Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Effects of acute stress on declarative memory reconsolidation across menstrual cycle in healthy women

Protocol summary

Summary

The purpose of this study is to examine the effects of acute stress on declarative memory reconsolidation during the menstrual cycle in healthy woman. Fifty-six healthy female students of Semnan University of Medical Sciences with naturally menstrual cycle participate in this placebo-controlled, crossover study. Participants randomly assign to eight groups according to the factors assignment (High Progesterone vs. Low Progesterone) and (Reactivation vs. No Reactivation) and (Stress vs. Control): 1. High Progesterone /Reactivation/Stress 2. High Progesterone/Reactivation/Control 3. High Progesterone/No Reactivation/Stress 4. High Progesterone/No Reactivation/Control 5. Low Progesterone/Reactivation/Stress 6. Low Progesterone/Reactivation/Control 7. Low Progesterone/No Reactivation/Stress 8. Low Progesterone/No Reactivation/Control Participants will test on three consecutive days; day 1: Learning; day 2: Memory Reactivation; and day 3: Retrieval and Recognition tests. After 2 months, participants return for days 4, 5, and 6, during which the same procedures will repeat with the alternate condition (Stress or Control) counterbalanced among participants. Menstrual status for each participant will determine by self-report and salivary progesterone levels that verifying to be within the expected range for the reported phase. 28 participants are in the follicular phase (Low progesterone), and 28 in the mid-luteal phase (High progesterone). In the stress groups, participants expose to the socially evaluated cold pressor test (SECPT) on day 2, after reactivation or no reactivation according to the corresponding group. Blood pressure and salivary cortisol will be measured to verify the efficacy of the SECPT.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014052515975N1**
Registration date: **2014-06-17, 1393/03/27**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2014-06-17, 1393/03/27

Registrant information

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Recruitment status

Recruitment complete

Funding source

Semnan University of Medical Sciences

Expected recruitment start date

2013-12-22, 1392/10/01

Expected recruitment end date

2014-01-21, 1392/11/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of acute stress on declarative memory reconsolidation across menstrual cycle in healthy women

Public title
Effects of acute stress on declarative memory reconsolidation across menstrual cycle
Purpose
Basic scienece
Inclusion/Exclusion criteria
Inclusion Criteria: Age between 18 and 25 years; Body mass index (BMI) between 19 and 26 kg/m2; No smoking; No addiction to narcotic substance and alcohol; No reported history of disease or psychiatric problems; No medication intake; No use of psychotropic drugs; No history of disease or abnormal laboratory test; Not being in stressful situations; Having a positive mood (According to PANAS); Naturally cycling with menstrual cycles between 24 and 32 days; Consent to participate in the study. Exclusion Criteria: Being in stressful situations or disease during study.
Age
From **18 years** old to **25 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **56**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Crossover
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Semnan University of Medical Sciences
Street address
Semnan University of Medical Sciences, Semnan, Iran
City
Semnan
Postal code
Approval date
2013-11-27, 1392/09/06
Ethics committee reference number
92.372172

Health conditions studied

1

Description of health condition studied
Stress
ICD-10 code
Z73.3
ICD-10 code description
Stress, not elsewhere classified

Primary outcomes

1

Description
Memory retrieval
Timepoint
Day 3
Method of measurement
Number of recalled pictures

Secondary outcomes

1

Description
Salivary cortisol level
Timepoint
S1: Day 2, Before SECPT or Control condition (Base); S2: Day 2, 10 minutes after SECPT or Control ; S3: Day 2, 25 minutes after SECPT or Control; S4: Day 2, 60 minutes after SECPT or Control; S5: Day 3, Before retrieval test.
Method of measurement
Immunoassay- IBL kit (IBL Immuno Biological Laboratories, Hamburg, Germany)

Intervention groups

1

Description
In stress condition, participants expose to the socially evaluated cold pressor test (SECPT). Subjects will ask to immerse their right hand up to and including the wrist into ice water (0-2 C). Subjects would be asking to remain immersed for 3 min, but tell that they are free to pull out at any time without penalty. During hand immersion they will videotaping, ask to look into the video camera and tell that these video recordings would be analyzed later for facial expression. The SECPT has been shown to elicit significant increases in cortisol and autonomic activity. In the control condition, individuals immerse their right hand up to and including the wrist for 3 min into warm water (35—37 ºC). They are not videotape.
Category
Other

2

Description
Memory Task. Day1: Learning; On day 1, participants learn 30 pictures include ten positive pictures (such as Ice cream), ten negative pictures (example Injury) and ten neutral pictures(glass). Day2: Reactivation; On day 2, participants in reactivation group would be asked to remind the pictures they had learned on the previous day. In no reactivation group, participants reading newspaper. Immediately, they are challenging with Stress or Control. Day3: Retrieval and Recognition; On day 3, participants would be asked to write down the pictures they had learned on day 1. Cued recall will be assessed immediately after free recall. After 2 months, participants return for days 4, 5, and 6, during which the same procedures with the alternate condition (Stress or Control).

Category
Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Physiology Research Center, Semnan University of Medical Sciences

Full name of responsible person
Dr. Mohsen Pourazizi

Street address
Semnan University of Medical Sciences, Semnan

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Semnan University of Medical Sciences, Semnan, Iran

Full name of responsible person
Dr. Raheb Ghorbani

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Research and Technology Deputy of Semnan University of Medical Sciences, Basij Boulevard, Semnan, Iran

City
Semnan

Grant name

Grant code / Reference number

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

Title of funding source
Semnan University of Medical Sciences, Semnan, Iran

Proportion provided by this source
100

Public or private sector
empty

Domestic or foreign origin
empty

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
empty

Person responsible for general inquiries

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty