

# CIRCUS & SCIENCE: AN OVERVIEW OF HEALTH RESEARCH AND MONITORING IN CIRCUS PERFORMANCE

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A photograph of a modern urban street scene. In the foreground, there are trees with green and yellowing leaves. In the background, there are several buildings, including a tall glass skyscraper and a large, multi-story building with a curved facade. A white truck with the logo 'PAX GROEP' is visible on the street. The sky is clear and blue.

Education ( $\pm$  1000 students); 9 bachelors, 3 masters

Professorship Arts & Wellbeing; Arts for wellbeing & Healthy Artist



# ARTS & WELLBEING



**Janine Stubbe**  
Professor  
Arts & Wellbeing



**Rogier van Rijn**  
Associate professor  
Arts & Wellbeing



**Stephanie Keizer**  
Head Student Life



**Suze Steemers**  
Human movement scientist  
PhD candidate - Music



**Annemiek Tiemens**  
Human movement scientist  
PhD candidate - Dance



**Larissa Plaatsman**  
Human movement scientist



**Maurice Buiten**  
Software engineer  
ICT



**Angelo Richardson**  
Software engineer  
ICT

# CIRCUS ARTS

- 4-year bachelor program
- 60-70 students
- Specializations:
  - Floor acrobatics
  - Aerial skills
  - Balancing skills
  - Chinese and dance pole
  - Cyr wheel
  - Object manipulation
  - Partner acrobatics
  - Teeterboard
  - Trampoline





# CIRCUS ARTISTS ARE ATHLETES



Strength, high impact loads & extreme ranges of movements



High workload

Health problems





# Untangling risk factors including discipline-specific exposure for injuries in preprofessional and professional circus artists in the USA

Stephanie Greenspan <sup>1,2</sup> Melanie I Stuckey <sup>3</sup>

## Injury Patterns and Injury Rates in the Circus Arts

### An Analysis of 5 Years of Data From Cirque du Soleil

Ian Shrier,<sup>\*†</sup> MD, PhD, Willem H. Meeuwisse,<sup>‡</sup> MD, PhD, Gordon O. Matheson,<sup>§</sup> MD, PhD, Kristin Wingfield,<sup>||</sup> MD, Russell J. Steele,<sup>†</sup> PhD, François Prince,<sup>||</sup> PhD, James Hanley,<sup>†</sup> PhD, and Michael Montanaro<sup>#</sup>

From <sup>†</sup>McGill University, Montreal, Quebec, Canada, <sup>‡</sup>University of Calgary, Calgary, Alberta, Canada, <sup>§</sup>Stanford University, Stanford, California, <sup>||</sup>Center for Sports Medicine, Saint Francis Memorial Hospital, San Francisco, California, <sup>||</sup>Université de Montréal, Montreal, Quebec, Canada, and <sup>#</sup>Concordia University, Montreal, Quebec, Canada

# Injury Patterns and Rates Amongst Students at the National Institute of Circus Arts

An Observational Study

*David Munro, PhD*

Despite the ever-growing global participation in circus arts, very little research has been conducted into injuries associated with this physical discipline. To date, no studies have exam-

mented circus in Australia.<sup>21</sup> Today, contemporary Australian circus is a world leader of a relatively recent global phenomenon.

## **Mental Health of Circus Artists: Psychological Resilience, Circus Factors, and Demographics Predict Depression, Anxiety, Stress, and Flourishing**

