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New Cochrane review assesses the benefits and harms of exercise for preventing falls in older people living in the community

一项评估运动对社区老年人预防跌伤的利弊的新 Cochrane 综述

New evidence published in the Cochrane Library today provides strong evidence that falls in people over sixty-years old can be prevented by exercise programmes.
近期，发表在 Cochrane 图书馆的新证据提供了强有力的证据，证明 60 岁以上的老年人跌伤可以通过运动计划来预防。

Falls are a leading cause of accidental or unintentional injury deaths worldwide. Older adults suffer the greatest number of fatal falls and over 37 million falls are severe enough to require medical attention each year.

跌伤是世界范围内意外或非故意伤害死亡的主要原因。老年人致命跌伤的次数最多，每年跌伤严重到需要就医的人数超过 3700 万。

A new Cochrane Review produced by a team comprising researchers from the University of Sydney in Australia and University of Oxford, UK, summarizes the results from 108 randomized controlled trials with 23,407 participants from across 25 countries. The average age of the participants in the studies was 76 years old and three quarters of them were women. Eighty-one of these trials compared exercise (all types) versus a control intervention (doing no exercise or minimal gentle exercise that is not thought to reduce falls) in people living independently at home, in retirement villages, or in sheltered accommodation.

由澳大利亚悉尼大学和英国牛津大学的研究人员组成的一个研究小组对来自 25 个国家的 23,407 名受试者进行的 108 次随机对照试验的结果进行了总结，形成了一项新的 Cochrane 系统综述。受试者的平均年龄为 76 岁，其中四分之三为女性。在这些试验中，有 81 项比较了独立生活在家中、养

老院或其他庇护住所的人的运动（所有类型）与对照干预（不运动或进行被认为不会减少跌伤的轻微运动）。

The review looked at two different ways of measuring falls. Firstly, they found that exercise reduces the number of falls over time by around a quarter (23% reduction). This means that if there were 850 falls among 1000 older people doing no fall-preventive exercise during one year, there would be 195 fewer falls among people who were undertaking fall-prevention exercise. They also found that exercise reduces the number of people experiencing one or more falls (number of fallers) by around a sixth (15% reduction). For example, if 480 out of 1000 people experienced one or more falls over one year, participating in exercise programmes would reduce the number of fallers by 72 people.
这项综述考察了跌伤的两种不同的测量方法。首先，他们发现运动可以减少四分之一（23%）的跌倒次数。这意味着，如果 1000 名老年人在一年内不进行预防运动，跌倒的人数为 850 人，那么进行预防运动，跌倒的人数将减少 195 人。他们还发现，运动能使有过一次或多次跌倒经历的人数（跌倒的人数）减少约六分之一（15%）。例如，如果 1000 人中有 480 人在一年内经历过一次或多次跌倒，参加运动计划将使跌倒的人数减少 72 人。

The review found that exercise programmes carried out in group classes or done at home prescribed by a health professional (such as a physiotherapist) or a trained exercise leader were effective. Exercises were mostly done while standing as this better enhances balance and the ability to do daily activities such as standing up from a low chair or climbing stairs. Some effective exercise programmes also used weights to make the exercises harder.
综述发现，由健康专业人士（例如物理治疗师）或训练有素的运动指挥，在团体课上或在家中进行的运动计划是有效的。运动大多是在站立的时候进行的，因为这样能更好地增强平衡感，也能提高日常活动的能力，比如从矮的椅子上站起来或爬楼梯。一些有效的运动计划也通过负重练习使运动效果更加稳固。

The results of the studies varied so the researchers assessed different types of exercise programmes to see how they compared. There is high certainty evidence that programmes that mainly involve balance and functional exercises reduce falls, while there was less certainty about programmes that include multiple exercise categories (most commonly balance and functional exercises plus resistance exercises). Tai Chi may also prevent falls but there is uncertain evidence on the effectiveness of resistance exercises (without balance and functional exercises) including dance or walking.
这些研究的结果各不相同，因此研究人员评估了不同类型的运动项目，看它们之间如何进行比较。有高质量证据表明，主要涉及平衡和功能运动的项目可以减少跌倒次数，而包括多种运动类别（最常见的是平衡训练和机能训练联合阻力运动）的项目则不是很确定。太极也可以防止摔倒，但目前尚无证据表明包括舞蹈或步行在内的阻力运动（不包括平衡训练和机能训练）是否有效。

The certainty of the evidence for the overall effect of exercise on preventing falls was high. However, the findings that exercise reduces fractures and the need for medical attention are less certain, reflecting in part the relatively small number of studies and participants for those outcomes.
运动对预防跌倒的总体效果的证据质量很高。然而，运动能减少骨折，以及对医疗照顾的需要程度还不太确定，反映出这些结果的研究和受试者相对较少。

The reporting of the side effects of exercise in the trials was limited but when side effects were reported they were usually not serious, such as joint or muscle pain; however, one trial reported a pelvic stress fracture.
在试验中，关于运动副作用的报告是有限的，但当报告了副作用时，通常是不严重的，如关节或肌肉疼痛；然而，有一项试验报告了骨盆应力性骨折。

Author, Professor Cathie Sherrington from The University of Sydney, Institute for Musculoskeletal Health 来自悉尼大学肌肉骨骼健康研究所的 Cathie Sherrington 教授说：

said: "This evidence helps build an even stronger picture that exercise can help prevent older people having falls. It also illustrates which types of exercise can be beneficial. It is well known that keeping active promotes good health but this review pinpoints which types of exercise are more likely to be effective for preventing falls."
"这一证据进一步证明，运动有助于预防老年人跌倒。它还说明了哪些类型的运动是有益的。众所周知，保持运动能促进身体健康，但这项研究指出了哪种运动更有可能预防跌倒。"

"More work is needed to establish the impact of exercise on fall-related fractures and falls requiring medical attention because such falls have major impacts for the individual and are particularly costly to health systems. Further research is also required to establish the effectiveness of fall prevention programmes in emerging economies where the burden of falls is increasing more rapidly than in developed countries due to rapidly ageing populations."
"未来还需要更多的研究来确定运动对与跌倒有关的骨折和跌倒的影响，这需要医疗界的关注，因为这种跌倒对个人有很大的影响，对卫生系统的成本尤其高昂。还需要进行进一步研究来确定在新兴经济体中预防跌倒方案的有效性，由于人口迅速老龄化，这些国家的跌伤负担比发达国家增加得更快。"

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Editor's notes:
编者按：

Two related Cochrane reviews have been previously published on this subject Gillespie 2012 and Hopewell 2018.

Cochrane 的两项相关综述此前分别发表于 Gillespie 2012 和 Hopewell 2018。

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