

FALLING WITH GRACE: HOW ADAPTED MARTIAL ARTS TECHNIQUES ARE HELPING SENIORS STAY SAFE

Marc Scriven, Susie Scriven, Millie Beever and Gavin Thomas discuss the University of Worcester initiative that teaches older adults how to fall safely by incorporating techniques from martial arts.

Globally, falls rank as the second leading cause of accidental deaths (WHO, 2021). In 2020, there were 6,410 deaths reported from accidental falls in England and Wales, with 5,850 of these affecting individuals aged 65 and older (NHS, 2022). It is estimated that one in three adults over 65 and half of people over 80 will experience at least one fall per year (NHS, 2024).

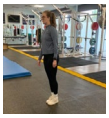
The aging population compounds the problem. In England, for example, the number of people aged 65-79 is expected to increase by nearly 30%, reaching over 10 million within the next 40 years. Similarly, the number of people aged 80 and older is expected to more than double to over 6 million (Centre for Aging, 2024). The cost of these falls to the NHS is estimated at over £2.3 billion annually (NHS, 2019), covering emergency hospital admissions, treatments, and ongoing care for injuries such as hip fractures, which are especially common among older adults.

Recognising that not all falls are preventable, the University of Worcester launched the Fall Safe training programme in the summer of 2024. This initiative combines physical strength and balance training with adapted martial arts fall techniques, to empower older adults in the local community to better prepare for the physical consequence of a fall.

FALL SAFE PROGRAMME

The Fall Safe programme is offered free of charge to participants enrolled in the year round Senior Physical Activity & Adapted Sport (SPAAS) programme and operates as a drop-in 'bolt on' session for Seniors already attending other supervised classes in adapted sports, exercise and physical activity at the University of Worcester. Participants sign a waiver before joining, acknowledging

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BALANCE EXERCISES	CORE EXERCISES	GLUTE EXERCISES	ECCENTRIC EXERCISES
 Single Leg Plant	 Low Plank	 Glute Squeeze	 Press Stop Off Wall
 Single Leg Plant with Clock Rotations	 High-Low Plank Transitions	 Single Leg Lift	 Squat Transition Stop
 Single Leg Plant into Arabesque	 Side Plank Transitions	 Double Leg Leg Lift	 Snap Down – Squat Stance
 Compass Pointers	 Bird Dog	 Donkey Kick	 Snap Down – Split Stance
 Ankle Circles			
 Rock The Boat			

▲ **Table 1:** Balance, Core, Glute & Eccentric Exercises

LEVEL/ BELT	FRONT BREAKFALL	SIDE BREAKFALL	BACK BREAKFALL	ROLLING BREAKFALL
	On all 4's & drop onto a towel	Roll to the side & develop the slap	Spinal Roll	-
	Drop forward from knees – no towel	Side slap from seated position (knee bent)	Spinal Roll + Slap	-
	Drop from a high to low plank	Repeated side slap from seated position (can perform 4 dynamically)	Start in primal squat & roll back with assistance	-
	Drop from crouching tiger to low plank	Side slap from seated position on a roller	Can crouch & roll back unaided	From Swiss ball
	Drop from RDL to low plank	Drop from standing position onto side	Can crouch & roll over to the side	From standing position
	Drop from a standing position to low plank	From walking – drop onto side	From standing position – can roll over shoulder	From walking

▲ **Table 2:** Progressions of the 4 Breaking Your Fall techniques

that the forces experienced in breaking your fall (BYF) may exceed those typically encountered in a controlled gym workout setting. Participants complete screening to assess their strength, focusing on exercises that target balance, core, glutes, and eccentric braking ability (Table 1 provides example exercises that could be used depending on the individual's needs).

We recommend participants practice these exercises or variations of these twice a week. They also learn a midsection bracing technique, which can be done lying down, seated, or in a wall squat. This technique helps engage the nervous system for quicker and stronger bracing responses.

