

# INPLASY

## Exercise and quality of life in menopausal women. A systematic review

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Arronte-Rosales, A<sup>1</sup>; Sánchez-Rodríguez, MA<sup>2</sup>; Zacarías-Flores, M<sup>3</sup>; Castrejón-Delgado, L<sup>4</sup>; Mendoza-Núñez, VM<sup>5</sup>.

### Corresponding author:

Martha A. Sánchez-Rodríguez

masanrod@comunidad.unam.mx

### Author Affiliation:

Gerontology Research Unit.  
Facultad de Estudios Superiores  
Zaragoza, Universidad Nacional  
Autónoma de México.

### ADMINISTRATIVE INFORMATION

**Support** - DGAPA-UNAM PAPIME PE210523.

**Review Stage at time of this submission** - Formal screening of search results against eligibility criteria.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202380040

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 August 2023 and was last updated on 10 August 2023.

## INTRODUCTION

**Review question / Objective** Which is the effect of physical exercise on healthy menopausal and postmenopausal women's quality of life? The aim of this review is to present a synthesis of knowledge about the effect of the different types of programmed exercise on healthy menopausal and postmenopausal women's quality of life. This PICO strategy was used: P: menopausal or postmenopausal women; I: physical exercise (type, duration, frequency); C: non exercise; O: quality of life evaluated with a known and previously validate questionnaire.

**Rationale** Menopause is a stage on the woman's life with several biological, psychological, and social changes that cause discomfort in most of them. The biological changes due to estrogen depletion, such as, vasomotor symptoms like hot

flashes, urogenital discomfort, and insomnia, seem to be the beginning of the transition along with other alterations. This situation may affect women's quality of life. Different treatments have been proposed to relieve the physical symptoms, including hormonal, herbal and psychological therapies, as well as physical exercise. The effectivity of physical exercise against menopausal symptoms is controversial due to the diversity of activities that evaluate it including duration, frequency, and performance the exercise. Some quality of life's questionnaires (instruments) are more general, and others are specific to different symptoms or diseases, with the aim to obtain both qualitative and quantitative information, which have generated inconsistent results. Different authors use the terms physical exercise and physical activity as synonymous. Several studies use different types of exercise, time of

performance and frequency; therefore, the results can cause confusion.

Although a systematic review with meta-analysis has been published in 2020 about this topic, this does not include journals indexed in Ibero-American scientific databases such as SciELO and LILACS, as well as gray literature.

**Condition being studied** If we considerate exercise as a planned, structured, and repetitive physical activity with the objective to maintain or improve the physical condition, it is known that physical exercise has positive effect on health, but it is dependent of type and duration of the activity performed. In postmenopausal women, the physical exercise has been included in some treatments to reduce their symptoms and improve their quality of life. This positive effect has been demonstrated on several pathologies associated to postmenopausal stage like osteoporosis and fracture risk, which diminish; although the evidence is inconsistent when acute symptoms, such as, hot flashes, sleep- and mood disturbances, were studied. These symptoms can modify the women's quality of life.

It is necessary to clarify if the physical exercise improve the quality of life and these symptoms, because there are women that do not want to use hormonal therapy and/or have contraindications, and exercise can be an alternative. This review provides a synthesis of knowledge about the effect of the physical exercise on healthy menopausal and postmenopausal women's quality of life from clinical trials that evaluate the impact on quality of life and/or acute menopausal symptoms. The intervention can be both, aerobic or anaerobic exercise, and the quality of life evaluate with a known and validate questionnaire.

## METHODS

**Search strategy** Search terms for PubMed, Scopus and Web of Science were: (menopause OR "postmenopausal women" OR "climacteric women") AND exercise AND "quality of life"; for SciELO and LILACS menopause AND exercise AND quality of life; for TESIUNAM menopausia AND ejercicio AND calidad de vida.

**Participant or population** Middle-aged menopausal or postmenopausal women, without chronic noncommunicable diseases, such as, cancer, osteoporosis, osteoarthritis, diabetes mellitus, or urinary incontinence.

**Intervention** All types of exercise programs that were carried out to improve quality of life and/or acute menopausal symptoms.

**Comparator** Control group without intervention.

**Study designs to be included** Randomized and non-randomized clinical trials.

**Eligibility criteria** Menopausal/postmenopausal women without chronic noncommunicable diseases; programed exercise, and their impact on quality of life; known and validate questionnaires for the quality of life's evaluation.

**Information sources** A systematic search will be performed of scientific data on five databases: PubMed, Web of Science, Scopus, SciELO and LILACS. Also, TESIUNAM as gray literature database.

**Main outcome(s)** Effect on quality of life and/or acute menopausal symptoms (hot flashes, mood disturbances, sleep disturbances). As effect measure, we will use the total score of the quality of life questionnaire and frequency of symptoms, before-after the intervention.

**Additional outcome(s)** None.

**Data management** For this review, studies will be classified according to the exercise performed, quality of life questionnaire used, and menopausal symptoms evaluated. Additional subgroups will be added, if necessary, to create similar activity groups and therefore be able to estimate the effect. Two reviewers will participate on the study selection to decide their inclusion. When there is discrepancy, a third party will intervene.

**Quality assessment / Risk of bias analysis** Cochrane bias risk tools will be used to assess quality (Rob-2 and Robins-1).

**Strategy of data synthesis** A systematic review chart will be elaborated, considering the elements of the achromic PICO. Software Revman version 5.4.1 will be used to create the possibility to carry out a meta-analysis and a model of random effects to estimate the effect size.

**Subgroup analysis** Subgroup analysis will be done to identify the causes of effect variation among the different instruments used to quality of life's assessment, as well as the symptoms evaluated.

**Sensitivity analysis** Sensitivity analysis will be performed if the combined result has a high risk of heterogeneity.

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**Language restriction** Only we will be considered for inclusion studies randomized and non-randomized clinical trials published in English, Portuguese, and Spanish.

**Country(ies) involved** Mexico.

**Keywords** menopausal women, postmenopausal women, climacteric women, quality of life, exercise.

**Dissemination plans** At the end of the review, it will be published in a peer reviewed journal. In addition, results will be presented in a disclosure event.

#### **Contributions of each author**

Author 1 - Alicia Arronte-Rosales - Author contribution: review conception, review design, study selection, data collection, data management, data analysis, data interpretation, and writing-protocol.

Email: arronteposgrado@gmail.com

Author 2 - Martha A. Sánchez-Rodríguez - The author is the review' coordinator, in addition she has the activities of study selection, data collection, data analysis, data interpretation, and writing-original draft.

Email: masanrod@comunidad.unam.mx

Author 3 - Mariano Zacarías-Flores - The author contributes as reviewer of selected articles, and in data interpretation, writing-review and editing final manuscript.

Email: mzacariasf@yahoo.com

Author 4 - Lizett Castrejón-Delgado - The author contributed to the the risk of bias assessment strategy, results analysis and data interpretation; also she resolves the discrepancies.

Email: lizettcastrejon@hotmail.com

Author 5 - Víctor Manuel Mendoza-Núñez - The author is the supervisor of the review, in addition he participates in data interpretation, writing-review and editing the final manuscript.

Email: mendovic@unam.mx