

Determining the effects of football with a diet regimen on patients with type 1 diabetes

Submission date 07/01/2019	Recruitment status No longer recruiting	☒ Prospectively registered ☐ Protocol
Registration date 15/01/2019	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 14/09/2023	Condition category Nutritional, Metabolic, Endocrine	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Previous studies have shown that physical activity does not improve the glycemic (blood sugar) control of type 1 diabetes mellitus (T1DM) patients in 12 weeks. The aim of this study is to identify the effects of football (soccer) combined with a diet regimen on the glycemic control, health-related fitness, and health-related quality of life of boys with T1DM.

Who can participate?

Patients aged 13-18 who have had diabetes for more than a year, who do not have a disease that will hinder their participation in the study, and who can come to the study location

What does the study involve?

Participants are randomly allocated into four groups: football with diet, football only, diet only, and the control group. The football groups participate in 1 hour 30 minutes of football practice, twice a week for 12 weeks. The diet groups are provided with diet recommendations. The control group receive no interventions (usual care only). Body mass index (BMI), cardiorespiratory fitness, muscular fitness, resting heart rate, blood pressure, blood lipids, fasting blood glucose, glycated hemoglobin (HbA1c), and health-related quality of life are measured at the start of the study and after the program.

What are the possible benefits and risks of participating?

Benefits include an improvement in glycemic control after 12 weeks, blood lipids, blood pressure, health-related fitness, and health-related quality of life. The risk involved is that the participants in the football groups may experience low blood sugar levels while sleeping.

Where is the study run from?

The football program will take place at King Fahd University of Petroleum & Minerals. The patients in the diet group follow their regimen from their homes.

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

July 2016 to April 2019

Who is funding the study?
King Fahd University of Petroleum & Minerals (Saudi Arabia)

Who is the main contact?
Dr Mohammed Hamdan Hashem Mohammed

Contact information

Type(s)
Scientific

Contact name
Dr Mohammed Hamdan Hashem Mohammed

ORCID ID
<https://orcid.org/0000-0002-7193-2185>

Contact details
PO Box 1366, King Fahd University of Petroleum & Minerals
Dhahran
Saudi Arabia
31261

Additional identifiers

Protocol serial number
IN171042

Study information

Scientific Title
Effects of 12 weeks football with a diet regimen on glycemic control, selected health-related fitness parameters, and health-related quality of life of patients with type 1 diabetes: a randomized controlled trial

Study objectives
Football combined with a diet regimen is the most suitable method for good glycemic control after 12 weeks for patients with type 1 diabetes when compared to football or diet alone.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ethics committee: Deanship of Scientific Research, King Fahd University of Petroleum & Minerals, PO Box 5083, Dhahran - 31261, Tel: +966138603200, Email: src@kfupm.edu.sa, 15/04/2018, ref: IN171042

Primary study design
Interventional

Study design

Single-centre interventional randomised statistician-masked trial

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Type 1 diabetes mellitus

Interventions

Allocation: Simple randomization. The lab technicians and statistician will be blinded to group assignment.

Group 1: Football and diet regimen

Group 2: Football only

Group 3: Diet regimen only

Group 4: Regular care

Each football session will last 1 hour 30 minutes twice times a week for 12 weeks.

Expert dietitians will be consulted to provide a diet regimen for the intervention groups. The regimen will provide the necessary calories to reach and maintain the ideal body weight of the patients. The regimen will consider the cultural setting, food preferences, the weight of the patients, and their exercise and insulin dosage. The patients will be instructed to eat a fixed amount of calories daily for 12 weeks. A nutritionist specialized for patients with diabetes will provide information and training to the patients and their parents on how they should consume the amount of calories they need and how they record what they have eaten. The patients will submit weekly what they have consumed to the dietitians in order to check if they followed their recommendations.

The control group will receive no intervention (usual care only).

Body mass, body mass index (BMI), cardiorespiratory fitness, muscular fitness, resting heart rate, blood pressure, blood lipids, fasting blood glucose, HbA1c, and HRQoL will be measured at baseline and after the program. The HRQoL will be determined using The Pediatric Quality of Life Inventory (PedsQL™) with Diabetes Module 3.0. The primary outcome will be assessing glycemic control through changes in HbA1c after 12 weeks.

Intervention Type

Behavioural

Primary outcome(s)

Glycemic control assessed through changes in glycated hemoglobin (HbA1c) at baseline and 12 weeks

Key secondary outcome(s)

Measured at baseline and 12 weeks:

1. Blood lipids and blood glucose measured by a lab test
2. Body mass index: mass and height measured with a mass scale and stadiometer, respectively
3. Cardiovascular fitness measured using the FitKids Treadmill Test
4. Muscular strength measured using standing long jump

5. Health-related quality of life measured using Arabic version of the PedsQL™ with the Diabetes Module 3.0

Completion date

15/04/2019

Eligibility

Key inclusion criteria

1. 12-18 years
2. Male
3. Diagnosed for diabetes for more than one year.
4. Should not have any medical condition that will hinder their participation in the study

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Child

Lower age limit

12 Years

Upper age limit

18 Years

Sex

Male

Key exclusion criteria

1. Has any medical condition that will hinder their participation in the study
2. Was diagnosed with diabetes less than a year ago
3. Those who cannot come to the study location

Date of first enrolment

16/01/2019

Date of final enrolment

17/01/2019

Locations

Countries of recruitment

Saudi Arabia

Study participating centre
King Fahd University of Petroleum & Minerals
Dhahran
Saudi Arabia
31261

Sponsor information

Organisation
King Fahd University of Petroleum & Minerals

ROR
<https://ror.org/03yez3163>

Funder(s)

Funder type
University/education

Funder Name
King Fahd University of Petroleum and Minerals

Alternative Name(s)
, King Fahd University of Petroleum & Minerals, KFUPM

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Saudi Arabia

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Mohammed Hamdan Hashem Mohammed. The data will be available after the first paper is published. The names of the participants shall be removed in order to hide their identities.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		21/03/2021	14/09/2023	Yes	No