Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

The Effectiveness of Two Months of Cyclic Yoga Exercise on Glycemic Indices, Liver Enzymes and Anthropometric Indices in Type 2 Diabetes Patients with Non-alcoholic fatty liver disease

Protocol summary

Study aim

Investigating the Effect of 2 Months of Cyclic Yoga Exercise on Glycemic Indices, Liver Enzymes and Anthropometric Indices in Type 2 Diabetes with Non-Alcoholic Fatty Liver Disease

Design

In this clinical trial with a control group, 40 patients who had research entry criteria, non-randomly divided into two groups based on fatty liver grade.

Settings and conduct

The research method will be quasi-experimental with two yoga exercise group and control groups with pretest and post test. Subjects are 40 type 2 diabetic women with fatty liver. After reviewing the patients' files, about 60 eligible subjects will be invited to start the study.Yoga exercises will be done in Rize Vandy gym for two months.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Type 2 diabetic women with non-alcoholic fatty liver disease- Type 2 diabetic women aged 45 to 55 years with overweight Exclusion criteria: No treatment with insulin - no complications of diabetes (neuropathy, nephropathy, retinopathy) - no use of drugs and alcohol - no participation in regular sports activities - no history of heart, respiratory or mental diseases - no history of fracture, surgery or Joint diseases - lack of hormone therapy and three or more absences in training sessions

Intervention groups

Yoga exercise group: Cyclic yoga exercise for 8 weeks, three days a week Control group: Without regular exercise for 8 weeks

Main outcome variables

Alanine amino transferase, aspartate amino transferase, alkaline phosphatase, glycosylated hemoglobin, fasting blood glucose, cholesterol, LDL cholesterol, HDL cholesterol, triglyceride, waist circumference, blood pressure, IGF-1 hormone, insulin hormone, body fat percentage, body mass index, hip circumference, fatty liver grade

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20110527006611N4**
Registration date: **2023-05-17, 1402/02/27**
Registration timing: **retrospective**

Last update: **2023-05-17, 1402/02/27**
Update count: **0**

Registration date

2023-05-17, 1402/02/27

Registrant information

Name

Zahra Bayat

Name of organization / entity

The University of Tehran

Country

Iran (Islamic Republic of)

Phone

+98 83 3822 9422

Email address

zahra_bayat2008@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-06-10, 1400/03/20

Expected recruitment end date

2022-06-10, 1401/03/20

Actual recruitment start date

2022-06-10, 1401/03/20

Actual recruitment end date
2022-06-10, 1401/03/20
Trial completion date
2022-09-21, 1401/06/30

Scientific title
The Effectiveness of Two Months of Cyclic Yoga Exercise on Glycemic Indices, Liver Enzymes and Anthropometric Indices in Type 2 Diabetes Patients with Non-alcoholic fatty liver disease

Public title
The Effectiveness of Two Months of Cyclic Yoga Exercise on Type 2 Diabetes Patients with Non-alcoholic fatty liver disease
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Type 2 diabetic women with Non-alcoholic fatty liver disease Type 2 diabetic women 45 to 55 years old with overweight
Exclusion criteria:
No insulin treatment No complications of diabetes (neuropathy, nephropathy, retinopathy) No use of drugs and alcoholic drinks, Not participating in regular exercise activities No history of cardiovascular and mental illness No history of fractures, surgery or joint diseases, Three times or more Absence in training sessions Lack of hormone therapy
Age
From **45 years** old to **55 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **40**
Actual sample size reached: **37**
Randomization (investigator's opinion)
Not randomized
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committees of Kermanshah University of Medical Sciences
Street address
Shahid Beheshti blvd- in front of Imam Ali Hospital Building No. 2
City
kermanshah
Province
Kermanshah
Postal code
6714673159
Approval date
2021-11-07, 1400/08/16
Ethics committee reference number
IR.KUMS.REC.1400.070

Health conditions studied

1

Description of health condition studied
Type 2 Diabetes
ICD-10 code
E11
ICD-10 code description
Type 2 diabetes mellitus

2

Description of health condition studied
Non-alcoholic fatty liver
ICD-10 code
K76.0
ICD-10 code description
Fatty (change of) liver, not elsewhere classified

Primary outcomes

1

Description
Glycosylated Hemoglobin
Timepoint
At the beginning of the study (before the intervention) and two months after the intervention
Method of measurement
Blood test with Pishtaz Teb kit

2

Description
Fasting blood glucose
Timepoint
At the beginning of the study (before the intervention) and two months after the intervention
Method of measurement
Blood test with BioSystems kit

