Incidence of sports-related injuries and illnesses in Paralympic athletes – a prospective 52 week study

Kristina Fagher, PT, MSc, PhD-student

Disclosure

- Co-authors:
  - Professor Jan Lexell, Professor Toomas Timpka, Dr Jenny Jacobsson, Dr Örjan Dahlström
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Introduction

- Successful injury/illness surveillance during the Paralympic games shows that sports-related injuries and illnesses are a concern
- Few prospective studies over time
- To search for complex patterns, data collection over time is needed
- Risk factors based on exposure during competition and training

The Sports-related Injury and Illness in Paralympic Sport Study (SRIIPSS)

Literature search and critical review
Fagher & Lexell 2014

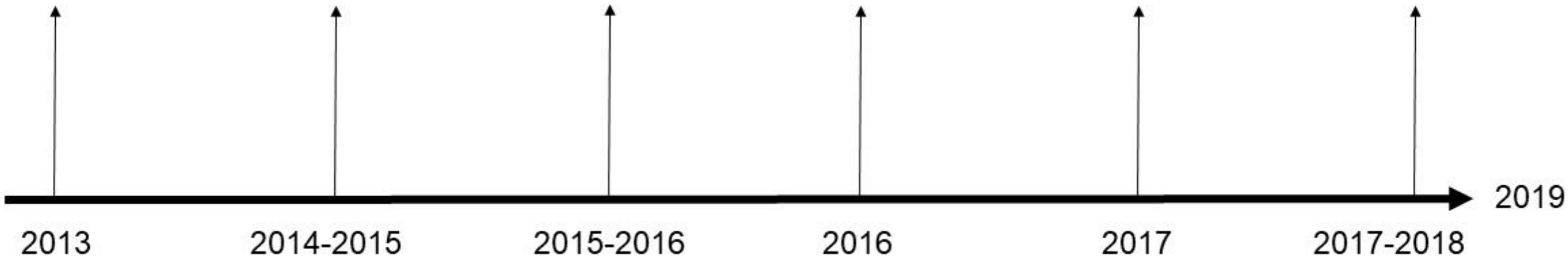
Athletes' perceptions of experiences
Fagher et al. 2016

Development & structure of study protocol
Fagher et al. 2016

Development & evaluation of eHealth application
Fagher et al. 2017

Prevalence of injuries & illnesses. Athlete demographics & behavior
Fagher et al. 2019

Incidence, severity and risk factors of injuries & illnesses.
Under review



Aim

- To describe the annual incidence of injuries and illnesses among Paralympic athletes and to assess risk factors

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Methods

- **Study design:** Closed longitudinal prospective study
- **Participants:** 107 Swedish athletes, candidates for the Paralympic Games
- **Data collection:** Electronic self-reports in an adapted eHealth application
- **Definitions:** Any new musculoskeletal pain, feeling, injury, illness or psychological complaint that made the athlete partially or completely abstain from training or competition
- **Statistics:** Descriptive statistics (incidence rate and incidence proportion), Kaplan Meier survival method, Cox proportional hazards regression, Chi square statistics, Mann Whitney U-test *($p<0.05$)*

