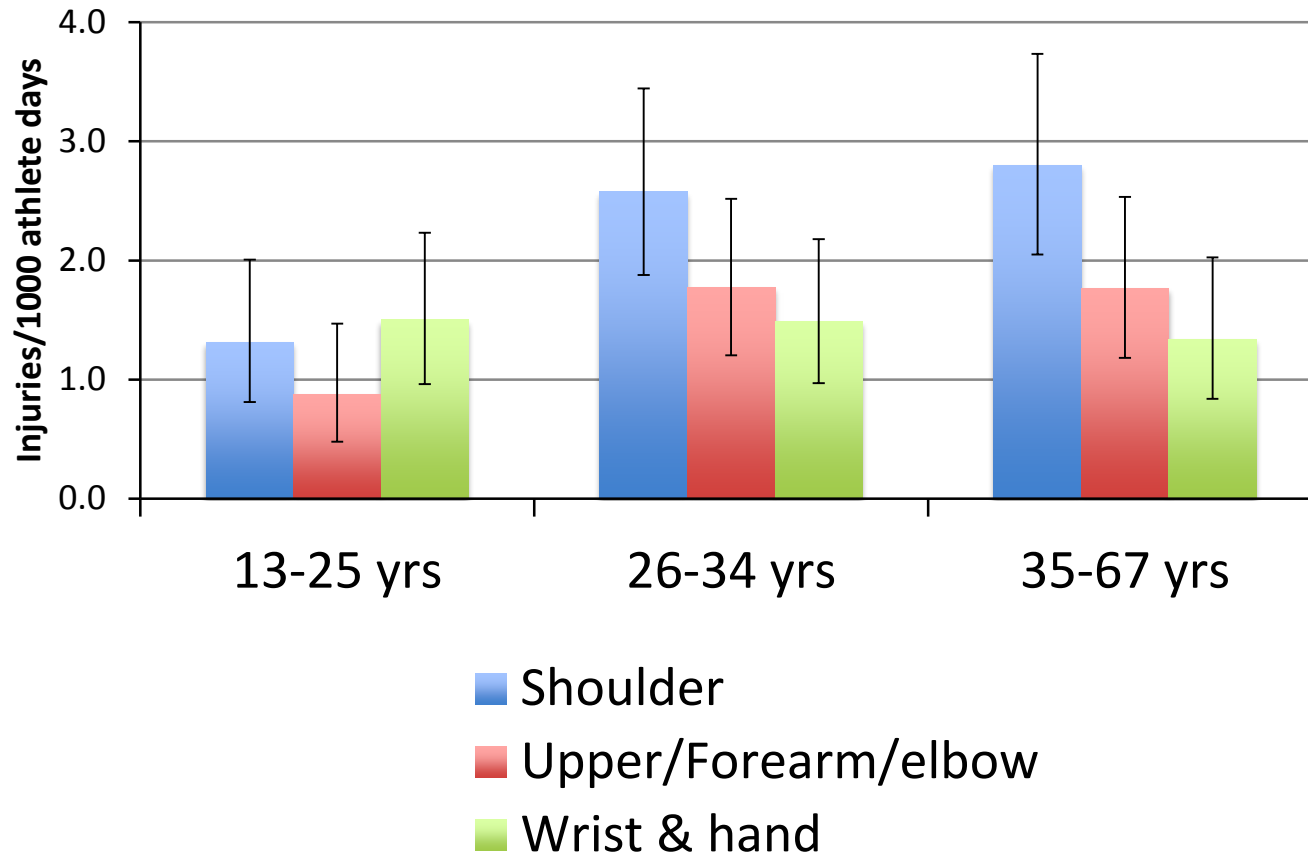
Risk Factors

Gender



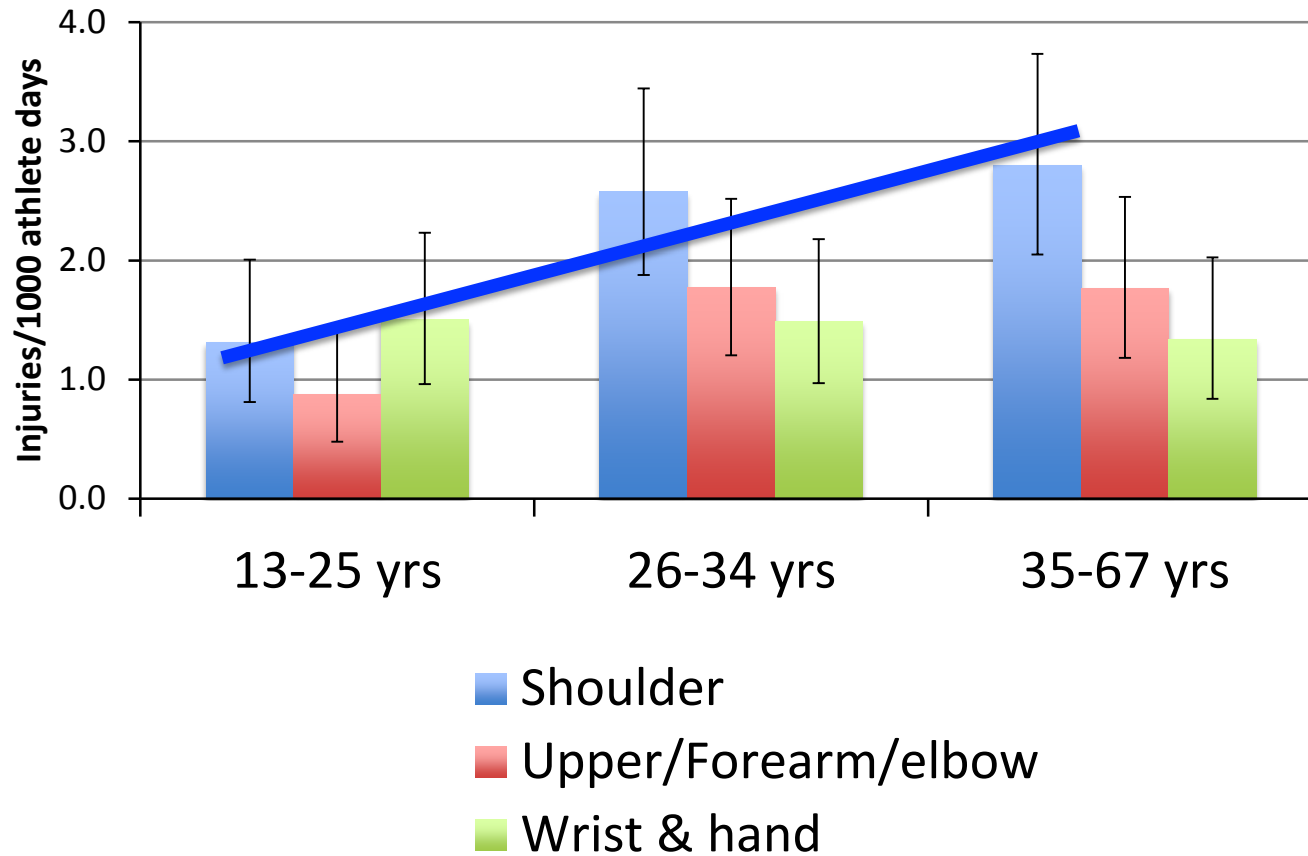
Risk Factors

Age

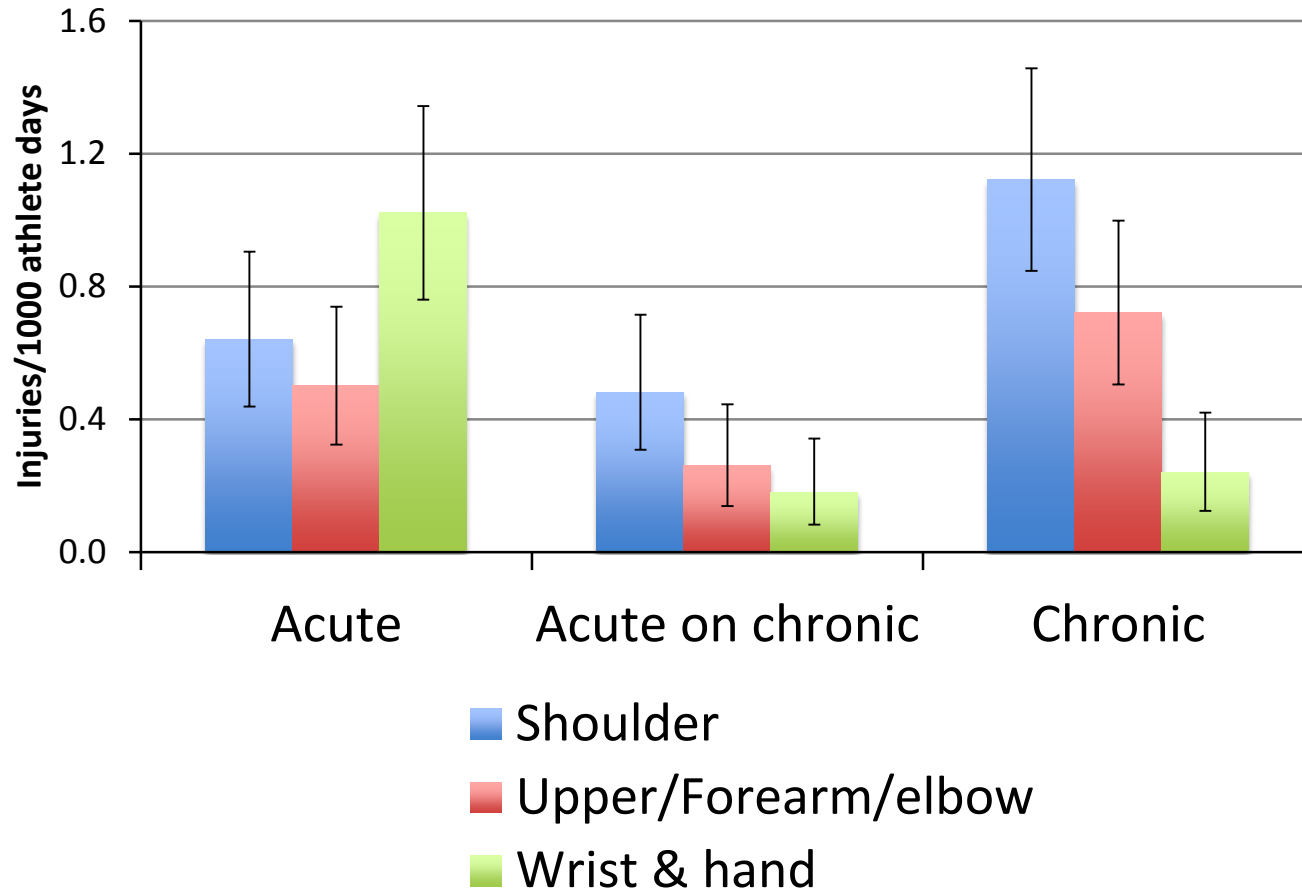


Risk Factors

