

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Fish Oil Supplementation vs Knee Strengthening Exercises: A Comparative Study in Knee Osteoarthritis Management

#### Protocol summary

##### Study aim

The aim of this study is to evaluate and compare the effects of fish oil supplementation and strengthening exercises on pain relief, joint function, inflammation, and overall quality of life in individuals with osteoarthritis.

##### Design

Pragmatic, community based, parallel group, double blinded, randomized controlled trial. Total 95 patients will be enrolled. Patients who met our inclusion criteria will be randomized into three groups.

##### Settings and conduct

Muhammad physical therapy clinic and rehabilitation center, Multan.

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: Clinically diagnosed knee OA (Grade II-III, based on the Kellgren-Lawrence scale), moderate pain severity (VAS score 4-6 at baseline), able to perform exercises and follow instructions. Exclusion criteria: Severe OA requiring surgery, allergies to fish oil or vegetarian individuals unwilling to consume fish products, current use of omega-3 supplements or structured physical therapy for OA, significant comorbid conditions (e.g., rheumatoid arthritis, uncontrolled diabetes, cardiovascular diseases).

##### Intervention groups

Group 1: Fish oil supplementation ( 1,000 mg fish oil capsule taken twice daily for 12 weeks.) Group 2: Strengthening exercises (Isometric Contractions: Static quadriceps contraction held for 5-10 seconds, repeated 10-15 times per session. Isotonic Strengthening exercise: Partial squats and leg raises with incremental resistance over time) Group 3: Combined intervention (Fish oil + Strengthening exercises)

##### Main outcome variables

Knee X rays; Western Ontario and McMaster Universities Osteoarthritis Index scale; Numeric Pain Rating Scale; Pain Catastrophizing Scale; Knee Range of Motion (goniometry); Knee injury outcome (KOOS); Muscle strength (dynamometer); Quality of life (SF-36); C-

reactive protein; Interleukin-6

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20230202057310N10**

Registration date: **2024-12-21, 1403/10/01**

Registration timing: **retrospective**

Last update: **2024-12-21, 1403/10/01**

Update count: **0**

##### Registration date

2024-12-21, 1403/10/01

##### Registrant information

##### Name

Imran Ahmad Khan

##### Name of organization / entity

Muhammad Nawaz Shareef University of Agriculture, Multan

##### Country

Pakistan

##### Phone

+92 333 6120602

##### Email address

imran.ahmad@mnsuam.edu.pk

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2024-01-07, 1402/10/17

##### Expected recruitment end date

2024-04-07, 1403/01/19

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty  
**Trial completion date**  
empty

**Scientific title**  
Fish Oil Supplementation vs Knee Strengthening Exercises: A Comparative Study in Knee Osteoarthritis Management

**Public title**  
Fish Oil Supplementation vs Knee Strengthening Exercises: Knee Osteoarthritis Management

**Purpose**  
Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**  
Clinically diagnosed knee OA (Grade II-III, based on the Kellgren-Lawrence scale). - - Moderate pain severity Able to perform exercises and follow instructions

**Exclusion criteria:**  
Severe OA requiring surgery Allergies to fish oil or vegetarian individuals unwilling to consume fish products. Current use of omega-3 supplements or structured physical therapy for OA Significant comorbid conditions (e.g., rheumatoid arthritis, uncontrolled diabetes, cardiovascular diseases).

**Age**  
From **40 years** old to **60 years** old

**Gender**  
Both

**Phase**  
1

**Groups that have been masked**

- Outcome assessor
- Data analyser

**Sample size**  
Target sample size: **95**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
This randomization will be done by computer-generated numbers to ensure fairness. Medications will be given in numbered white boxes, each with a unique medication number. The treatment codes will be kept by the principal investigator.

**Blinding (investigator's opinion)**  
Double blinded

**Blinding description**  
Statistical analyser and outcome assessor will be kept blind so that the result obtained will be without biasness.

