Evidence base for exercise programs for older people still in the balance

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Good balance and mobility are essential to help you perform most activities involved in every-day life, as well as many recreational pursuits. Keeping your balance is a complex task, involving the co-ordination between a person's muscles and sensors which detect balance and are part of the nervous system. In older people many factors such as reduced muscle strength, stiff joints, delayed reaction times and changes in the sensory system all add up to reduce a person's ability to keep in balance.

A previously published Cochrane review indicated that regular exercise helps older people improve their balance and reduces their risk of falling. After adding 62 new studies to the pool of data, researchers say that while some useful ideas are emerging, there is still a need for high quality evidence that can determine which types of exercise are the most effective. The results have just been published in the *Cochrane Library*.

By examining 94 studies that involved a total of 9917 participants, researchers identified a list of different types of exercises that had been tested to improve balance. "The information has helped to shed more light on the different approaches to exercise that have been undertaken in studies to date," says lead author Prof Tracey Howe, who works in the School of Health & Life Sciences at Glasgow Caledonian University and is a Director of Glasgow City of Science.

The exercises programs they identified included one or more of the following activities:

- exercise that targeted a person's walking, balance and co-ordination
- strengthening exercises
- three-dimensional exercises, including Tai Chi, dance and yoga
- general physical activity such as walking or cycling
- computerized balance training that uses visual feedback
- exercise involving vibrating platforms

"Although the duration and frequency of these exercise programmes vary, in general the effective programmes ran three times a week for a duration of three months and involved exercises that challenged people's balance while they were standing," explains Howe. "Interestingly we found that walking and cycling generally do not improve balance, although they have many other beneficial effects."

The researchers found, however, that much of the evidence was of poor quality, and it was very difficult to combine the results from different pieces of work because of lack of consistency in the measurement instruments used to test balance. "If the research community identified a core group of balance outcomes that were used in all future studies, we would be in a much stronger position to combine individual studies and better understand of which type of exercise is the most effective to improve balance," says Howe.

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