Fleur E.C.A. van Rens<sup>1</sup> and Brody Heritage<sup>2</sup>







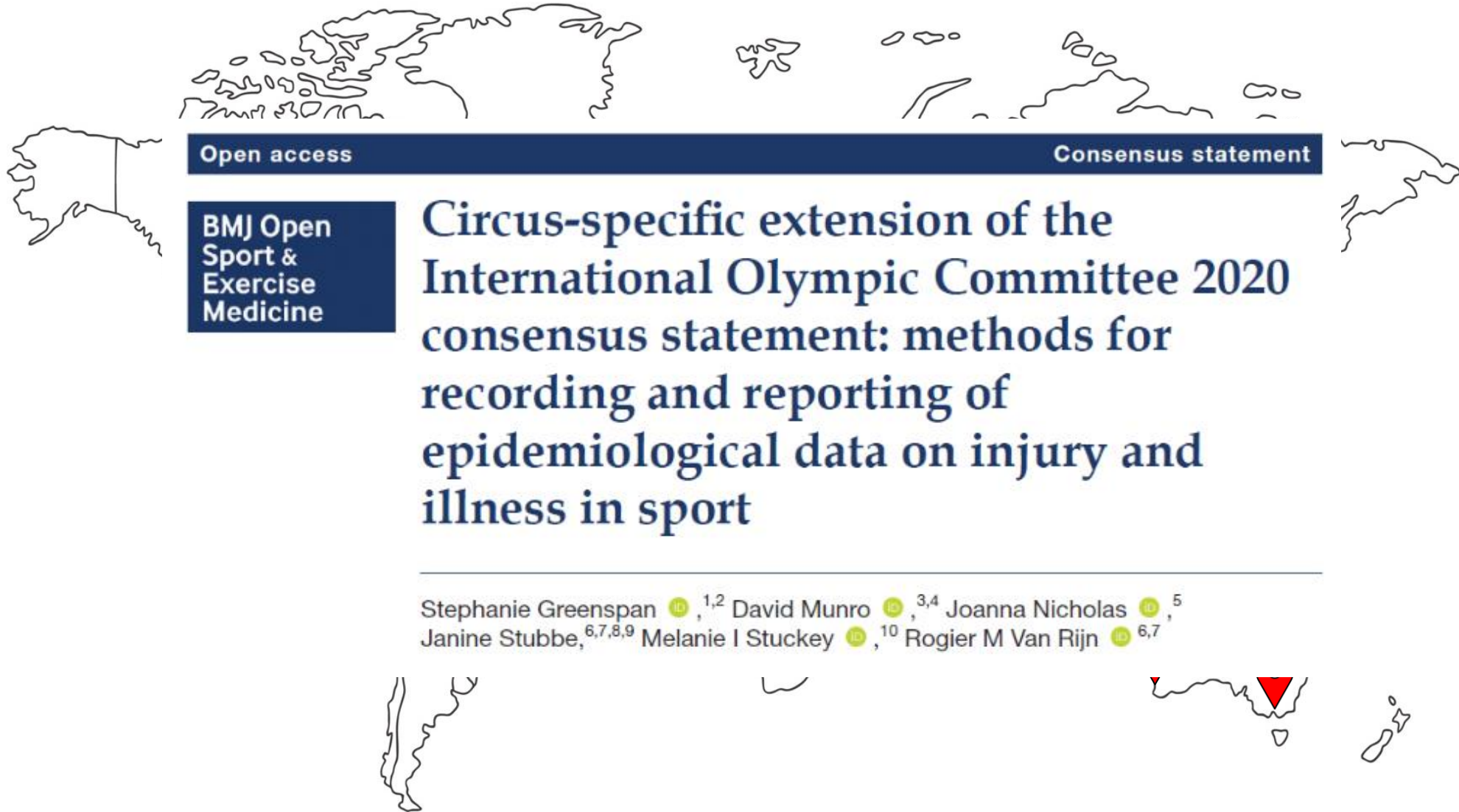
Open access

Original article

**BMJ Open  
Sport &  
Exercise  
Medicine**

## Prospective cohort study on injuries and health problems among circus arts students

Janine H Stubbe,<sup>1,2,3</sup> Angelo Richardson,<sup>1,2</sup> Rogier M van Rijn<sup>1,2</sup>