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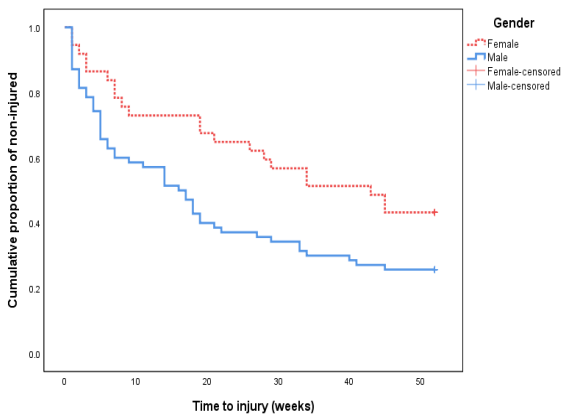
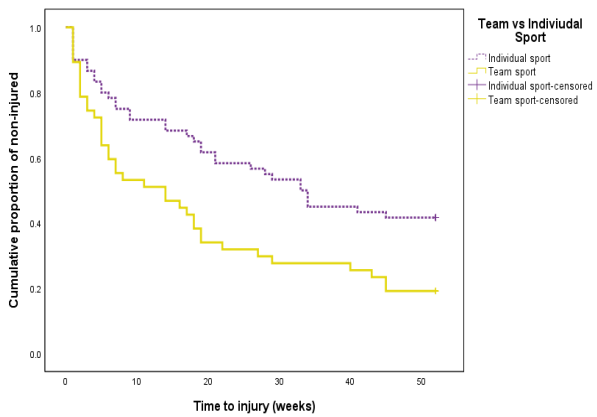
Injury incidence

- **Incidence rate**
  - ➢ 6.9/1000 hours of exposure
- **Incidence proportion**
  - ➢ 68% reported a new injury
  - ➢ Median time to injury: 19 weeks (95% CI 10.5-27.4)
  - ➢ Log-rank tests revealed significant variations in survival distribution:

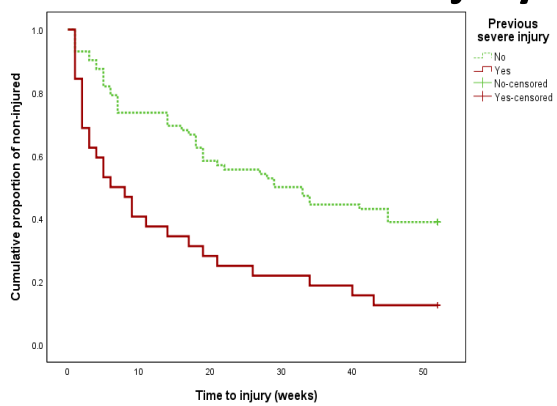
Gender male



Team sport



Previous severe injury



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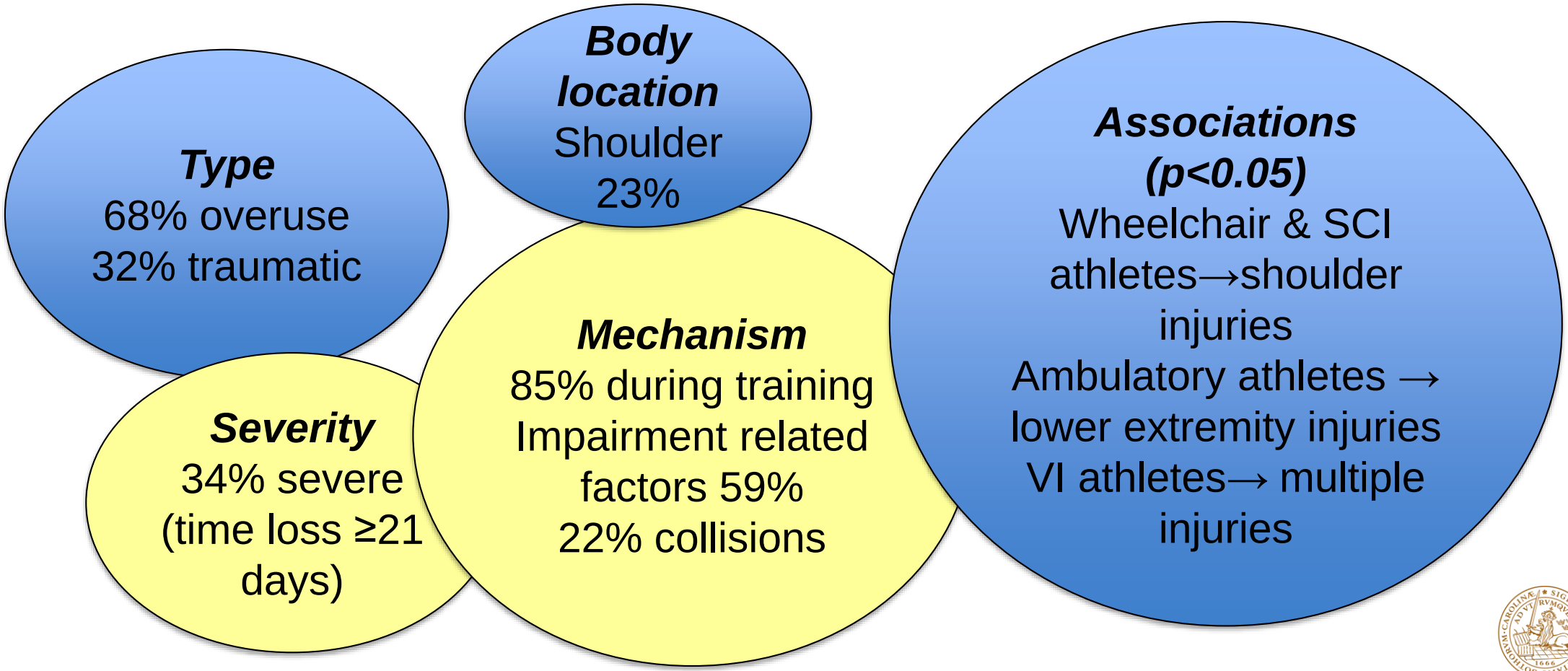
Type and severity of injuries