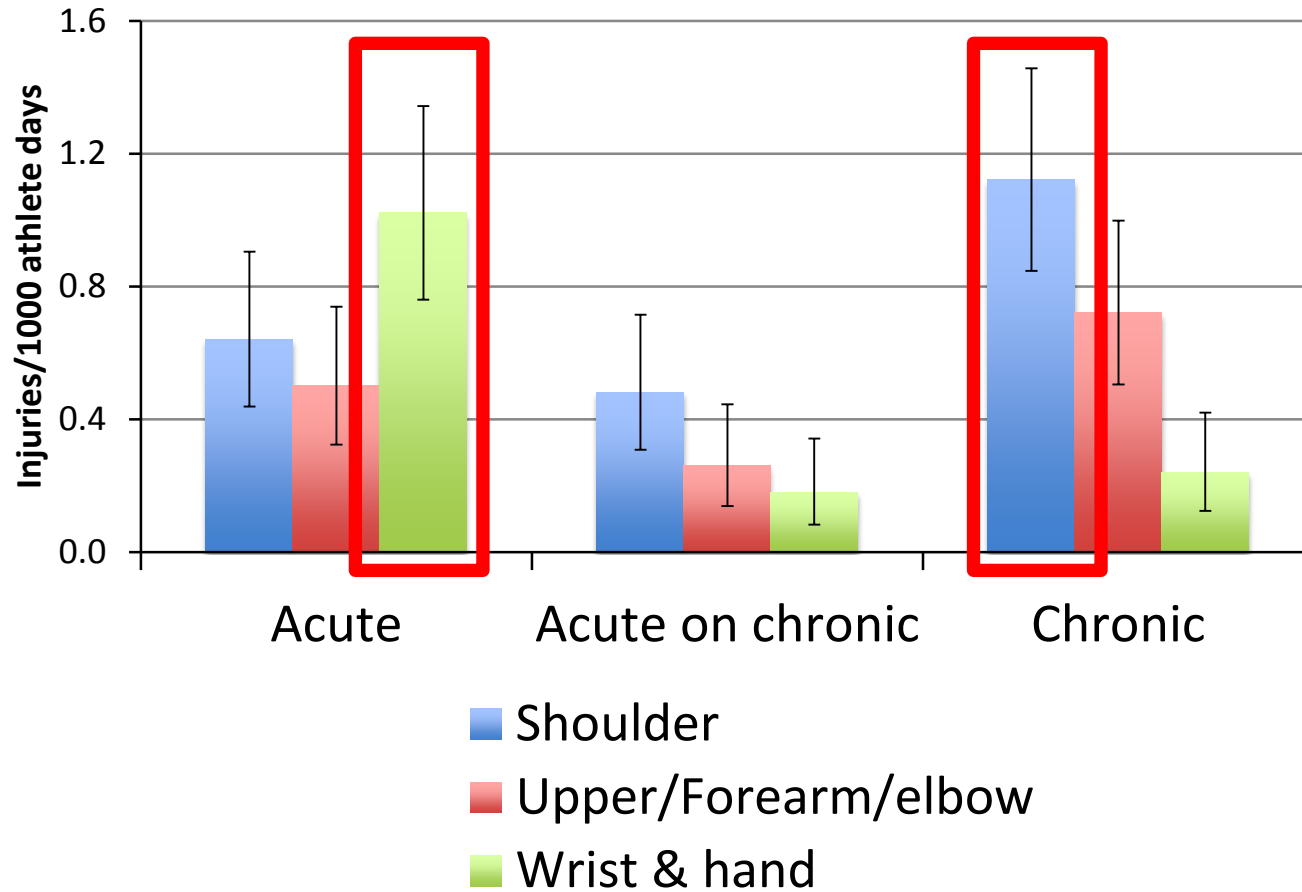
Age



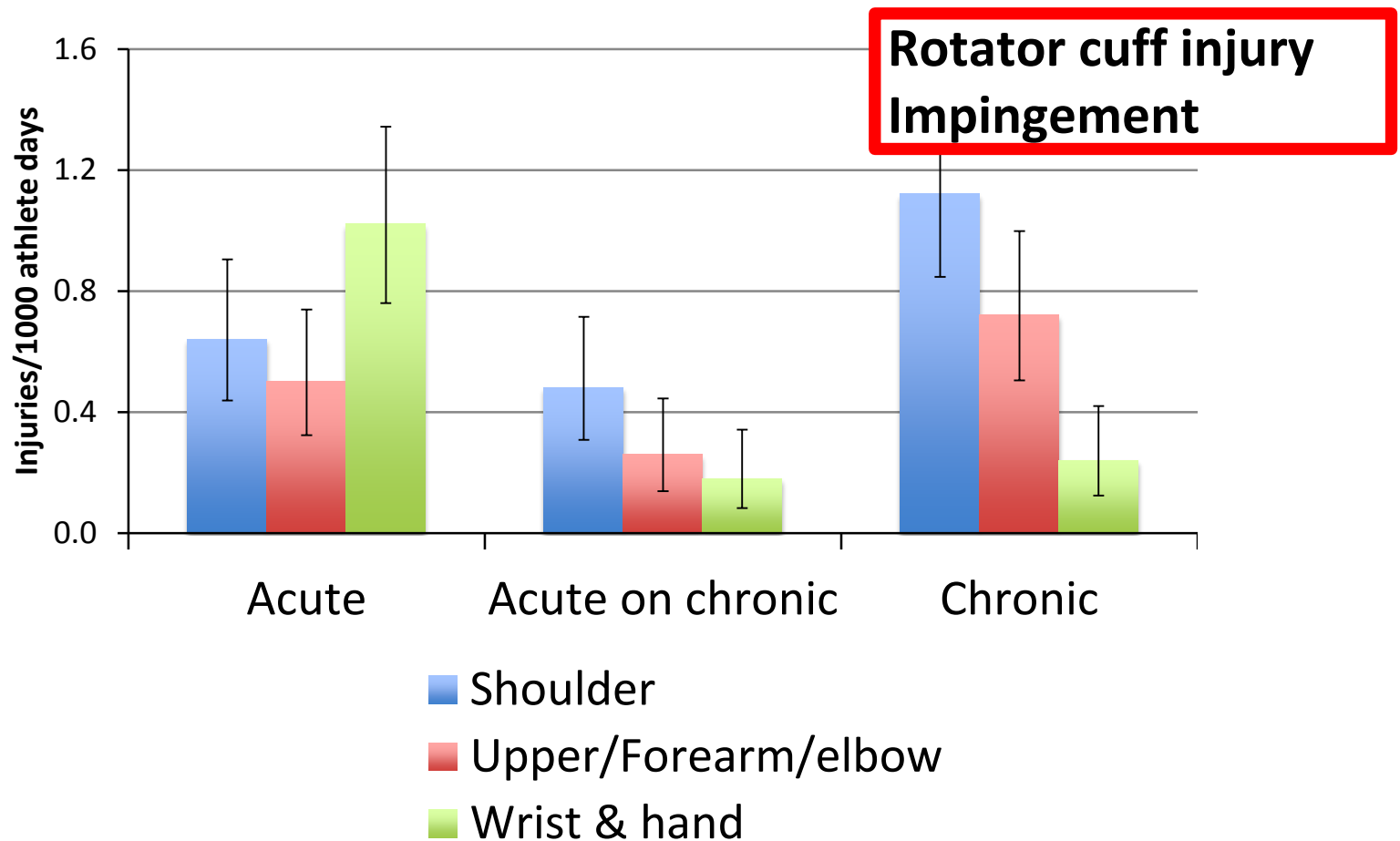
Risk Factors Onset