Open access

Consensus statement

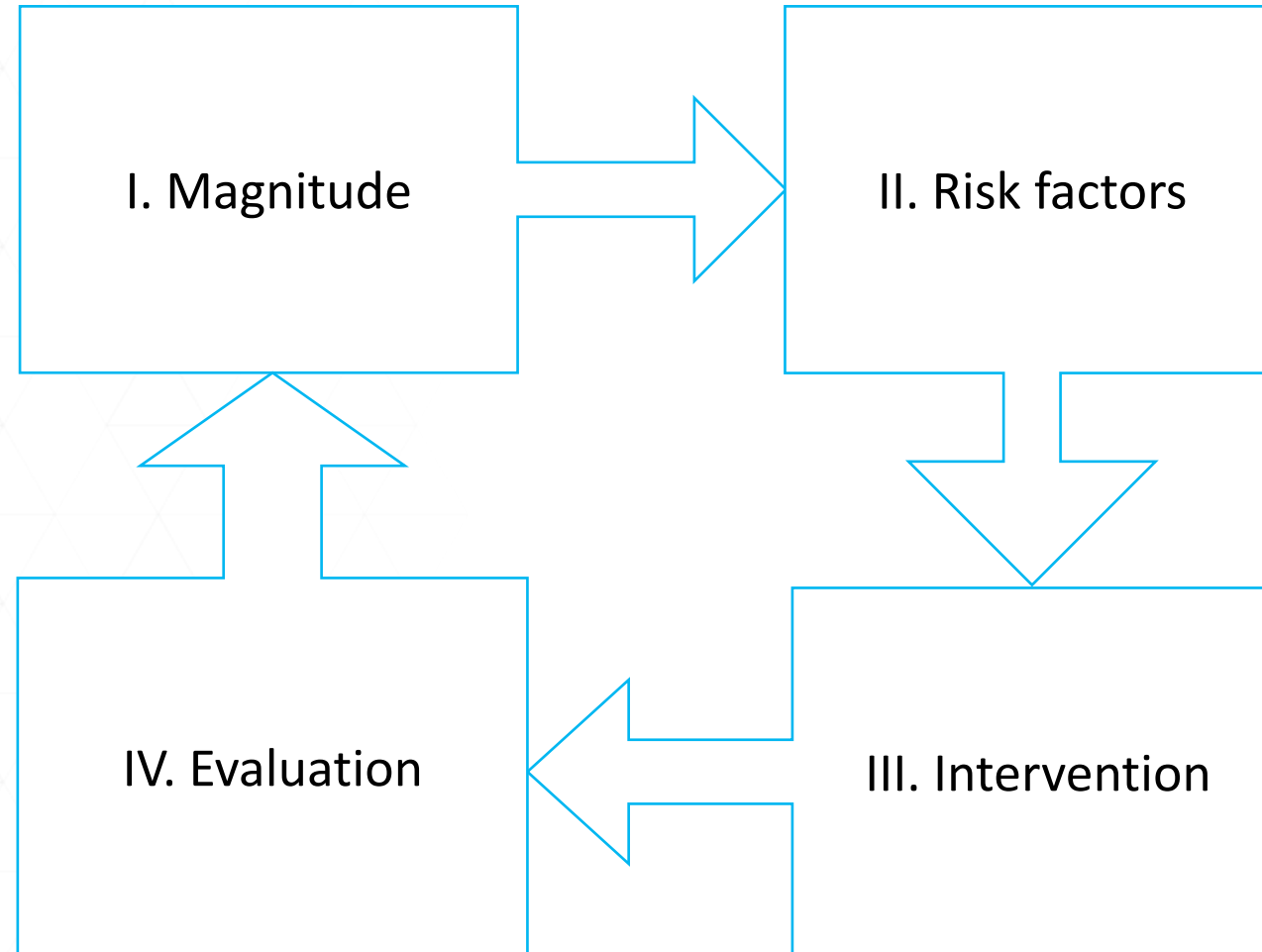
**BMJ Open  
Sport &  
Exercise  
Medicine**

# Circus-specific extension of the International Olympic Committee 2020 consensus statement: methods for recording and reporting of epidemiological data on injury and illness in sport

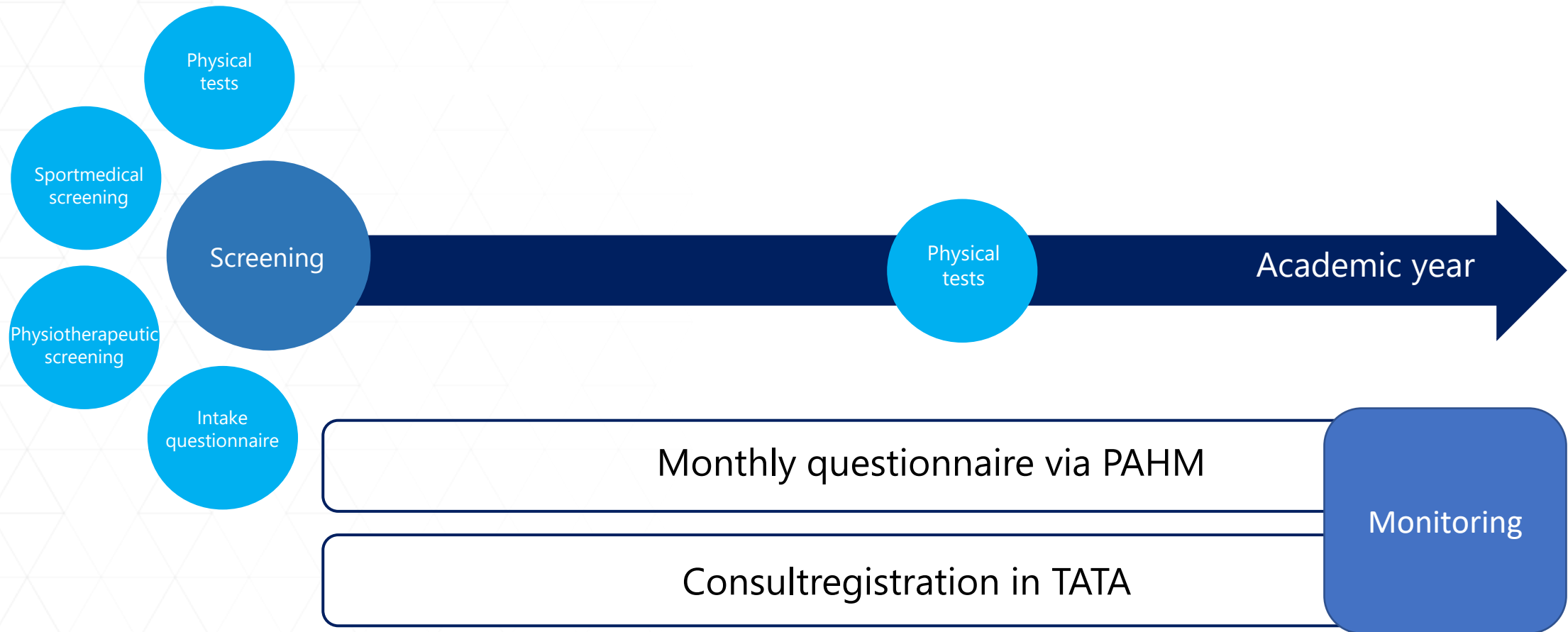
Stephanie Greenspan <sup>1,2</sup> David Munro <sup>3,4</sup> Joanna Nicholas <sup>5</sup>  
Janine Stubbe, <sup>6,7,8,9</sup> Melanie I Stuckey <sup>10</sup> Rogier M Van Rijn <sup>6,7</sup>



# SEQUENCE OF PREVENTION

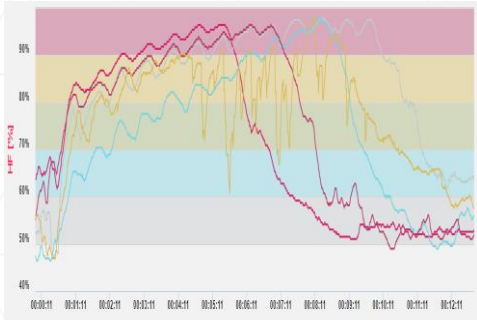


# THE CODARTS WAY





# LONGITUDINAL DATA



**427 Interval Shuttle Run Tests**



**617 Jump tests**



**545 specific ankle tests**



**2403 monthly questionnaires**

## INLOGGEN

Email \*


Wachtwoord \*

INLOGGEN

[WACHTWOORD VERGETEN](#)





 Questionnaires

 Results

 Feedback

 Settings

 Logout

## Welcome to PAHM, the 'Performing Artist Health Monitor'!

At Codarts this tool is also known as the Student Life Monitor (SLM). PAHM was developed by our Student Life department and the professorship Arts & Wellbeing to support you throughout your Codarts journey.