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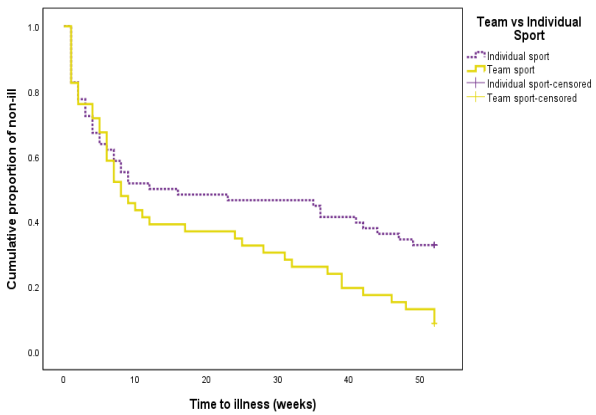
Illness incidence

- **Incidence rate**
  - 9.3/1000 hours of exposure
- **Incidence proportion**
  - 77% reported a new illness
  - Median time to illness: 9 weeks (95% CI 1.40-16.60)
  - Log-rank tests revealed significant variations in survival distribution:

Team sport



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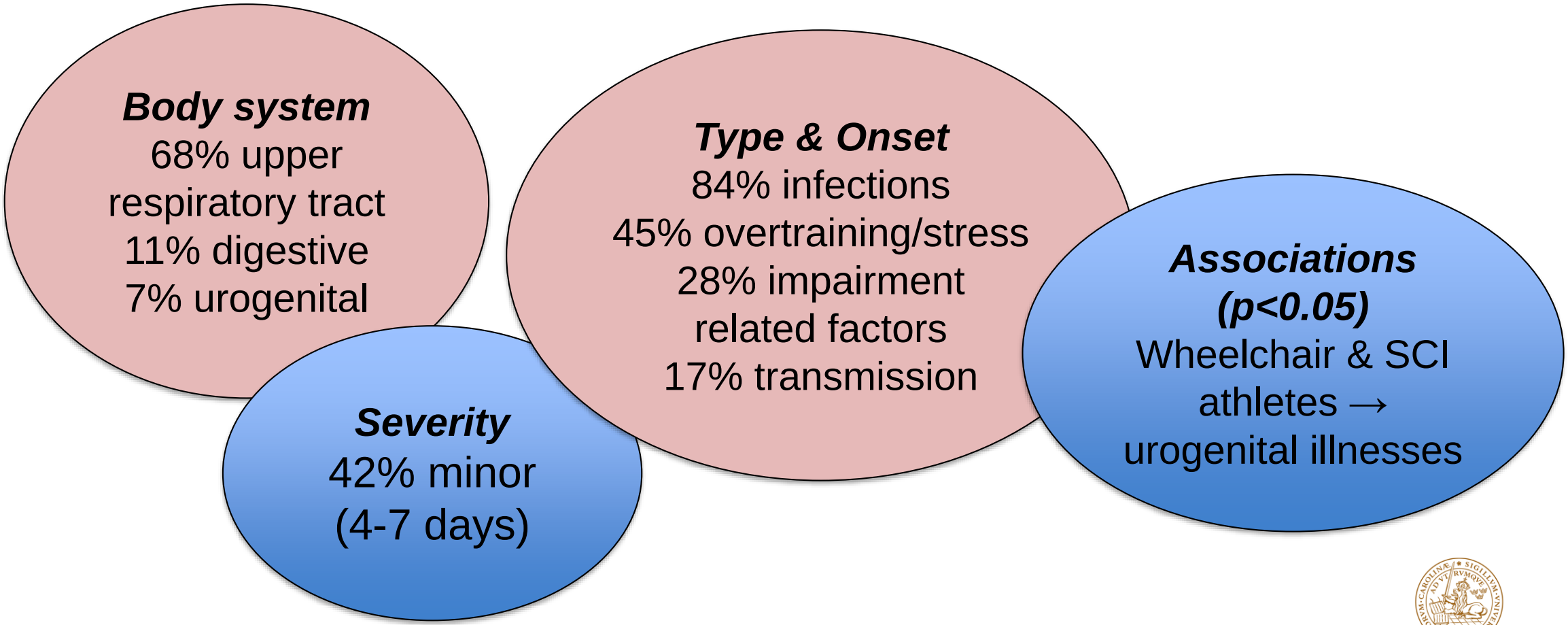
Type and severity of illnesses



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Cox proportional hazard regression

Table 3. Cox proportional hazard regression analyses for time to first SRIIPS, presented with hazard ratio (HR), p-value and 95% CI.

	First injury			**First illness**		
	HR	p-value	95% CI	HR	p-value	95% CI
Simple models						
Team Sport *vs* Individual sport	**1.88**	***0.007***	**1.19-2.99**	**1.55**	***0.048***	**1.01-2.40**
Sex (Male *vs* female)	**1.76**	***0.029***	**1.06-2.93**	1.22	0.413	0.76-1.93
Previous severe injury/illness last year	**2.37**	***<0.001***	**1.47-3.83**	1.18	0.591	0.64-2.19
