

# CENTRAL SYDNEY TAI CHI TRIAL : METHODOLOGY

*Alexander Voukelatos and Andrew Metcalfe*

*Health Promotion Unit*

*Central Sydney Area Health Service*

Falls are a significant health risk for older people, and can result in fractures that, with increasing age, can lead to medical and social complications, which can further result in a decrease in quality of life.

In NSW, demand on health resources due to injuries resulting from falls in older people is increasing. According to population growth predictions it is estimated that by 2051, in NSW approximately four 200-bed hospitals would have to be built just to cope with fall injuries in older people.<sup>1</sup>

More than 400 individual risk factors for falls have been identified in the research literature.<sup>2,3,4</sup> The principal risk factors are: impaired balance; fear of falling; and lack of physical activity.

There have been several studies that have investigated the effects of exercise on various risk factors. These have demonstrated improvements in balance, functional capacity, and a reduction in fear of falling. In particular, Tai Chi has been shown to be effective in not only addressing risk factors, such as balance and fear of falling, but also in reducing the number of falls experienced by older people.<sup>5</sup> However, there are few studies that have examined Tai Chi as a falls prevention strategy, and there are none set in an Australian community context. Previous studies have typically used hospital out-patients as subjects and, as they provided free classes more than once a week, failed to replicate 'real world' conditions.

The goal of the *Central Sydney Tai Chi Trial* is to investigate the effectiveness of a community-based Tai Chi program for people aged over 60 years, in increasing the time to their first fall and improving their balance. Specifically, the objectives of the study are to demonstrate the effect of the 16-week Tai Chi program on:

- time to first fall after commencing the program;
- the average number of falls over six months;
- balance after 16 weeks of Tai Chi;
- levels of the fear of falling;

- functionality.

The study design is a randomised control trial and will run over two-and-a-half years. Subjects are randomly allocated to either an initial-intervention group or a waiting-list control group. The intervention consists of 16 weeks of Tai Chi classes of one one-hour session per week. Falls are monitored for both groups by means of a six-month self-reported falls calendar. Participants return a calendar each month to the research team, which indicated the days they had fallen in that month. Recruitment of subjects is via a social marketing campaign, using local and community newspapers as well as promotion to community agents (such as general practitioners, pharmacists, allied health workers), libraries, and local clubs.

There are currently about 16 classes in progress and their location is distributed throughout the inner western and southern suburbs of Sydney. It is anticipated that, as part of this study, a further 30 classes will be started over the next two years. Preliminary results should be available by February 2004.

The *Central Sydney Tai Chi Trial* is funded by the NSW Department of Health's Health Promotion Research Demonstration Grants Scheme.

## REFERENCES

1. Moller J. *Changing resource demands related to fall injury in an ageing population*. Sydney, NSW Department of Health, Injury Prevention Policy Unit, 2000.
2. Brown AP. Reducing falls in elderly people: A review of exercise interventions. *Physiotherapy and Practice* 1999; 15: 59-68.
3. Resnick B. Falls in a Community of Older Adults: Putting Research into Practice. *Clinical Nursing Research* 1999; 8(3): 251-266.
4. Tinetti M, Speechley M, Ginter S. Risk factors for falls among elderly persons living in the community. *New Engl J Med* 1988; 319: 1701-1707.
5. Wolf SL, Barnhart HX, Kutner NG, McNeely E, Coogley C, Xu T, and the Atlanta FICS IT Group. Reducing frailty and falls in older persons: An investigation of Tai Chi and computerized balance training. *J Am Geriatr Soc* 1996; 44(5): 489-497. ☒