Risk Factors Onset

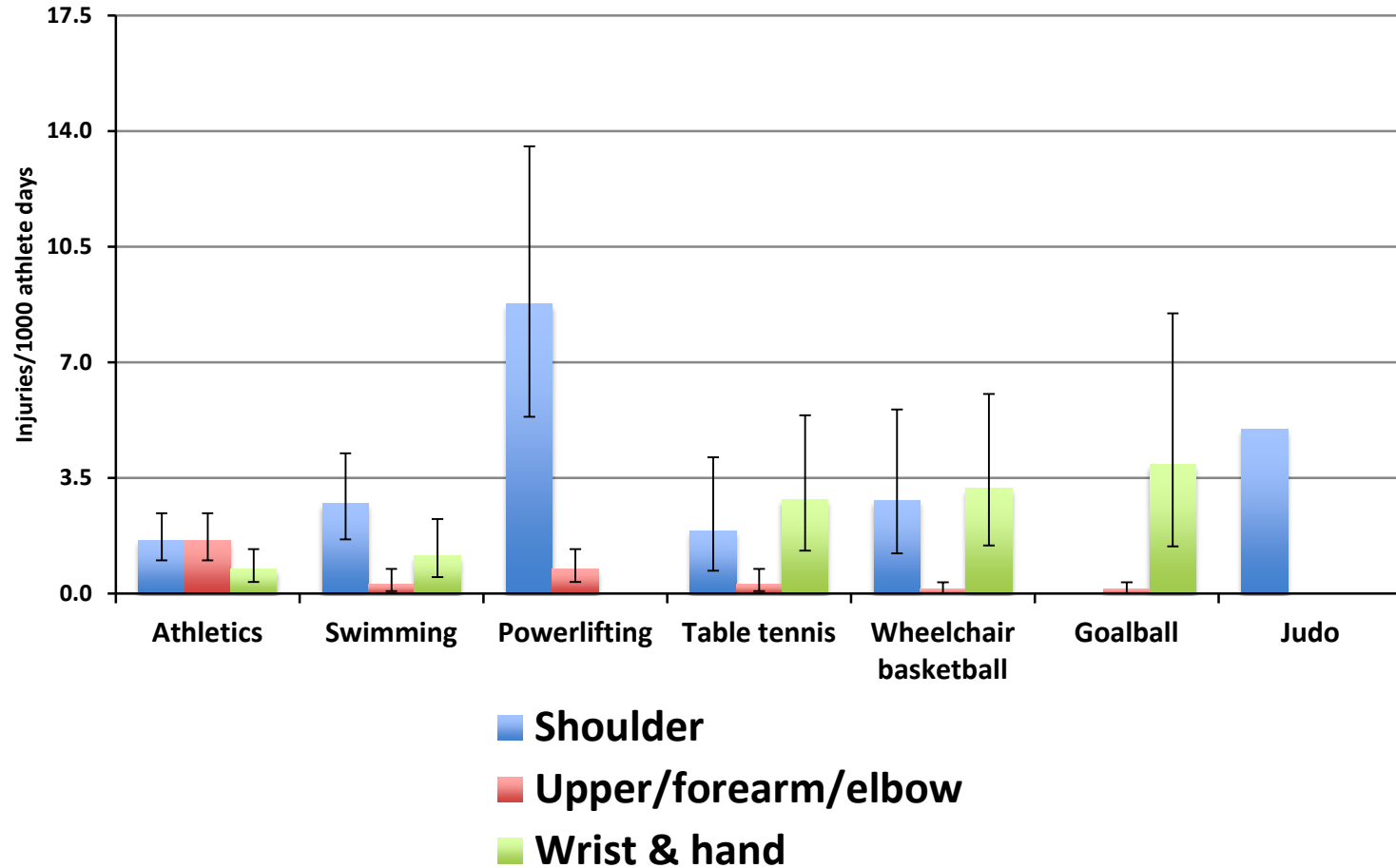


Risk Factors Onset



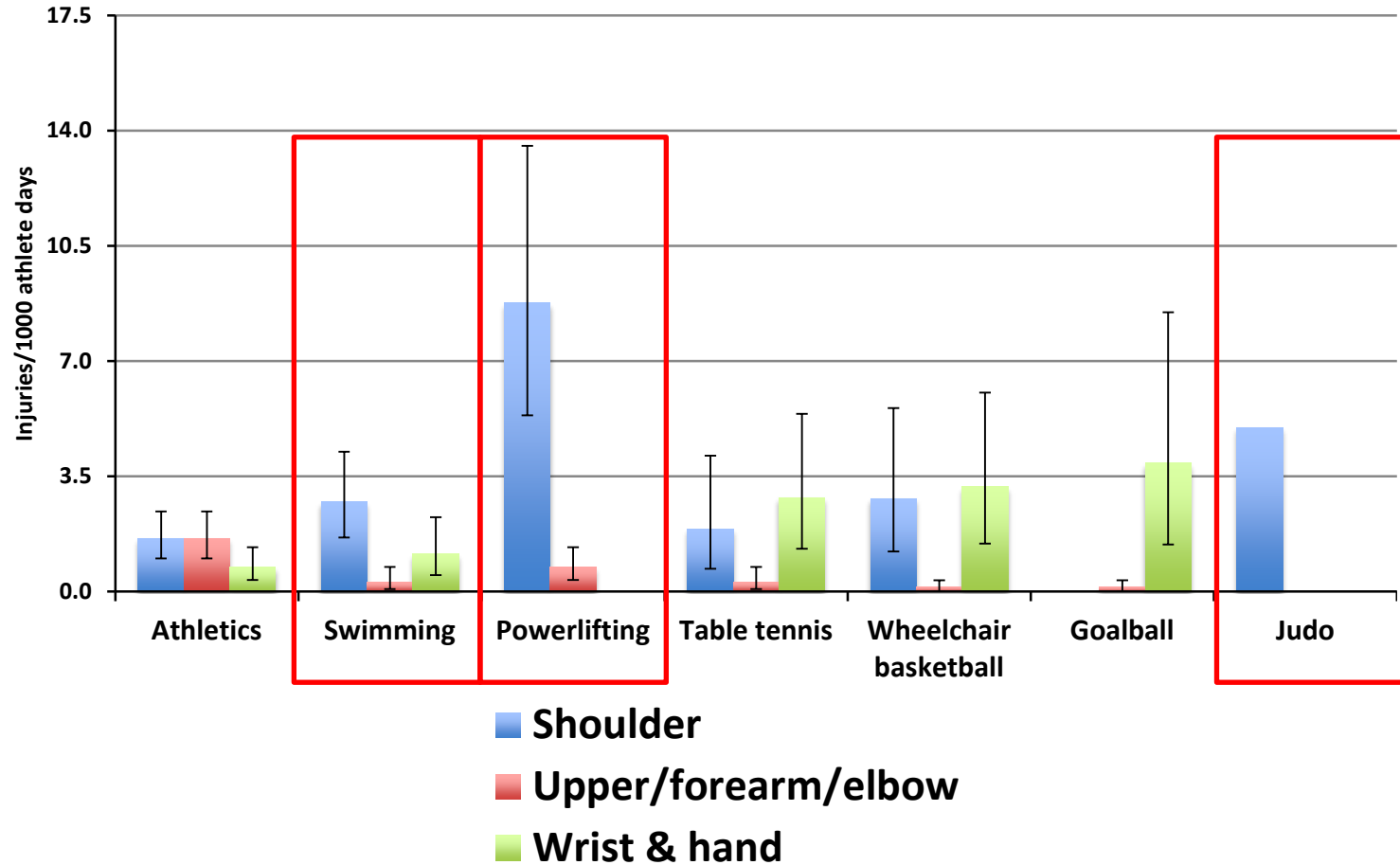
