

# Falls in people with diabetes and peripheral neuropathy

## Associations with demographics, gait quality and physical activity

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### Introduction

People with diabetes-related neuropathy are not only at risk of foot ulceration, but also at increased risk of falling due to loss of sensation, altered gait and foot biomechanics and advanced age.

**Limited insight into falls, physical activity, and gait quality hampers fall prevention in people with diabetes and neuropathy.**

### Methods



N = 149: two prospective studies: DIALOAD and DIASSIST



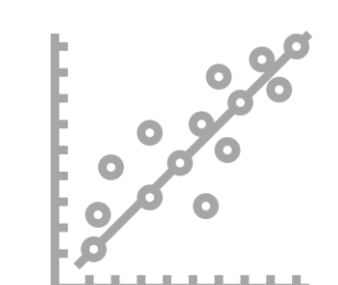
Accelerometry: gait quality and physical activity



Falls reported in fall diaries and questionnaires



Faller: two falls or more or fall-related injury



Multivariate logistic regression analysis

44%

one fall

36%

≥ 2 falls

24%

injury

**Fallers walk slower and are less physically active than non-fallers**



Walking speed (m/s)  
Fall: 0.82 (0.76-0.95)  
Non-fall: 0.90 (0.82-1.07)  
P<0.01



Sitting time (h)  
Fall: 9.7 ± 2.6  
Non-fall: 8.7 ± 2.4  
p=0.03

**A slower walking speed is associated with falls**



OR=0.09  
(95% CI:0.01-0.58)  
 $\beta$ =-2.46 (SE=0.98)  
p=0.01

### Discussion

In one year, a third of the people with diabetes and peripheral neuropathy reported two falls or more. Fallers showed a slower walking speed and lower gait quality than non-fallers. Physical activity measures generally pointed towards lower physical activity for falls, but only sitting significantly differed between groups.

The association between falls and walking speed suggests that a less physically active lifestyle may contribute to fall risk in this population.

### Take home message

In people with diabetes and neuropathy, a slower walking speed is associated with falls, possibly reflecting general health status. **The effect of a more physically active lifestyle may reduce falls and should be explored in fall prevention interventions.**



### Contact

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