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Application of Exercise Snacks for Improving Health in Women: A Scoping Review

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ADMINISTRATIVE INFORMATION**Support** - No financial support.**Review Stage at time of this submission** - Formal screening of search results against eligibility criteria.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202550038**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 May 2025 and was last updated on 15 May 2025.**INTRODUCTION**

Review question / Objective This scoping review aimed to provide an overview of the exercise snacks studies that improve health in women, to clarify its practical applications and future research directions which still lacking.

Background The fast pace of modern society lead to people work with intense pressure and a sedentary lifestyle. In recent years, Physical inactivity and sedentary behavior have become major global public health challenges. Surveys show that the global cost of diseases taken due to lack of physical activity has reached approximately \$4.76 billion per year. To cope with this challenging situation, public health organisations have made numerous efforts. However, traditional exercise often requires a large amount of time, which is often difficult for people to continue due to their busy lives and work schedules. There is a need for some new forms of exercise as physical activity supplements. Exercise Snacks are a short,

fragmented, low-risk, contextual and personalised exercise to meet the diverse exercise needs of different populations. The concept of “exercise snacks” was first proposed by Dr Howard Hartley who consider that sometimes we may not be able to follow a basic fitness plan and maintain a basic exercise routine due to work, family demands or travel, and exercise snacks are a great way to maintain good health[6]. Recently, a study has released the world's first expert consensus on short bouts of accumulated exercise, which systematically defines “exercise snack” as a physical practice performed multiple times per day (≥ 2) in any exercise mode/type, intensity, with each durations (≤ 10 min) and intervals ≥ 30 min or integrated into daily life. Exercise Snacks are a short, fragmented, low-risk, contextual exercise to meet the diverse exercise needs of different populations. In this research field, there are some reviews have evaluated on mental and physical effects of exercise snacks, such as adults and the elderly. However, there is still lack of reviews analysing exercise snacks in subdivided

populations. For example, the research reviews on female groups. Due to the stereotypical roles of women in many societies and cultures, girls' physical activity declines from puberty onwards, and the pressures of motherhood, family and childcare fragment the practice of sport, making it difficult for women to engage in sport regularly, and it also difficult to balance sport with their daily life. Exercise snacks for women is important to support and promote women's physical participation. This study provides a Scoping review of the use of exercise snacks in women. We aimed to identify possible gaps in the literature related to the use of exercise snacks in women health promoting.

Rationale In this research field, there are some reviews have evaluated on mental and physical effects of exercise snacks, such as adults and the elderly. However, there is still lack of reviews analysing exercise snacks in subdivided populations. For example, the research reviews on female groups. Due to the stereotypical roles of women in many societies and cultures, girls' physical activity declines from puberty onwards, and the pressures of motherhood, family and childcare fragment the practice of sport, making it difficult for women to engage in sport regularly, and it also difficult to balance sport with their daily life. Exercise snacks for women is important to support and promote women's physical participation. A scoping review is a synthesis of evidence used to systematically summarise an area of research that has not yet been comprehensively reviewed. This study provides a Scoping review of the use of exercise snacks in women. We aimed to identify possible gaps in the literature related to the use of exercise snacks in women health promoting.

METHODS

Strategy of data synthesis Our search strategy aimed to locate both published and ongoing studies. A literature search for studies was conducted in Pubmed and Web of science. The search covered articles published from inception until May 1, 2025 and was screened by two independent reviewers. The search terms used are detailed as below and were combined with the Boolean operator AND. This search strategy was adapted for each included database. This resulted in the following search query: ("Exercise snack" OR "snacktivity" OR "Exercise snacking" OR "movement snack" OR "Strength snacks" OR "movement breaks" OR "active break" OR "bicycling" OR "Short bouts exercise" OR "Sprint exercise snack" OR "Hombased exercise snacking"

OR "Stair-climbing Exercise" OR "Walking" OR "brisk walking") AND ("Women" OR "Female" OR "girl" OR "adult female" OR "lady").

Eligibility criteria Articles were included if they: (1) The subjects of the study were females, including of all age stages, such as adolescent girls, adult females, pregnant females, menopausal females and elderly female groups. It also includes women participants with different health characteristics, such as sedentary women and overweight women. (2) Use of 'exercise snacks' as an exercise intervention. (3) The outcome indicators point to a particular aspect of women's health, such as cardiovascular health, aerobic fitness, weight loss or mental health. (4) Literature in English. Includes articles, trial registries, study protocols, grey literature and conference literature.

Articles were excluded if they were: (1) Review studies, master's theses, books, etc; (2) Duplicate literature; (3) Withdrawn literature.

Source of evidence screening and selection

The literature screening process followed the Scoping review report specification checklist. Literature obtained from the search was imported into Endnote to remove duplicates and screened by two researchers based on inclusion and exclusion criteria. When disagreements arose, they were discussed with a third researcher and a decision was made on inclusion. 2 researchers independently extracted information from the literature.

Data management Information includes the authors of the articles, study characteristics (e.g. Type of study) participant characteristics (e.g. Eligibility criteria, age, BMI, etc). intervention characteristics (e.g. intervention intensity, intervention frequency, Exercise program length), control group characteristics, outcomes, etc. After identifying the study elements for inclusion, we created two new data extraction forms describing these elements.

Language restriction English.

Country(ies) involved China.

Keywords Exercise snacks ; Short bouts of accumulated exercise; Women Health; Scoping Review.

Contributions of each author

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