

Clinical Trial Protocol

Iranian Registry of Clinical Trials

12 Jul 2026

The Acute and Chronic Effect of Stretching- Birthing Exercise Training on Clinical Outcomes in the First Phase of Cardiac Rehabilitation in Patients Undergoing Coronary Artery Bypass Surgery

Protocol summary

Study aim

The Acute and Chronic Effect of Stretching- Breathing Exercise training on Clinical Outcomes in the First Phase of Cardiac Rehabilitation in Patients Undergoing Coronary Artery Bypass Surgery

Design

In this quasi-experimental study, 50 patients undergoing coronary artery bypass graft surgery will be randomly divided into experimental and control groups.

Settings and conduct

The control and the stretching-breathing group should be hospitalized in Shahid Madani Hospital of Tabriz for at least five days during the implementation of the project. The training group will train twice a day (morning and evening) for five days. According to the American College of Sports Medicine (ACSM), the intensity of training will be less than 13 according to the Borg RPE Scale, and according to the heart rate, the target heart rate will not be more than 30 beats + resting heart rate.

Participants/Inclusion and exclusion criteria

Patients undergoing coronary artery bypass graft surgery
Inclusion and non-inclusion conditions: Both men and women, without a history of cardiac surgery and volunteering to participate in the study, non-emergency surgery, hospitalization and use of similar drugs during the study, with a stable hemodynamic status and no arrhythmia and angina and neuromuscular disorders , Cognitive impairment, severe lung disease and kidney disorders

Intervention groups

Experimental group (recipient of stretching-breathing exercises) Control group (recipient of routine hospital intervention)

Main outcome variables

arterial blood of mean oxygen pressure Pao₂, mean carbon dioxide pressure PaCo₂, mean PH, oxygen saturation Sao₂, blood pressure, heart rate, anxiety

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20160523028028N2**

Registration date: **2020-08-19, 1399/05/29**

Registration timing: **registered_while_recruiting**

Last update: **2020-08-19, 1399/05/29**

Update count: **0**

Registration date

2020-08-19, 1399/05/29

Registrant information

Name

Azam Zarneshan

Name of organization / entity

Azarbaijan Shahid Madani University

Country

Iran (Islamic Republic of)

Phone

+98 41 3432 7505

Email address

zarneshan@azaruniv.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-07-31, 1399/05/10

Expected recruitment end date

2020-10-21, 1399/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty	
Scientific title	The Acute and Chronic Effect of Stretching- Birthing Exercise Training on Clinical Outcomes in the First Phase of Cardiac Rehabilitation in Patients Undergoing Coronary Artery Bypass Surgery
Public title	Stretching- Breathing Exercises and Cardiac Rehabilitation
Purpose	Supportive
Inclusion/Exclusion criteria	Inclusion criteria: Willingness to participate in the study Non-emergency heart surgery Absence of arrhythmia and angina Stable hemodynamic status Exclusion criteria: Having neuromuscular disorders Having cognitive disorders Having severe lung disease Having renal dysfunction Injection fraction less than 35% Have a history of heart surgery
Age	From 40 years old to 65 years old
Gender	Both
Phase	N/A
Groups that have been masked	No information
Sample size	Target sample size: 50
Randomization (investigator's opinion)	Randomized
Randomization description	Available eligible samples will be randomly assigned to the intervention group (recipient of stretching breathing movements) and the control group (recipient of hospital routine intervention) by assigning a 1: 1 ratio. Random allocation sequence will be done by a non-research person using RAS (Random Allocation Software) and random blocking will be done using two and four blocks for allocation in two groups (intervention group and control group). The allocation will be done based on the sequence generated using matte, closed and identical envelopes numbered from number 1 to the end. The first person to enter the study will be given envelope number 1 and this process will continue until the end.
Blinding (investigator's opinion)	Not blinded
Blinding description	
Placebo	Not used
Assignment	Parallel
Other design features	
Secondary Ids	empty