PAHM is an online tool that allows you to monitor your own physical and mental health. It helps you to stay on top of your health and enhances your health awareness – key factors in becoming a sustainable and healthy artist. Through PAHM, you can complete questionnaires, review your personal results from both questionnaires and physical tests (for some departments) and track your progress!

Click one of the buttons below to complete your questionnaire(s) or to view your results and/or feedback. Take charge of your wellbeing today!

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The following questionnaires are ready to be completed.

[SLM - MAANDELIJKS/MONTHLY PERFORMING ARTS](#)

[VIEW RESULTS](#)



 Questionnaires

 Results

 Feedback

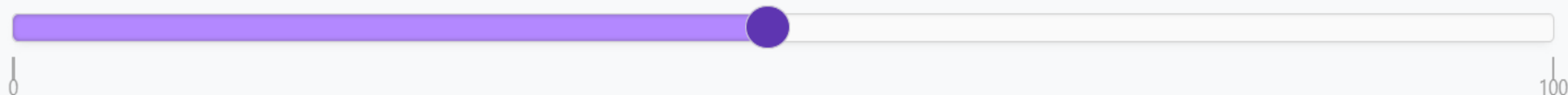
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## Student Life Monitor Monthly questionnaire 2024 - 2025

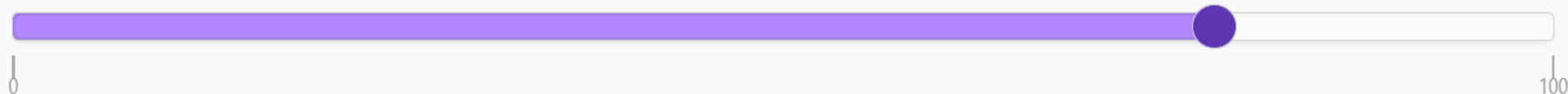
Please indicate on the line below how much physical pain you had in the past four weeks, in general.

0; No pain - 100; Worst pain you can imagine



Please indicate on the line below how much stress RELATED TO SCHOOL you experienced in the past four weeks.

