# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

07 Nov 2026

# The effect of vitamin D and probiotic co-supplementation on Brain derived neurotrophic factor (BDNF), High sensitive C reactive protein (hs-CRP) ,depressive disorder ,quality of life and sleep in nurses with depressive disorder ; A double-blind randomized controlled clinical trial.

## Protocol summary

**Study aim**

1- Determining and comparing the average serum vitamin D levels in the intervention and control groups before and after the study 2- Determining and comparing Brain derived neurotrophic factor (BDNF) levels in the intervention and control groups, before and after the study. 3- Determining and comparing the mean High sensitive C reactive protein (hs-CRP) in the intervention and control groups, before and after the study. 4- Determining and comparing the average depression score in the intervention and control groups, before and after the study. 5- Determining and comparing the average quality of life score in the intervention and control groups, before and after the study. 6- Determining and comparing the average sleep quality score in the intervention and control groups, before and after the study.

**Design**

double-blind randomized controlled clinical trial

**Settings and conduct**

At Amir al-Momenin Hospital in Shahreza, for 12 weeks, the intervention group received a daily Biozen capsule from Tekgene Pharma Company after lunch or dinner, and the control group received a placebo that was similar in shape, smell, and taste to the intervention group's supplement and contained maltodextrin and was from the same company.

**Participants/Inclusion and exclusion criteria**

Inclusion criteria: People with mild to severe depressive disorder. People who agree to participate in the study. Age 20-55 years. Exclusion criteria: Following a specific diet (vegetarian diet affecting intestinal flora)

**Intervention groups**

70 nurses with depressive disorder were randomly divided into two intervention groups (receiving one Biozen D supplement daily) and a control group (receiving a placebo containing maltodextrin).

**Main outcome variables**

Serum vitamin D concentration Depression score Quality of life score Sleep quality score Serum BDNF level Serum High sensitive C reactive protein (hs-CRP) level

## General information

**Reason for update**

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT20180818040827N7**
Registration date: **2025-09-08, 1404/06/17**
Registration timing: **retrospective**

Last update: **2025-09-08, 1404/06/17**
Update count: **0**

**Registration date**

2025-09-08, 1404/06/17

**Registrant information**

**Name**

Reza Amnai

**Name of organization / entity**

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**Recruitment status**

**Recruitment complete**

**Funding source**

**Expected recruitment start date**

2025-08-10, 1404/05/19

**Expected recruitment end date**
2025-08-10, 1404/05/19
**Actual recruitment start date**
empty
**Actual recruitment end date**
empty
**Trial completion date**
empty

**Scientific title**
The effect of vitamin D and probiotic co-supplementation on Brain derived neurotrophic factor (BDNF), High sensitive C reactive protein (hs-CRP) ,depressive disorder ,quality of life and sleep in nurses with depressive disorder ; A double-blind randomized controlled clinical trial.

**Public title**
The investigation effect of vitamin D and probiotic co-supplementation on depressive disorder
**Purpose**
Treatment
**Inclusion/Exclusion criteria**
**Inclusion criteria:**
People with mild to severe depressive disorder Individuals who agree to participate in the study Age 20 -55 years
**Exclusion criteria:**
Following specific diets (vegetarian diet affects intestinal flora)
**Age**
From **20 years** old to **55 years** old
**Gender**
Both