Age (26-34 years *vs* 18-25 or 35-63 years)	1.13	0.668	0.65-1.94	1.24	0.408	0.74-2.08
Impairment VI *vs* II and PI, VI *vs* II, SCI, limb deficiency, central neurological, les autres	1.15	0.613	0.67-1.99	1.52	0.116	0.90-2.54
Training load middle *vs* high and low	1.58	0.115	0.90-2.78	1.40	0.207	0.83-2.39
Winter sport *vs* Summer sport	1.38	0.266	0.78-2.44	1.00	0.995	0.58-1.73
Wheelchair user *vs* Ambulatory	1.08	0.729	0.69-1.72	0.92	0.693	0.59-1.41
Multiple models with interactions						
Team sport*Summer sport				**2.01**	***0.005***	**1.29-3.29**
Male*Previous Illness				**2.13**	***0.040***	**1.04-4.36**

Conclusions

- First long-term prospective evaluation of injuries & illnesses in Parasport
- Fairly high incidence
- Male athletes, athletes in team sports and with previous incidents at risk, and should therefore be targets for preventive measures
- No risk factors associated with a specific impairment
- A variety of acute injuries, overuse injuries and illnesses
- Biopsychosocial prevention on primary, secondary & tertiary levels
- Need for surveillance in different settings

Thanks

@KristinaFagher
kristina.fagher@med.lu.se