0; No stress - 100; Extreme amount of stress







 Questionnaires

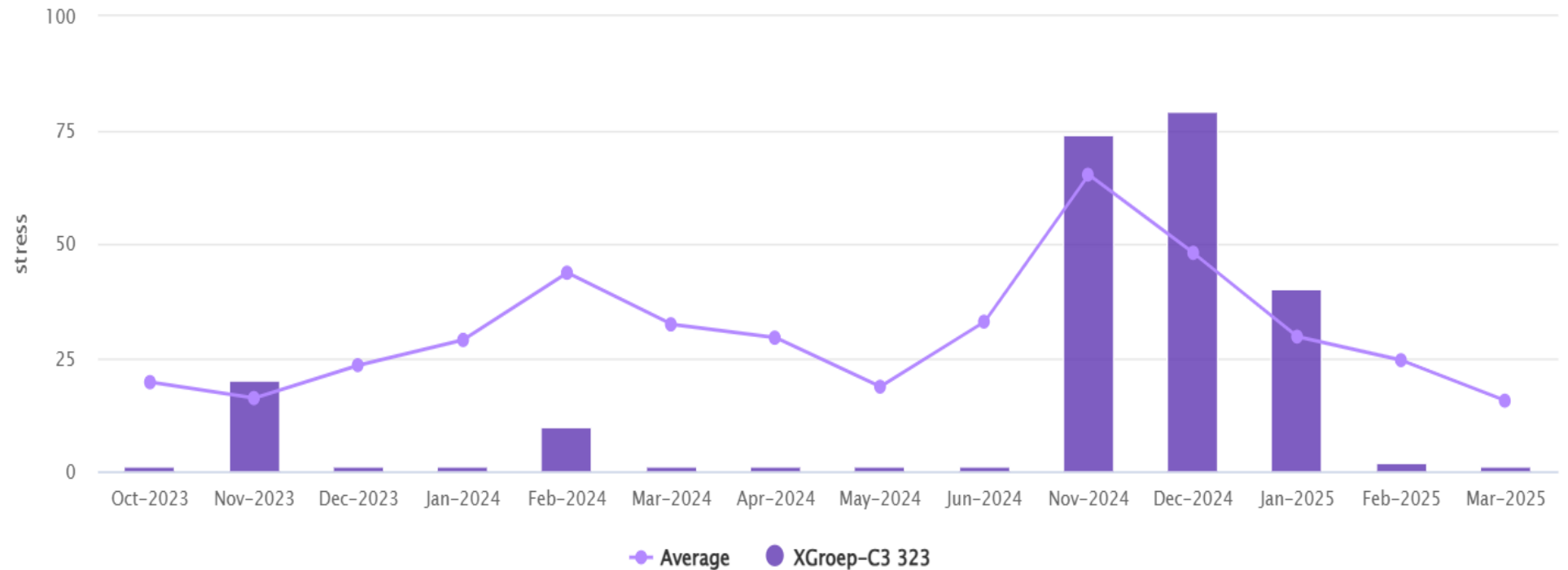
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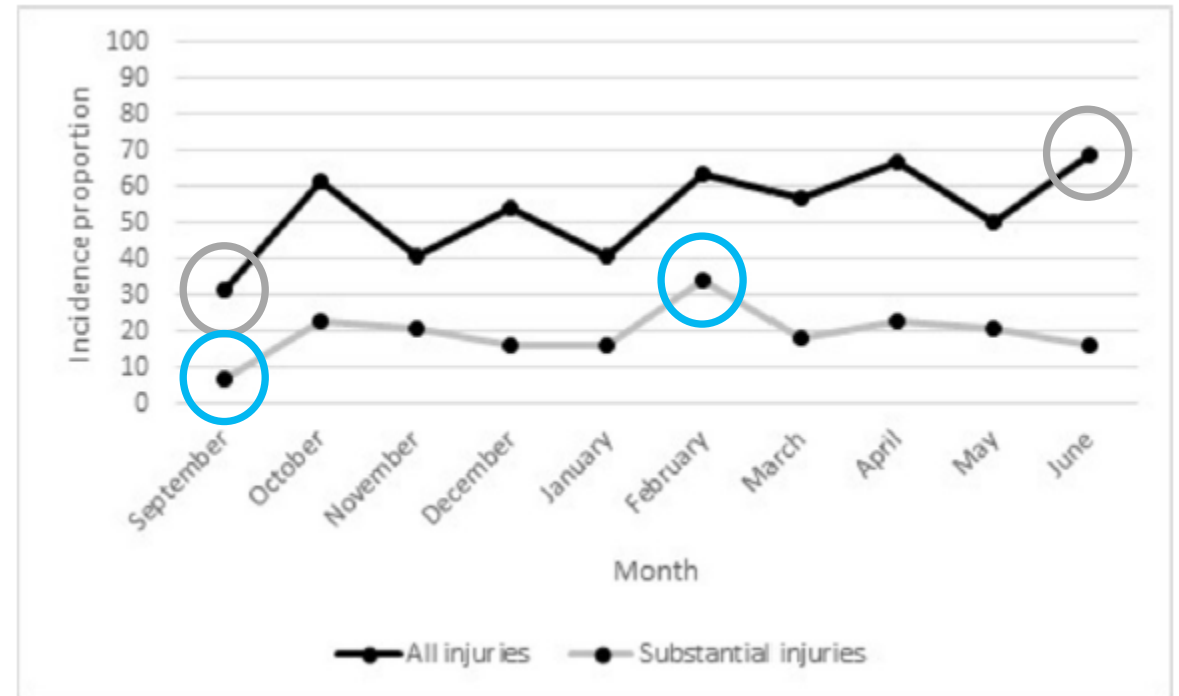
## Stress due to school