**Placebo**  
Not used

**Assignment**  
Parallel

**Other design features**

**Secondary Ids**

empty

**Ethics committees**

**1**

**Ethics committee**

**Name of ethics committee**  
The Institutional Ethical Committee of Muhammad Institute of Medical and Allied Sciences

**Street address**  
Bosan Road

**City**  
Multan

**Postal code**  
66000

**Approval date**  
2024-12-03, 1403/09/13

**Ethics committee reference number**  
MIMAS/67/26/IAK

**Health conditions studied**

**1**

**Description of health condition studied**  
Knee osteoarthritis

**ICD-10 code**  
M19.0

**ICD-10 code description**  
Primary osteoarthritis of other joints

**Primary outcomes**

**1**

**Description**  
Osteophytes

**Timepoint**  
12 weeks

**Method of measurement**  
Knee Xray

**2**

**Description**  
Pain, stiffness and ADLs

**Timepoint**  
12 weeks

**Method of measurement**  
NPRS and WOMAC Scale

**3**

**Description**  
Knee ROM

**Timepoint**  
12 Weeks

**Method of measurement**  
Goniometry

**Secondary outcomes**

## 1

### **Description**

Knee injury outcome

### **Timepoint**

12 weeks

### **Method of measurement**

Knee injury outcome score (KOOS)

## 2

### **Description**

Quality of life

### **Timepoint**

12 weeks

### **Method of measurement**

SF-36

## **Intervention groups**

### 1

#### **Description**

Group A: Fish Oil Supplementation, Dosage: 1,000 mg fish oil capsule taken twice daily for 12 weeks.

#### **Category**

Treatment - Drugs

### 2

#### **Description**

Group B: Strengthening Exercises, Supervised physiotherapy sessions three times a week for the first four weeks., Home-based exercises with detailed written and visual instructions for the remaining eight weeks. - Exercise program:Isometric Contractions:Static quadriceps contraction held for 5-10 seconds, repeated 10-15 times per session. Isotonic Strengthening:\*\* Partial squats and leg raises with incremental resistance over time.

#### **Category**

Rehabilitation

### 3

#### **Description**

Group C: Combined Intervention, Participants will receive both fish oil supplementation and strengthening exercises as per the respective protocols.

#### **Category**

Treatment - Other

## **Recruitment centers**

### 1

#### **Recruitment center**

##### **Name of recruitment center**

Muhammad Rehabilitation Centre, Multan

##### **Full name of responsible person**

Komal Ammar Bukhari

##### **Street address**

Bosan Road

#### **City**

Multan

#### **Postal code**

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#### **Phone**

+92 312 6827130

#### **Email**

komalbukhari608@gmail.com

## **Sponsors / Funding sources**

### 1

#### **Sponsor**

##### **Name of organization / entity**

Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan

##### **Full name of responsible person**

Qurat-UI-Ain

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Bosan Road

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##### **Phone**

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##### **Email**

qain0635@gmail.com

#### **Grant name**

Student Fund

#### **Grant code / Reference number**

MIMAS/09/10/Amna

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

Yes

#### **Title of funding source**

Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan

#### **Proportion provided by this source**

70

#### **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**

Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan.

#### **Full name of responsible person**

Maliha Khalid Khan

#### **Position**

med\_doctor

#### **Latest degree**

Medical doctor  
**Other areas of specialty/work**  
Physiotherapy  
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## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**  
Muhammad Nawaz Sharif University of Agriculture  
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**Full name of responsible person**  
Imran Ahmad Khan  
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Coordinator Department of Pharmacy  
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## Person responsible for updating data

### Contact

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**Full name of responsible person**  
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**Other areas of specialty/work**  
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**Phone**  
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**Email**  
iftikharamna61@gmail.com

## 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

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

### Clinical Study Report

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

### Analytic Code

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

### Data Dictionary

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