**Phase**
1-2
**Groups that have been masked**

- Participant
- Care provider
- Investigator

**Sample size**
Target sample size: **70**
**Randomization (investigator's opinion)**
Randomized
**Randomization description**
In this study, 70 nurses working in hospitals and having mild to severe depressive disorder scores according to the Beck depression inventory questionnaire (BDI) and according to the inclusion criteria will be included in the study. Individuals will be randomly divided into 2 groups (intervention and control). The randomization method will be performed using Stratified block randomization using blocks of 6 based on the gender variable. To allocate the intervention in the above-mentioned manner, the reliable website https://www.sealedenvelope.com/simple_randomiser/v1/lists will be used. It is worth noting that participants and outcome assessors will not be aware of the patient grouping and will be blinded to it.
**Blinding (investigator's opinion)**
Double blinded
**Blinding description**
To allocate the intervention in the above-mentioned manner, the reliable website https://www.sealedenvelope.com/simple_randomiser/v1/lists will be used. It is worth noting that participants and outcome assessors will not be aware of the patient grouping and will be blinded to it
**Placebo**
Used
**Assignment**
Parallel
**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**
**Name of ethics committee**
Ehics commitee of Isfahan University of Medical Sciences
**Street address**
Pasdaran Street, Amir-ol-Momenin Hospital, Shahreza
**City**
Shahreza
**Province**
Isfehan
**Postal code**
8617743111
**Approval date**
2025-06-06, 1404/03/16
**Ethics committee reference number**
IR.MUI.PHANUT.REC.1404.028

## Health conditions studied

### 1

**Description of health condition studied**
Depressive disorder
**ICD-10 code**
F33.0
**ICD-10 code description**
Major depressive disorder, recurrent, mild

### 2

**Description of health condition studied**
Depressive disorder
**ICD-10 code**
F33.1
**ICD-10 code description**
Major depressive disorder, recurrent, moderate

### 3

**Description of health condition studied**
Depressive disorder

**ICD-10 code**
F33.2
**ICD-10 code description**
Major depressive disorder, recurrent severe without psychotic features

## Primary outcomes

### 1

**Description**
Determining and comparing the average serum vitamin D levels in the intervention and control groups before and after the study.
**Timepoint**
Before the start of the intervention and at the end of the intervention (after week 12)
**Method of measurement**
Assay kit

## Secondary outcomes

### 1

**Description**
Determination and comparison of Brain derived neurotrophic factor (BDNF) levels in the intervention and control groups, before and after the study.
**Timepoint**
Before and after intervention
**Method of measurement**
Assay kit

### 2

**Description**
Determining and comparing the mean High sensitive C reactive protein (hs-CRP) in the intervention and control groups, before and after the study.
**Timepoint**
Before and after intervention
**Method of measurement**
Assay kit

### 3

**Description**
Determining and comparing the average depression score in the intervention and control groups, before and after the study.
**Timepoint**
Before and after intervention
**Method of measurement**
Beck depression inventory questionnaire (BDI)

### 4

**Description**
Determining and comparing the average quality of life score in the intervention and control groups, before and after the study.
**Timepoint**
Before and after intervention
**Method of measurement**
World Health Organization 26-item Quality of Life Questionnaire

### 5

**Description**
Determining and comparing the average sleep quality score in the intervention and control groups, before and after the study.
**Timepoint**
Before and after intervention
**Method of measurement**
Pittsburgh Sleep Quality Questionnaire

## Intervention groups

### 1

**Description**
Intervention group: This group received a Biozen supplement containing 400IU of vitamin D and a probiotic containing 109×2CFU of each of the species Bacillus coagulans, Lactobacillus rhamnosus, Lactobacillus reuteri, Lactobacillus paracasei, Lactobacillus acidophilus, and Bifidobacterium bifidum for 12 weeks.
**Category**
Treatment - Drugs

### 2

**Description**
Control group: This group receives a placebo supplement of Biozen Which contains maltodextrin for 12 weeks.
**Category**
Treatment - Drugs

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Amir-Al-Momenin Hospital, Shahreza
**Full name of responsible person**
Dr. Marzieh Taghvaei
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## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Esfahan University of Medical Sciences
**Full name of responsible person**
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**Grant name**
538940000
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Esfahan University of Medical Sciences
**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**
Esfahan University of Medical Sciences
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Yeganeh Hoveyda
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Master's student
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## Person responsible for updating data

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## 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**
Yes - There is a plan to make this available
**Data Dictionary**
Yes - There is a plan to make this available

**Title and more details about the data/document**
Magor part of information will be available for population
**When the data will become available and for how long**
12 months after publication
**To whom data/document is available**
Available for people working in academic institutions
**Under which criteria data/document could be used**
To conduct similar studies
**From where data/document is obtainable**
r_amani@nutr.mui.ac.ir
**What processes are involved for a request to access data/document**
The data will be sent as soon as possible , after receiving the reuest
**Comments**