

YAKTRAX ? WALKER REDUCES OUTDOOR WINTER FALLS AND INJURIOUS FALLS IN FALL-PRONE ELDERLY

F. MCKIERNAN, CENTER FOR BONE DISEASES, MARSHFIELD CLINIC, MARSHFIELD, WISCONSIN, USA

INTRODUCTION: Falling is an oft-overlooked target for fracture reduction. Five to ten percent of falls in the elderly result in soft tissue injury, 3-5% in fracture and 1-2% in hip fracture. ¹ Recently, an expert panel identified the 12 highest priority research questions for fall prevention. ² One of these questions was “What is the safest footwear for the fall-prone elderly?”.



Figure 1. Yaktrax Walker

OBJECTIVE: Determine whether Yaktrax ? Walker (Figure 1), a non-medical, gait-stabilizing device reduces outdoor slips, falls and injurious falls in fall-prone elderly during the winter.

METHOD: Ambulatory , community dwelling elders (>65 years) who had fallen at least once within the previous year were randomized to wear either Yaktrax ? Walker (YW) or their usual winter footwear (UWF) during the winter of 2003-4 under appropriate environmental conditions. Both groups maintained daily diaries of all indoor and outdoor slips, falls and injurious falls. **Falls** were defined as any unintentional assumption of the non-upright position on the ground or an intervening surface. **Slips** were defined as any deviation from the upright position that would have resulted in a fall in the absence of an immediate corrective action. **Injurious falls** were rated mild (no medical attention sought), moderate (medical attention sought) or serious (hospitalization). Indoor slip/fall rates served as control for fall tendency.

RESULTS: One-hundred and nine elders (60% female, mean age 74.3 years) completed 10,724 diary days of observation. Diary completion rate was 95%. The RRs for indoor slips/falls and outdoor slips/falls/injurious falls are shown in **Table 1**. The exposure variable for indoor events was all diary days. The exposure variable for outdoor events was only days walked on snow and ice. Indoor slip/fall rates were similar between YW and UWF groups. RR for outdoor fall in the YW group was 0.42. 1/3 of all outdoor slips and 2/3 of all outdoor falls in the YW group occurred when subjects were not wearing their assigned device. The UWF group reported 10 injurious falls (8 mild, 2 moderate) compared with 1 mild injury in YW. No serious injury or fracture occurred in either group. NNT=6 for YW to prevent 1 injurious fall per winter.

Table 1. Relative risk of slips, falls and injurious falls in YW group compared with UWF group. For outdoor events the exposure variable was days walked on snow and ice.

	Indoor slip	Indoor fall	Outdoor slip	Outdoor fall	Outdoor injurious fall
Yaktrax ? Walker	1.47*	1.19*	0.61**	0.42†	0.13‡

*p=NS, ** p=0.14, †p<0.03, ‡p<0.02

CONCLUSION: Under appropriate winter conditions Yaktrax ? Walker prevents outdoor falls and injurious falls in fall-prone elderly. Fewer falls should result in fewer serious injuries, fractures and fatalities.

1. Tinetti ME, NEJM 1988;319:1701-7
2. Am Ger Soc, Br Ger Soc and Am Acad Ortho Surg Panel on Falls Prevention, J Am Ger Soc 2001;49:664-72