

# Two interventions to enhance functional athletic performance: design of a randomized controlled trial

<b>Submission date</b> 08/07/2016	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 11/07/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 10/08/2020	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Struggling to deliver performance in competitions is one of the main reasons why athletes seek the advice of sport psychologists. Psychologists apply a variety of techniques, many of which are not evidence-based. Evidence-based techniques could help athletes to increase and maintain functional athletic behaviour in competitions/games (i.e., being focused on task-relevant cues and executing movements and actions in high quality). However, well-designed studies investigating the effectiveness of sport psychological interventions for performance enhancement are scarce. The aim of this study is to examine the effectiveness of two interventions with elite and sub-elite athletes: psychological skills training (PST) and a mindfulness-based intervention (MI).

### Who can participate?

Elite and sub-elite athletes aged 18 or over

### What does the study involve?

Participants are randomly allocated to receive either the PST or MI intervention or to be put on a waiting list. Both interventions last 5 weeks, consist of four 2-hour sessions and are administered by a trained sport psychologist. All sessions take place in the same athletic performance centre. The participants' functional athletic behavior is assessed during a competition/game. Competition anxiety, cognitive interference and negative outcome expectations are also assessed. Assessments are carried out before and after the intervention as well as at 2 months follow up.

### What are the possible benefits and risks of participating?

Both PST and MI are expected to help improve functional behavior in athletes, and we will not only be able to answer the question of whether the interventions work, but also how, under what conditions, and for whom. There are no possible risks in participating in this study.

### Where is the study run from?

Swiss Federal Institute of Sport Magglingen SFISM (Switzerland)

When is the study starting and how long is it expected to run for?  
October 2016 to March 2018

Who is funding the study?  
The Swiss National Science Foundation (Switzerland)

Who is the main contact?  
Philipp Röthlin

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Mr Philipp Röthlin

**ORCID ID**  
<https://orcid.org/0000-0003-2268-571X>

**Contact details**  
Alpenstrasse 18  
Magglingen  
Switzerland  
2532

## Additional identifiers

**Protocol serial number**  
100019\_156627

## Study information

**Scientific Title**  
Psychological skills training and a mindfulness-based intervention to enhance functional athletic performance: design of a randomized controlled trial using ambulatory assessment

**Study objectives**  
The primary objective of this study is to assess the effects of a psychological skills training (PST) and mindfulness-based intervention (MI) in promoting functional athletic behavior (FAB) in elite athletes. We hypothesize that both active interventions are more effective than a waiting-list control condition in promoting FAB. We do not expect PST to be superior over MI or vice versa; rather, they are expected to increase FAB through different routes.

**Ethics approval required**  
Old ethics approval format

**Ethics approval(s)**  
The ethics committee of the Swiss Federal Institute of Sport Magglingen SFISM, 15/03/2014

## **Study design**

Interventional parallel-group randomised controlled trial

## **Primary study design**

Interventional

## **Study type(s)**

Other

## **Health condition(s) or problem(s) studied**

Functional behavior in athletes

## **Interventions**

After a first contact and checking for inclusion and exclusion criteria (time 0), athletes will be stratified for gender, sport, and performance level, then randomly assigned to one of following three groups, and will be informed about their experimental condition:

1. Psychological skills training (PST): imagery, self-talk, goal-setting, arousal regulation
2. Mindfulness-based intervention (MI): mindful meditation, body scan, yoga
3. Waiting-list control group (WC)

The study is single-centre (all sessions will be conducted at the center for elite sports of the Swiss Federal Institute of Sport). The interventions will be realized in groups of six athletes each, leading to six sub-groups in each condition ( $6 \times 6 = 36$  athletes, see power analysis). A manual will accompany the instructions for the interventions. All components of both interventions must be administered according to the manual's specifications by a trained sport psychologist. Two independent raters will evaluate the adherence to each intervention on the basis of video recordings. In addition to psycho-education and practice at home guided by audio files that can be played on computers or portable devices such as smart phones. All participants will also be provided with a calendar of their exercises to tick off as they are completed, and daily text messages will remind them to practice their PST or mindfulness exercises. Each intervention consists of four 2-hour sessions over the course of 5 weeks. Participants will be advised to practice daily and record their amount of practice.

## **Intervention Type**

Behavioural

## **Primary outcome(s)**

Functional athletic behavior (FAB) assessed using ambulatory assessment (during games and competitions) before and after the intervention (pre-post) as well as at two months follow up (three timepoints in total).

## **Key secondary outcome(s)**

1. Cognitive interference, competition anxiety, and negative outcome expectations measured by the according subscales of the Thought Occurrence Questionnaire (TOQS) and the Competition Anxiety Inventory State (CAI-S)
2. Objective measures of performance will be win/lose, points scored, unforced errors etc, subjective measures will be assessed using a single item (how well did you perform?)

Secondary outcome will be measured directly before and after the intervention (pre-post), as well as at two months follow up (three timepoints in total)

**Completion date**

30/03/2018

## Eligibility

**Key inclusion criteria**

Elite, sub-elite, and recreational athletes from four sports (curling, volleyball, i.e., indoor and beach, tennis, and hockey, i.e., floorball and ice hockey), who are members of the respective Swiss national sport associations

**Participant type(s)**

Healthy volunteer

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Total final enrolment**

95

**Key exclusion criteria**

1. Likely mental disorder
2. Significant previous experience with PST or MI
3. Less than 4 hours of athletic training per week
4. Being younger than 18

**Date of first enrolment**

01/10/2016

**Date of final enrolment**

30/09/2017

## Locations

**Countries of recruitment**

Switzerland

**Study participating centre**

**Swiss Federal Institute of Sport Magglingen SFISM**

Alpenstrasse 18

Magglingen

Switzerland

2532

# Sponsor information

## Organisation

Swiss Federal Institute of Sport Magglingen SFISM (Switzerland)

## ROR

<https://ror.org/00c9w1q32>

# Funder(s)

## Funder type

Research organisation

## Funder Name

Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung

## Alternative Name(s)

Schweizerischer Nationalfonds, Swiss National Science Foundation, Fonds National Suisse de la Recherche Scientifique, Fondo Nazionale Svizzero per la Ricerca Scientifica, Fonds National Suisse, Fondo Nazionale Svizzero, Schweizerische Nationalfonds, The Swiss National Science Foundation (SNSF), SNF, SNSF, FNS

## Funding Body Type

Private sector organisation

## Funding Body Subtype

Trusts, charities, foundations (both public and private)

## Location

Switzerland

# Results and Publications

## Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Data sharing statement to be made available at a later date

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
-------------	---------	--------------	------------	----------------	-----------------

<a href="#">Results article</a>	results	06/08/2020	07/08/2020	Yes	No
<a href="#">Protocol article</a>	protocol	26/07/2016		Yes	No