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Effects of Gua Sha intervention on sports performance in badminton players

Submission date	**Recruitment status**	[X] Prospectively registered
17/03/2025	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
19/03/2025	Completed	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
18/03/2025	Other	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Muscle tearing causes inflammation, which can lead to swelling, soreness, and other symptoms. The most common way for preventing muscle soreness and flexibility reduction are foam roller, massage balls, manual massage, and stretching exercises. Gua Sha is a scraping technique that is effective on anti-inflammatory and analgesia. However, there have been very few studies on scraping intervention in sports in the past. Therefore, the purpose of this study is to investigate the effects of various massage techniques on the performance of badminton players.

Who can participate?
People who live in Taiwan and aged 18-30 years old who are regularly practice badminton for at least twice per week.

What does the study involve?
Participants will be randomly allocated into three groups using sealed envelopes, namely Gua sha group, foam roller group, and control group. Participants in each group will received a 4-week massage interventions by Gua sha, foam roller or massage oil effleurage technique.

What are the possible benefits and risks of participating
The possible benefits include muscle flexibility of the lower extremity improved and further improve the agility and balance. Risks include possible muscle soreness after the measurements.

Where is the study run from?
China Medical University, Taiwan

When is the study starting and how long is it expected to run for?
July 2024 to July 2025

Who is funding the study?
China Medical University, Taiwan

Who is the main contact?
Dr Yu-Lin You, oilfish@mail.cmu.edu.tw

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Dr Yu-Lin You

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Additional identifiers

Study information

Scientific Title
Effects of Gua Sha intervention on the flexibility, agility and balance in badminton players

Study objectives
Gua Sha intervention improves flexibility, agility and balance in badminton players

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 30/07/2024, China Medical University Hospital Research Ethics Committee (no. 2 Yude Road, Taichung,, 40047, Taiwan; +886-4-22052121; irb@mail.cmuh.org.tw), ref: CMUH113-REC1-127

Primary study design
Interventional

Study design
Interventional randomized controlled trial

Study type(s)
Other

Health condition(s) or problem(s) studied
Healthy, active, and experienced badminton players

Interventions

Participants will be randomly allocated into three groups using sealed envelopes, namely Gua sha group, foam roller group, and control group. Participants in each group will received a 4-week massage interventions by Gua sha, foam roller or massage oil effleurage technique.

Intervention Type
Other

Primary outcome(s)
Measured before the intervention, and after a 4-week intervention:
1. Agility test measured using hexagon agility tests
2. Muscle properties of lower extremity measured using Myoton (MyotonPRO, Myoton AS, Tartu, Estonia)

Key secondary outcome(s)
Balance ability will be measured by Y-balance test before the intervention and after a 4-week intervention

Completion date
29/07/2025

Eligibility

Key inclusion criteria
1. Badminton training for two days or more per week, with each training session lasting two hours or more.
2. Age: 18-30 years old

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit
30 Years

Sex
All

Key exclusion criteria
1. People with chronic or serious diseases (such as diabetes, cancer, cardiovascular disease, poor liver and kidney function)
2. Pregnent

Date of first enrolment
20/03/2025

Date of final enrolment
29/07/2025

Locations

Countries of recruitment
Taiwan

Study participating centre
Department of Sports Medicine, China Medical University, Taiwan
No. 100, Section 1
Jingmao Road
Beitun District
Taichung City
Taiwan
406040

Sponsor information

Organisation
China Medical University

ROR
https://ror.org/032d4f246

Funder(s)

Funder type
University/education

Funder Name
China Medical University, Taiwan

Alternative Name(s)
CMU

Funding Body Type
Private sector organisation

Funding Body Subtype
Universities (academic only)

Location
Taiwan

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon request from Dr Yu-Lin You (oilfish@mail.cmu.edu.tw) until 31/7/2026. The personal information of all participants will be anonymized by code name.

IPD sharing plan summary
Available on request