Above you find your stress scores related to school. The scale ranges from 0 (no stress at all) to 100 (extreme amounts of stress). Stress occurs when you experience that the environmental demands exceed your abilities to cope with these demands when the situation is important for you, for example when you really want to pass an exam or want to be casted for a role that is important to you. In general, stress results in an unpleasant experience. Stress has a large influence on your physical health as well, it is therefore important to keep an eye on your own stress level. For questions or advice about stress you can make an appointment with one of the student psychologists via MyCodarts Studyspace ([Student Psychologist](#)). Please make sure that you inform your study coach as well!

# HIGH INCIDENCE OF INJURIES

- 42 students (95.5%)
- 130 unique cases
- 3.3 injuries / 1000 hrs (95% CI 2.7-3.9)
- 4.4 injuries during academic year (range 1 -8)

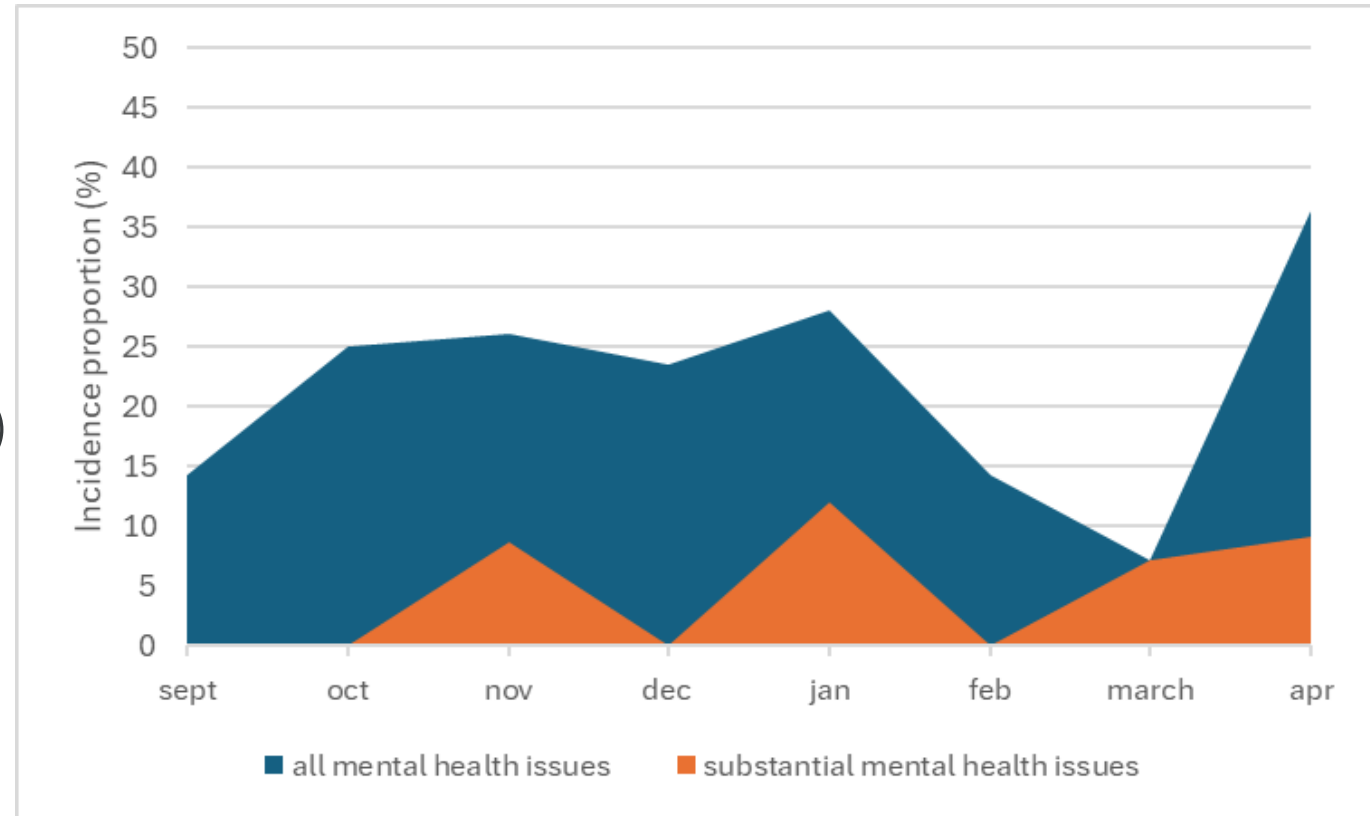






# MENTAL HEALTH ISSUES

- 17 out of 42 students (40.5%)
- N = 35 / n=30 (unique cases)
- 2.1 mental health issues / year (range 1-5)



# MENTAL HEALTH ISSUES

- Feeling down, depressed or hopeless (n=12, 34.3%)
- Performance anxiety (n=3, 8.6%)