Risk Factors

Type of Sport



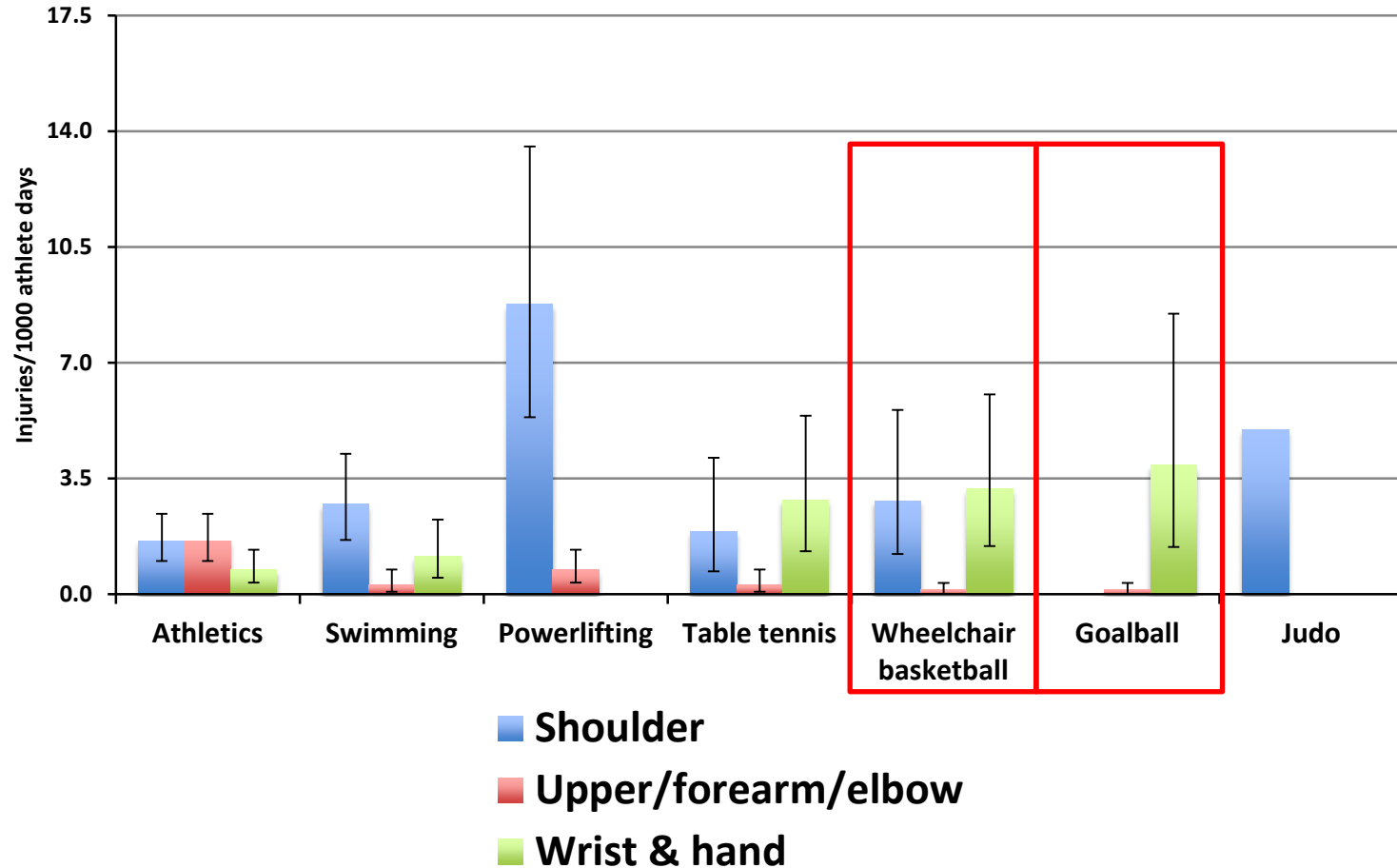
Risk Factors

Type of Sport



Risk Factors

Type of Sport



Conclusion

Upper limb injuries are common in athletes with impairment

1. Risk of upper limb injury 7,2% during the Games
2. Shoulder injuries most common
3. Risk factors
 - >35 years
 - Male
 - Swimming, powerlifting, judo



Paralympic.org

Obrigado!