

Comparing different training methods to improve speed and ball skills in female soccer players

Submission date 22/05/2025	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 29/05/2025	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 27/05/2025	Condition category Other	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Female soccer players need to be fast and skilful with the ball. We wanted to find out which training method works best to improve speed and ball control skills.

Who can participate?

Female college soccer players aged 18-25 years with at least 5 years of soccer experience, who are healthy and currently playing for their university team.

What does the study involve?

Players were divided into three groups. One group trained by pushing a weighted sled while sprinting. Another group did regular sprint training without weights. The third group played small soccer games. All groups trained twice a week for 6 weeks. We measured their speed and ball skills before and after training.

What are the possible benefits and risks of participating?

Benefits include improved fitness and sports performance. Risks are minimal as these are normal training activities that soccer players regularly do.

Where is the study run from?

Myongji University, Seoul, South Korea, in collaboration with a university in China where the training took place.

When is the study starting and how long is it expected to run for?

October 2022 to December 2023

Who is funding the study?

Investigator initiated and funded

Who is the main contact?

Prof. Buong-O Chun, tianbingwu@mju.ac.kr

Contact information

Type(s)

Public, Scientific, Principal investigator

Contact name

Prof Buongo Chun

ORCID ID

<https://orcid.org/0000-0003-3831-2328>

Contact details

Graduate School of Physical Education

Myongji University

116 Myongji-ro, Cheoin-gu

Yongin-si

Korea, South

17079

+82 (0)31 330 6302

tianbingwu@mju.ac.kr

Additional identifiers

Clinical Trials Information System (CTIS)

Nil known

Protocol serial number

IRB No. MJU-2022-10-001-02

Study information

Scientific Title

Comparative effects of sled push-sprint, non-resistance sprint, and small-sided game training on speed, power, and dribbling performance in female college soccer players: a randomized controlled trial

Acronym

SPSSSG-RCT

Study objectives

Sled push-sprint training will be more effective than non-resistance sprint training and small-sided games in improving explosive power, sprint performance, and dribbling abilities in female college soccer players. Different training methods will have distinct effects on various performance parameters due to training specificity principles.

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 25/10/2022, Institutional Review Board of Myongji University (34, Geobukgol-ro, Seodaemun-gu, Seoul, 03674, Korea, South; +82 (0)2 300 1458; paper@mju.ac.kr), ref: MJU-2022-10-001-02

Study design

Parallel-group randomized controlled trial

Primary study design

Interventional

Study type(s)

Treatment, Efficacy

Health condition(s) or problem(s) studied

Athletic performance/physical fitness

Interventions

This is a parallel-group randomized controlled trial with three arms comparing the effects of different training methods on performance parameters in female college soccer players. The study employed a pre-post intervention design with blinded outcome assessments over a 6-week training period. Computer-generated random number allocation was carried out using Microsoft Excel's random number generator function. Participants were randomly allocated to three training interventions over 6 weeks (twice weekly):

1. Sled Push-Sprint Training (SPS): Participants performed 20 m sprints while pushing a weighted sled (30% of body weight), 3 repetitions × 3 sets, with a 2-minute rest between repetitions and a 3-minute rest between sets.
2. Non-Resistance Sprint Training (NRS): Participants performed 20 m sprints without resistance, and the same volume and rest periods as the SPS group.
3. Small-Sided Games Training (SSG): Participants engaged in 4 v 4 soccer games on a 30 m × 20 m pitch, 4 games of 4 minutes each with 3-minute active recovery between games.

All groups maintained regular soccer training throughout the study period.

Intervention Type

Behavioural

Primary outcome(s)

1. Sprint performance measured at 5, 10 and 20 m distances using timing photocells (Brower Timing Systems). Time frame: Pre-intervention (baseline) and post-intervention (after 6 weeks).
2. Explosive power measured using the standing long jump test. Distance recorded in meters from the heel reference point. Time frame: Pre-intervention (baseline) and post-intervention (after 6 weeks).

Key secondary outcome(s)

1. T-test dribbling ability: Time to complete T-test course while dribbling a soccer ball. Time frame: Pre-intervention and post-intervention (6 weeks).
2. Directional dribbling ability: Time to complete the agility dribble test through 4 cones placed at 5 m intervals forming 100° angles. Time frame: Pre-intervention and post-intervention (6 weeks).

Completion date

31/12/2023

Eligibility

Key inclusion criteria

1. Female college soccer players with a minimum of 5 years of competitive soccer experience
2. Currently active members of the university soccer team
3. Participated in regular team training for at least the previous 6 months
4. Provided written informed consent for participation
5. No history of musculoskeletal injuries within the previous 6 months prior to the study
6. No medical condition that could affect ability to perform high-intensity sprint training
7. No regular participation in additional resistance training programs outside of team practice

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

20 years

Upper age limit

25 years

Sex

Female

Total final enrolment

29

Key exclusion criteria

1. History of musculoskeletal injuries within the previous 6 months prior to the study
2. Any medical condition that could affect ability to perform high-intensity sprint training
3. Regular participation in additional resistance training programs outside of team practice
4. Unable to provide written informed consent
5. Less than 5 years of competitive soccer experience
6. Not currently active members of the university soccer team
7. Did not participate in regular team training for at least the previous 6 months

Date of first enrolment

01/11/2022

Date of final enrolment

30/11/2022

Locations

Countries of recruitment

China

Study participating centre

Changzhou Institute of Textile and Garment

Changzhou Vocational Institute of Textile and Garment

No. 53 Gehu Road

Changzhou Jiangsu

Changzhou

China

213164

Sponsor information

Organisation

Myongji University

ROR

<https://ror.org/00s9dpb54>

Funder(s)

Funder type

Other

Funder Name

Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

Individual participant data will be made available to researchers upon reasonable request after publication of the main findings from Prof. Buong-O Chun (tianbingwu@mju.ac.kr). Data will be anonymized and provided in accordance with institutional policies and ethical guidelines. Requesters will need to provide a methodologically sound proposal and agree to data use terms that ensure participant privacy and confidentiality.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Study website	Study website	11/11/2025	11/11/2025	No	Yes