



SAFE Research Publication Update

Dr. Becca Jordre, the physical therapist from the University of South Dakota who has been conducting the Senior Athlete Fitness Exam (SAFE) screenings at state and National Senior Games since 2011, reports that the research is finding its way into more medical publications.

One aspect of senior athlete SAFE screenings that is getting attention is balance testing. Athletes were asked if they'd had a fall in the past 12 months. (Getting knocked down on the court didn't count!) Then they tested balance by having athletes stand on one leg in a variety of conditions: (1) with their eyes open, (2) with eyes closed (3) on a piece of 2" foam, eyes open. Each trial was capped at 30 seconds. Other activity included sitting and standing five times as fast as possible, and walking at normal and fast speeds for 10 meters.

The research found:

- Only 10% of senior athletes have a fall in a given year. This is 1/3 the rate in the general population and an excellent statistic considering the tremendous risk and cost associated with falls.
- All athletes did better than the general population on walking speed, and balancing on one leg with eyes closed. In fact, predictors of falls that work in the general population just don't seem to apply to senior athletes.
- In athletes who did report a fall in the past, a significant difference was found on the tests described above.
- Those who struggled to stand on one leg with eyes closed, and had difficulty balancing on one leg on the foam, were more than twice as likely to have had a fall in the past year than other athletes. Athletes with slower sit to stand times also showed a higher fall rate.
- Though this does not prove that being a part of Senior Games relates to better balance, it does appear that the population of athletes tested at National Senior Games has better balance, fewer falls and requires more challenging balance testing in order to determine fall risk.

This was published in *Topics in Geriatric Rehabilitation*. You can link to the abstract [here](#).

In the same journal, results of a 2015 online survey assessing levels of depression, anxiety and stress were published. In the survey, athletes were asked questions from a standardized inventory (DASS-21), plus an open-ended question. Results showed significantly lower levels of depression, anxiety and stress in senior athletes as compared to the general population.

The research looked at many other variables such as gender, income, level of education, exercise frequency, exercise duration, and didn't find any significant impact of these variable on the results. It was found that athletes still reporting full time employment had slightly higher levels of stress than those who worked part time or reported being retired. However, aggregate levels were still low and healthy. As a group, senior athletes report very high levels of physical activity, and very low levels of chronic disease.

The open-ended question was, "What does a healthy lifestyle mean to you?" Athletes responded with themes related to practicing healthy behaviors, enjoying optimal physical health, experiencing emotional and spiritual well-being, living life to the fullest and maintaining social engagement. You can find the abstract of that report [here](#).

At ExPAAC II (Exercise and Physical Activity in Aging Conference) last summer, Jordre's team also made two presentations related to the SAFE screening. The first focused on cardiovascular health and reported that the incidence of cardiovascular disease in senior athletes was significantly lower than in the general population of adults the same age. For instance, in men and women between the ages of 60-79 the reported incidence of cardiovascular disease is approximately 69% and 68% respectively. This includes conditions such as coronary heart disease, heart failure, stroke, and hypertension. In the senior athlete population, an incidence of 43% and 33% respectively was found. Even more impressive was the rate of type 2 diabetes. In the general population, this is

approximately 22%, and in senior athletes of the same age it was less than 6%! Athletes registered and competing in sports that challenge the cardiovascular system were much less likely to have diabetes or cardiovascular disease than other senior athletes.

The second presentation topic at EXPAAC related to walking speed entitled “The Influence of Exercise Training on Gait Speed in Senior Athletes.” SAFE results revealed that all tested National Senior Games athletes walk more briskly than the general population, and as a whole, reported more than double the national recommendation of 150 minutes per week of exercise. These are great indicators for disease prevention and overall health. Interestingly, when asked to walk at their “usual pace,” archers had the highest speed (1.59 meters/sec) while at fast pace race walkers were the speedy ones (2.73 meters/second). It is suspected these results are related to sport specificity. Archers are required to consistently retrieve arrows, and race walkers are racing!

Here are the full references for each publication. For copyright reasons, the full text of the first two articles cannot be provided, but you should be able to access them via your local library.

- Jordre B, Schweinle W, Oetjen S, Dybsetter N, Braun M. Fall History and Associated Physical Performance Measures in Competitive Senior Athletes. *Topics in Geriatr Rehabil* 32(1):1-16, January/March 2016.
- Bardhoshi G, Jordre B, Schweinle W, Wollersheim Shervy S. Understanding Exercise Practices and Depression, Anxiety and Stress In Senior Games Athletes. *Topics in Geriatr Rehabil*. 32(1):63-71, January/March 2016.
- Brisk B, Jordre B, Schweinle W. *Cardiovascular Disease, Diabetes and Anthropometric Measures in Competitive Senior Athletes*. Poster presentation at: 2016 ExPAAC; Indianapolis, IN.
- Jordre B, Schweinle W, Barber L, Divine E, Kling K. *The influence of Exercise Training on Gait Speed in Senior Athletes*. Poster presentation at 2016 ExPAAC; Indianapolis, IN.