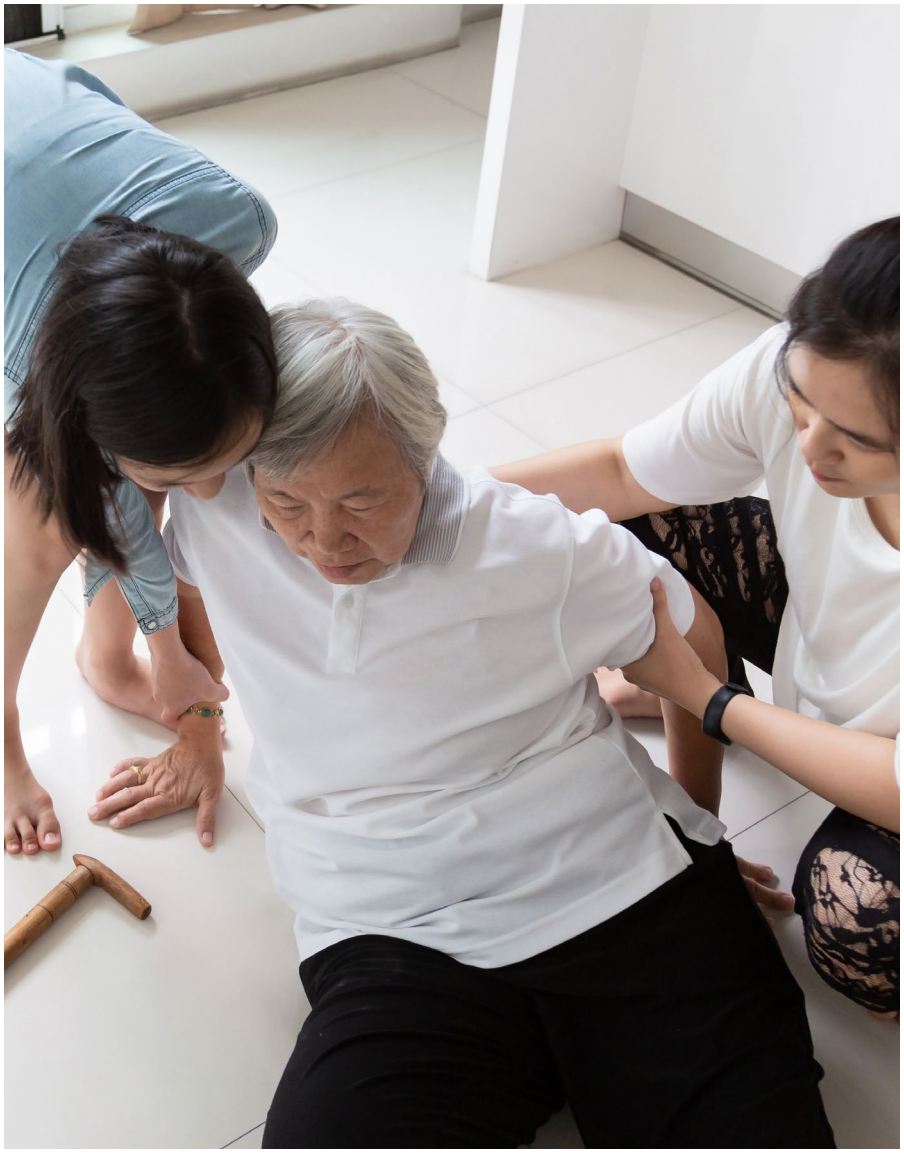
Once participants demonstrate sufficient strength-such as being able to transition into a high-to-low plank for 40 seconds-they are introduced to the four BYF techniques: front, side, back, and rolling falls (Table 2). These have been adapted from traditional judo and jujitsu techniques to meet the needs of our specific Senior population.

Each technique has various proficiency levels, and participants can only progress to the next level once movement efficiency on a consistent basis has been displayed. Participants are encouraged to work toward a black belt within our martial-arts-inspired grading system, which provides a clear path for advancement and recognition of their progress,

However, if participants have had a period away from the falls programme, it likely results in participants regressing back to the previous level/belt. It should be highlighted that each fall type requires its own skill set, so participants must master each technique individually before progressing to a more advanced level. Sessions are brief, lasting about 10 minutes, with participants completing up to four repetitions per technique, a maximum total of 16 repetitions.

REFLECTIONS

Participants have expressed a growing sense of confidence, which may contribute to improved movement patterns and a reduced risk of future falls. This increased confidence, fostered by the SPAAS - Fall Safe programme, helps participants feel more empowered in their daily activities. As one participant shared: "Since starting the programme, I feel less anxious about daily tasks where I could fall. It's comforting knowing I can better protect myself." Another participant recalled an incident that highlighted the programme's



effectiveness: "I was out walking my dog with my family the other day when I suddenly tripped on the footpath. Before I knew it, I was on the ground, but I automatically applied one of the fall techniques. I got up completely fine—my family was more in shock than I was!" In addition, one participant noted that "before joining the programme, I found it challenging to lose body fat. Since participating, however, I have noticed an increase in fat loss and a reduction in my waist size". These personal stories underline the practical benefits of the SPAAS - Fall Safe programme and the differences it is making to people's lives.

WHAT'S NEXT?

The success of the Fall Safe programme in empowering older adults to manage falls has sparked national and international interest, including from countries such as the USA, Mexico, Canada, Spain, Germany, China, Japan, Australia, and New Zealand. The next step involves developing a comprehensive online instructor course to equip health and fitness professionals with the skills to deliver Fall Safe training effectively.

Additionally, the University of Worcester is initiating multidisciplinary research projects to assess the programme's long-term impact. One example is a project involving interviews with programme participants to explore psychosocial benefits, such as increased confidence, reduced fear of falling, and improved social engagement. These studies will generate valuable data to shape fall-safe policies and influence public health guidelines. By sharing our methods and insights, we aim to inspire the widespread adoption of fall-safe training, ensuring that fall safety becomes a recognised and essential part of public health initiatives for aging populations. ■



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