3

Description

fatty liver grade

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Ultrasound

Secondary outcomes

1

Description

Alanine Aminotransferase enzyme

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

2

Description

Aspartate Aminotransferase enzyme

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

3

Description

Alkaline phosphatase enzyme

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

4

Description

LDL Cholesterol

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

5

Description

Triglyceride

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

6

Description

HDL Cholesterol

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

7

Description

Cholesterol

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with BioSystems kit

8

Description

Insulin Hormone

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test Siemens kit made in America

9

Description

Waist Circumference

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Standard tape meter

10

Description

Blood Pressure

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

brachial digital blood pressure monitor

11

Description

IGF-1 Hormone

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement

Blood test with DiaSorin kit

12

Description

Hip Circumference

Timepoint

At the beginning of the study (before the intervention) and two months after the intervention

Method of measurement
Standard tape meter

Intervention groups

1

Description
Intervention group: Yoga exercise group: This group performed cyclic yoga exercise for two months, three days a week. Cyclic Yoga is the art of sequencing yoga asana, pranayama and mudra techniques to maximize their benefits and energize the mind and body.The program of selected cyclic yoga exercises includes stretching exercises for large and small pectoral muscles, internal rotators of the arm, glutes, hamstrings, and strengthening the trapezius and rhomboid muscles and the external rotators of the arm and the central muscles of the body were performed in the style of cyclic yoga.
Category
Lifestyle

2

Description
Control group: The control group does not participate in any regular exercise activities during the intervention.
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Dr. Fatemeh Rezvan Madani office
Full name of responsible person
Fatemeh Rezvan Madani
Street address
The office of Dr. Rezvan Madani, Ground Floor, Negin Golestan Apartment, Chahardah Metri-ye-Shariat Street, Emami Blvd
City
Kermanshah
Province
Kermanshah
Postal code
6714754418
Phone
+98 83 3844 2408
Email
Rezvanimadani@yahoo.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Kermanshah University of Medical Sciences
Full name of responsible person
Cyrus Jalili
Street address
No. 2 Central Building, Kermanshah University of Medical Sciences, Shahid Beheshti Street, Kermanshah city
City
Kermanshah
Province
Kermanshah
Postal code
6714673159
Phone
+98 83 3837 6967
Fax
+98 83 3838 4185
Email
cjalili@kums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Kermanshah University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Private
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
University of Tehran
Full name of responsible person
Zahra Bayat
Position
PhD from University of Tehran
Latest degree
Ph.D.
Other areas of specialty/work
Exercise Biochemistry and Metabolism
Street address
Mersad Gym, Sangar Crossroad, 22 Bahman, Kermanshah
City
Kermanshah
Province
Kermanshah
Postal code
6714649939
Phone
+98 83 3838 3184
Email

z.bayat@ut.ac.ir

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity
Kermanshah University of Medical Sciences

Full name of responsible person
Houshang Nemati

Position
Assistant Professor, Fertility and Infertility Research Center, Health Technology Institute, Kermans

Latest degree
Ph.D.

Other areas of specialty/work
Molecular medicine

Street address
Beheshti Blvd, Kermanshah University of Medical Sciences, Kermanshah City

City
Kermanshah

Province
Kermanshah

Postal code
6714869914

Phone
+98 918 836 2982

Email
hnemati@kums.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
The University of Tehran

Full name of responsible person
Zahra Bayat

Position
PhD from University of Tehran

Latest degree
Ph.D.

Other areas of specialty/work
Exercise Biochemistry and Metabolism

Street address
Mersad Gym, Sangar Crossroad, 22 Bahman, Kermanshah

City
Kermanshah

Province
Kermanshah

Postal code
6714649939

Phone
+98 83 3838 3184

Email
z.bayat@ut.ac.ir

Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available

Study Protocol
Yes - There is a plan to make this available

Statistical Analysis Plan
Yes - There is a plan to make this available

Informed Consent Form
Yes - There is a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Not applicable

Data Dictionary
Not applicable

Title and more details about the data/document
The study will start after obtaining the informed consent form of the patients and obtaining the code of ethics and permission of the University of Medical Sciences. After the completion of the study, the data will be collected and analyzed, and the final results will be made available to the researchers and relevant authorities based on the approval of the ethics committee and in accordance with the ethical standards based on the format of the university research department without mentioning the names of the participants. The final result will be presented to the university in the form of a final project report.

When the data will become available and for how long
Start of the 8 month period after the research

To whom data/document is available
For university students and students in research related fields

Under which criteria data/document could be used
There are no specific conditions to provide such information

From where data/document is obtainable
Zahra Bayat Email: z.bayat@ut.ac.ir

What processes are involved for a request to access data/document
Send message to the person responsible for providing the data Email: z.bayat@ut.ac.ir

Comments