- Panic attacks (n=3, 8.6%)
- Eating problems (n=3, 8.6%)

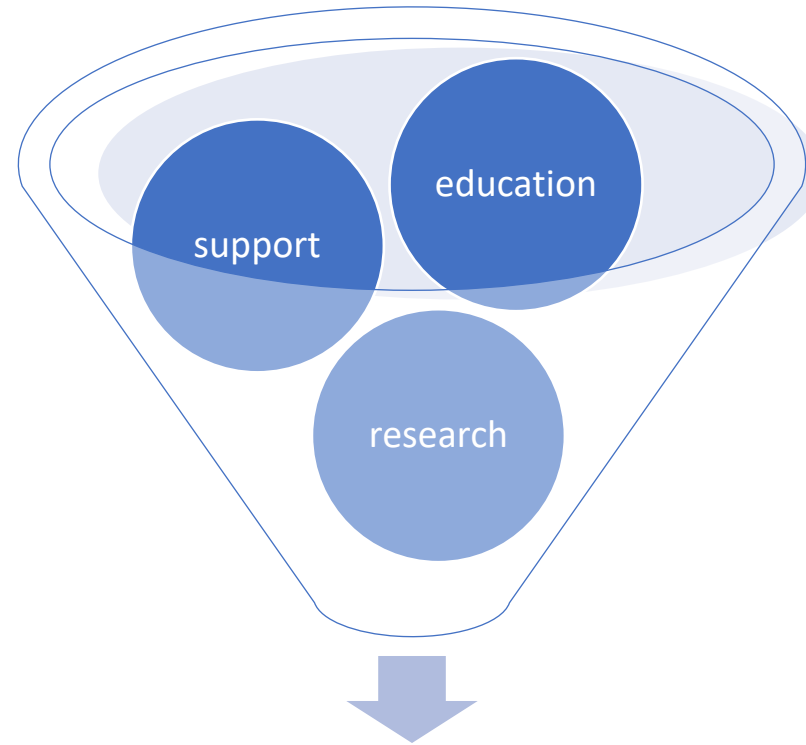


# SUSTAINABLE, HEALTHY, SELF-REGULATING ARTIST

**Education:** Tailored programs across all bachelor's degrees, extracurricular activities.

**Support:** Health specialists and general student support services

**Research:** Collaboration with the Arts & Wellbeing research group.



Sustainable, healthy, self-regulating artist



A man with red hair, shirtless, is performing a trick on a hula hoop. He is holding the hoop with his feet and has it around his waist. Two women are standing next to him, smiling and watching. The woman on the left is wearing a grey sweater, and the woman on the right is wearing a black sweater. The background is a textured, light-colored wall.

IMPROVE HEALTH

PREVENT HEALTH PROBLEMS

MAXIMIZE PERFORMANCE

# TAKE CARE

- EU project dedicated to supporting mental health and well-being in the circus arts sector
- Project led by FEDEC – International network for professional circus education
- Co-funded by the programme Creative Europe of the European Union
- **Call for participation - Your voice matters! → <https://www.fedec.eu>**



**Co-funded by  
the European Union**



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