Does Yoga Practice Improve Balance in Older Adults?

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Does Yoga Practice Improve Balance in Older Adults?

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Results

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Type of Yoga</th>
<th>Duration/Frequency of Yoga</th>
<th>Balance Outcome Measure(s)</th>
<th>Impact of Yoga on Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicket et al., 2015</td>
<td>Hatha with emphasis on backbending and balance movements</td>
<td>1 hour classes 2x/week for 8 weeks</td>
<td>Berg Balance Scale (BBS)</td>
<td>Significant (p&lt;0.05) improvement in BBS scores as compared to control</td>
</tr>
<tr>
<td>Sarvanakumar et al., 2014</td>
<td>Asanas, pranayama, yoga nidra</td>
<td>30 min classes 2x/week for 14 weeks</td>
<td>BBS, full incidence</td>
<td>Improved BBS and decrease in fall incidence after yoga, but not significant (p=0.496)</td>
</tr>
<tr>
<td>Meng et al., 2014</td>
<td>Vinyasa style</td>
<td>1 hour classes 2x/week for 12 weeks</td>
<td>Functional Reach Test (FRT), single leg stance (SLS), postural sway/dynamic posturography</td>
<td>Significant improvement in all outcome measures (p&lt;0.005)</td>
</tr>
<tr>
<td>Hakim et al., 2010</td>
<td>Not mentioned</td>
<td>6 weeks</td>
<td>SL5, Activities-Specific Balance Confidence Scale (ABC), Pullerton Advanced Balance Scale (FAB), Multidirectional Reach Test (MEDRT)</td>
<td>No significant improvement in SL5 or ABC</td>
</tr>
<tr>
<td>Tiedeman et al., 2013</td>
<td>iyengar</td>
<td>1 hour 2x/week and HEP 10-20 min poses 2x/week for 12 weeks</td>
<td>Standing balance portion of Short Physical Performance Battery (SPPB) and SLS</td>
<td>Significant improvement in balance scores for yoga group (p=0.04) and use leg stance eyes closed (p=0.02)</td>
</tr>
<tr>
<td>Ttumtum et al., 2011</td>
<td>Glennmore-Ageless Therapeutic Yoga Program</td>
<td>90 min 1x/week and HEP 30 min 3x/week; yoga DVD for 13 weeks</td>
<td>BBS</td>
<td>Statistically significant improvement (p&lt;0.003) for the Berg</td>
</tr>
<tr>
<td>Zettergren et al., 2011</td>
<td>Kripalu</td>
<td>80 min 2x/week for 8 weeks</td>
<td>BBS, ABC</td>
<td>Significant improvement for yoga group in Berg (p=0.002)</td>
</tr>
<tr>
<td>Schmid et al., 2010</td>
<td>Focus on balance postures</td>
<td>75 min 2x/week for 12 weeks</td>
<td>SLS</td>
<td>Static balance increased significantly (p&lt;0.05) but no change in dynamic balance. No significant change in fall incidence.</td>
</tr>
<tr>
<td>Chen et al., 2008</td>
<td>Silver yoga</td>
<td>3x/week, 70 minutes per session, for 4 weeks</td>
<td>SLS</td>
<td>SLS duration increased significantly by an average of 2.8s (p&lt;0.015)</td>
</tr>
<tr>
<td>Chen et al., 2010</td>
<td>Silver yoga</td>
<td>3x/week for 4 weeks; 70 minutes per session</td>
<td>SLS</td>
<td>Balance did not significantly improve (p&gt;0.05)</td>
</tr>
<tr>
<td>Carroll et al., 2013</td>
<td>Anusmara yoga</td>
<td>Participants who regularly participate in yoga (start date could have been up to 3 years ago)</td>
<td>Questionnaire of subjective improvement of balance and posture</td>
<td>Mean improvement: 88.8%; between 90-95% of participants reported improved balance</td>
</tr>
</tbody>
</table>

Methods

**Purpose & Hypothesis**

The purpose of this systematic review was to determine the effects of regular yoga programs on balance in older adults. We hypothesized that a regular yoga program would improve balance and consequently reduce fall risk in the older adult population.

**Background**

- Each year, nearly one-third of adults aged 65 years and older have an unexpected fall resulting in disability, decreased independence, and reduced quality of life.
- Evidence suggests that exercise programs which specifically challenge balance are the most effective at preventing falls.
- Participation in yoga as an alternative intervention strategy has become an emerging trend over the last several years, with an estimated 1 million older adults currently participating in the United States.
- Yoga has positive effects on balance, muscle strength, endurance, flexibility and gait, and it can also contribute to improvements in self-awareness, self-esteem, proprioception, and overall health.
- Yoga has the potential to improve balance, prevent falls, and reduce the fear of falling in the older adult population.
- Although there has been growing interest in yoga as an alternative therapy for improving balance and reducing fall risk in the older adult population, more research is needed to specifically link yoga to a reduction in fall risk.

**Purpose & Hypothesis**

The purpose of this systematic review was to determine the effects of regular yoga program on balance in older adults. We hypothesized that a regular yoga program would improve balance and consequently reduce fall risk in the older adult population.

**Methods**

**Search terms**

- Yoga
- Older adults

**Grading the evidence**

<table>
<thead>
<tr>
<th>Literature search of Ovid, Scopus, PubMed, and CINAHL in July 2015</th>
<th>Total: 669 articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 excluded based on title and abstract</td>
<td>Total: 34 articles</td>
</tr>
<tr>
<td>12 excluded based on title and abstract</td>
<td>Total: 12 articles</td>
</tr>
<tr>
<td>1 excluded because it was only a poster presentation</td>
<td>Total: 11 articles</td>
</tr>
</tbody>
</table>

**References**


**Future Research**

Yoga is an emerging alternative therapy which has been proven to have several physiological benefits. Future research is recommended in order to determine the following:

- Appropriate duration and length of a yoga program to achieve significant improvements on balance measures
- Effects of sound versus standing yoga on balance in the older adult population
- Effects of balance on a novice yoga practitioner compared to an expert practitioner
- Impact of yoga on strength, flexibility, cardiovascular and pulmonary health, mental health, and neurological conditions (e.g. multiple sclerosis, Alzheimer’s, Parkinson’s)

**Acknowledgements**

We would like to acknowledge the Department of Physical Therapy at Thomas Jefferson University for providing access to resources as well as contributing to the development of this systematic review of the literature. We would also like to thank Dr. Susan Duff for facilitating this research process and lending her knowledge and expertise.