

## Citation

Chinelo Nsobundu, Oluwakemi Alonge, Sagar Jani, Margaret Foster, Mathew Smith, Marcia Ory. Yoga's impact on falls in adults 50 and older: a systematic review. PROSPERO 2019 CRD42019135747 Available from: [https://www.crd.york.ac.uk/prospERO/display\\_record.php?ID=CRD42019135747](https://www.crd.york.ac.uk/prospERO/display_record.php?ID=CRD42019135747)

## Review question

What is the impact or effect of yoga programs on fall and/or fear of falling related outcomes in adults 50 years of age and older?

## Searches

A comprehensive search was conducted via MEDLINE (Ovid), CINAHL, SPORTDiscus, and Embase. The search was conducted beginning February 14th, 2019. The search concluded in June 2019 and will be updated as necessary in 2020. The search strategy will include terms describing the population, and intervention. English-Language articles will be included only. The reference list and citations of included and relevant studies on this topic will be screened to identify further studies for potential inclusion.

The following search terms were used: yoga, falls, older adults, accidental, prevent, seniors and elderly.

## Types of study to be included

Inclusion Criteria:

- Any Quantitative study or mixed-methods study (with a quantitative component) can be included in the review.

Exclusion Criteria:

- Qualitative Studies, Review papers, commentaries/ letters to the editors, poster board presentations, protocols, secondary analysis papers, and abstracts are excluded from the review.

## Condition or domain being studied

Adults at least 50 years of age and older with a multitude of chronic conditions can gain health benefits from avoiding being physically inactive. One major sign/symptom of physical inactivity is falls which continue to threaten the health, independence, and quality of life of individuals. Yoga, a common complementary therapy, has shown to be an effective intervention in combating falls because it increases balance, flexibility, muscle strength, and range of motion enhancing proprioception or the senses we employ to perceive our position and movement of our body in space. Therefore, the goal of this review is to examine the effectiveness of yoga as an intervention in preventing falls among adults at least 50 years of age and older.

## Participants/population

Inclusion Criteria:

- Studies that possess an inclusion criteria (in their methods section) of participants at least 50 years or older. (i.e. participants included were 60 years or older, 70 years or older and etc.)

Exclusion Criteria:

- Articles that focus on adults possess an inclusion criteria of adult less than 50 years of age and older (i.e. if inclusion criteria possess adults at least 18 years and older)

## Intervention(s), exposure(s)

Inclusion Criteria:

- Yoga program (both postures & breathing)
- Yoga program offered face to face, group only (not online or telehealth programs). If combined group + home, then, can be included.

Exclusion Criteria:

- Interventions that are not yoga
- Intervention that is a combined exercise program (i.e. Tai Chi + Yoga, different physical activities, exercises, and etc.)
- Yoga Program but does not include postures (asanas)
- Yoga program but does not include breathing (pranayama)

**Comparator(s)/control**

Control Group that is usual care, no treatment, or waitlist controls will be included.

**Context**

Studies will not be excluded based on settings or locations. Studies to be included are English-Language written studies only.

**Main outcome(s)**

A minimum of 1 objective fall and/or fear of falling related outcome must be included in the study to be apart of the systematic review. These include balance, fall efficacy, gait speed, and mobility.

**Measures of effect**

These items are measured using the following instruments and/or tests. This is not an exhaustive list but examples can include the following:

1. Berg Balance Scale- 14 item instrument measuring static and dynamic balance. Scores range from 0-56 with higher scores indicating better balance and less fall risk.
2. Timed Up and Go (TUG) - assesses mobility. An older adult who takes more than 12 seconds to complete is at risk for falling.
3. Walking Speed Test - individuals walk without assistance for 6 or 10 meters and the time is measured. Assesses gait speed.
4. Modified Fall Efficacy Scale- 14-item activity questionnaire. Each item is measured on a 10- point scale with 0 indicating no confidence/ not sure at all while 10 indicating highest confidence. Higher scores reflect more confidence and decrease fear of falling.
5. One legged Balance Test- simple way of assessing balance impairment. Participant is instructed to stand on one leg and the number of seconds this participant remains in this position is recorded.

**Additional outcome(s)**

None

**Measures of effect**

Not applicable.

**Data extraction (selection and coding)**

A customized data extraction form for descriptive characteristics will be developed and pilot tested by the researchers. Descriptive data such as study, country/location of intervention, participants, study design, intervention strategy, control group, and fall outcome measures will be extracted from all included studies. The primary investigator will extract data from all included studies while the remaining two investigators will each extract half the number of all included studies. Authors of included studies will be contacted if additional information is needed to verify data extracted. Discrepancies will be resolved through discussions between the primary investigator and the remaining investigators.

### Risk of bias (quality) assessment

The Mixed Method Appraisal tool will be used to assess the quality of each study. This tool assesses the quality of five categories of studies such as qualitative research, randomized control trials, non-randomized studies, quantitative descriptive studies, and mixed-method studies. The categories of studies that will be appraised in this review are randomized control trials, non-randomized studies, and mixed-method studies. The MMAT tool will be embedded within the data extraction tool so that both the extraction and critical appraisal of an included study will occur simultaneously.

### Strategy for data synthesis

Due to the diversity of studies, a narrative descriptive synthesis of findings will be performed structured around the intervention characteristics, methodology, findings, and quality. We are not using individual participant data. A meta-analysis will not be performed due to differences in study methodology, interventions, measures, and lack of feasibility.

### Analysis of subgroups or subsets

None planned.

### Contact details for further information

Chinelo Nsobundu  
chanel\_nsobundu@yahoo.com

### Organisational affiliation of the review

Texas A&M University School of Public Health  
<https://public-health.tamu.edu/>

### Review team members and their organisational affiliations

Chinelo Nsobundu. Texas A&M University School of Public Health  
Oluwakemi Alonge. Texas A&M University School of Public Health  
Sagar Jani. Texas A&M University School of Public Health  
Margaret Foster. Texas A&M University  
Dr Mathew Smith. Texas A&M University School of Public Health  
Dr Marcia Ory. Texas A&M University School of Public Health

### Type and method of review

Intervention, Narrative synthesis, Systematic review

### Anticipated or actual start date

14 February 2019

### Anticipated completion date

31 May 2020

### Funding sources/sponsors

None

### Conflicts of interest

### Language

English

### Country

United States of America

### Stage of review

Review Ongoing

### Subject index terms status

Subject indexing assigned by CRD

### Subject index terms

Accidental Falls; Humans; Meditation; Recreation; Yoga

### Date of registration in PROSPERO

23 December 2019

### Date of first submission

31 May 2019

### Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	No
Risk of bias (quality) assessment	Yes	No
Data analysis	No	No

### Revision note

Revisions made in this updated record include: 1. Addition of Dr. Smith and Ory as review team members. 2. Removal of PubMed as a database. 3. Replacement of Modified Downs & Black as a critical appraisal tool with MMAT. 4. Notation of preliminary screenings, pilot of study screening and etc as "completed" with data extraction and risk of bias assessment noted as "started."

*The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.*

*The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.*

### Versions

23 December 2019

09 April 2020