Ethics committees	
<u>1</u>	
Ethics committee	
Name of ethics committee	•Ethics committee of Tabriz University of Medical Sciences
Street address	تبریز، خیابان آزادی ، خیابان گلگشت
City	Tabriz
Province	East Azarbaijan
Postal code	5166614766
Approval date	2020-07-27, 1399/05/06
Ethics committee reference number	IR.TBZMED.REC.1399.470
Health conditions studied	
<u>1</u>	
Description of health condition studied	Patients with coronary artery bypass graft surgery
ICD-10 code	I25.1
ICD-10 code description	Atherosclerotic heart disease of native coronary artery
Primary outcomes	
<u>1</u>	
Description	Arterial blood oxygenation changes
Timepoint	Before, immediately and five days after the intervention
Method of measurement	Pulse oximetry and evaluation of arterial blood gases using arterial sampling
<u>2</u>	
Description	Hemodynamic changes
Timepoint	Before, immediately and five days after the intervention
Method of measurement	Monitoring device
<u>3</u>	
Description	Anxiety
Timepoint	Before, immediately, the first day, the second day, the third day, the fourth and the fifth day of operation
Method of measurement	Anxiety assessment was performed by the Spielberger

Secondary outcomes

1

Description

arterial blood of mean oxygen pressure Pao2

Timepoint

Before, immediately, five days later

Method of measurement

Evaluation of arterial blood gases using arterial sampling

2

Description

arterial blood of mean Carbon dioxide pressure PaCo2

Timepoint

Before, immediately, five days later

Method of measurement

arterial blood of mean Carbon dioxide pressure PaCo2

3

Description

arterial blood oxygen saturation Sao2

Timepoint

Before, immediately, five days later

Method of measurement

Pulse oximetry

4

Description

Blood Pressure

Timepoint

Before, immediately, five days later

Method of measurement

Monitoring device

5

Description

Heart Rate

Timepoint

Before, immediately, five days later

Method of measurement

Monitoring device

Intervention groups

1

Description

Intervention group: Intervention group: Performing stretching-breathing exercises for five days, twice a day (morning and evening). The intensity of training will be less than 13 according to the recommendations of the American College of Sports Medicine (ACSM) and the Borg RPE Scale, and according to the heart rate, the target heart rate will be less than, 30 beats + resting heart rate.

Category

Rehabilitation

2

Description

Control group: Recipient of routine hospital intervention

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Shahid Madani Hospital, Tabriz

Full name of responsible person

Leyla Esmealy

Street address

Shahid Madani Hospital, Daneshgah Ave.

City

Tabriz

Province

East Azarbaijan

Postal code

1557351666

Phone

+98 41 3335 7767

Email

leylaesmealy@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Azarbaijan Shahid Madani University

Full name of responsible person

Ali Ajami

Street address

Azarbaijan Shahid Madani University, 35 Km Tabriz-Maragheh Road

City

Tabriz

Province

East Azarbaijan

Postal code

5375171379

Phone

+98 41 3432 7526

Email

research@azaruniv.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Azarbaijan Shahid Madani University

Proportion provided by this source

100
Public or private sector
Public
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
Azarbaijan Shahid Madani University
Full name of responsible person
Azam Zarneshan
Position
Associate professor
Latest degree
Ph.D.
Other areas of specialty/work
Sport physiology of cardiovascular and inspiration
Street address
Azarbaijan Shahid Madani University , 35 Km Tabriz-
Maragheh Road, Tabriz, Iran
City
Tabriz
Province
East Azarbaijan
Postal code
5375171379
Phone
+98 41 3432 7505
Email
Zarneshan@azaruniv.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity
Azarbaijan Shahid Madani University
Full name of responsible person
Azam Zarneshan
Position
Associate professor
Latest degree
Ph.D.
Other areas of specialty/work
Sport physiology of cardiovascular and inspiration
Street address
Azarbaijan Shahid Madani University , 35 Km Tabriz-
Maragheh Road, Tabriz, Iran
City

Tabriz
Province
East Azarbaijan
Postal code
5375171379
Phone
+98 41 3432 7505
Email
Zarneshan@azaruniv.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
Azarbaijan Shahid Madani University
Full name of responsible person
Azam Zarneshan
Position
Associate professor
Latest degree
Ph.D.
Other areas of specialty/work
Sport Physiology of Cardiovascular and Inspiration
Street address
Azarbaijan Shahid Madani University , 35 Km Tabriz-
Maragheh Road, Tabriz, Iran
City
Tabriz
Province
East Azarbaijan
Postal code
5375171379
Phone
+98 41 3432 7505
Email
Zarneshan@azaruniv.ac.ir

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

Not applicable