

Diabetic peripheral neuropathy, sarcopenia and obesity are important determinants of physical activity in type 2 diabetes

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Aim: In an earlier study we have shown that diabetic foot ulcers are associated with a major loss of mobility (Nabuurs-Franssen, *diabetologia*, 2002). However, it was unclear if and to which extent this loss of mobility was caused by the ulcer itself, the treatment and/or the underlying pathology. We hypothesized that diabetic complications and underlying pathology could seriously limit physical capacity even in persons without major mobility limitations. The aim of this study was to evaluate the effects of diabetic complications on physical activity in patients without major mobility limitations. **Methods:** To assess physical activity, a random sample of 100 patients with DM2 treated in primary care was equipped with a validated pedometer (New Lifestyle 2000). Persons with major limitations in mobility were excluded (i.e. persons with severe cardiac disease or COPD). Possible determinants measured included peripheral neuropathy (PNP), neuropathic pain, peripheral arterial disease (PAD), cardiovascular disease, sarcopenia, BMI, depression, and falls. **Results:** Mean age was 64.5 ± 9.4 years, 69% was male, mean HbA1c $6.8 \pm 0.8\%$. The prevalence of PNP (40.2%) and obesity (BMI $>30 \text{ kg/m}^2$; 53.0%) was high. Persons took a median of 6,429 steps/day (interquartile range 4,517-8,573). The final regression model included PAD, PNP, sarcopenia and BMI (table). **Conclusions:** PNP, sarcopenia and obesity are important determinants of physical activity in persons with DM2, even in persons without major mobility limitations. These determinants could in part explain the major loss of mobility associated with diabetic foot ulcers.

Table: regression analysis steps/day

Determinant	Unstandardized B (95% CI) ^a	p-value
PAD vs. no PAD	-1394 (-3347 ; 560)	0.16
PNP vs. no PNP	-1872 (-3330 ; -415)	< 0.05
Sarcopenia vs. no sarcopenia	-1535 (-3069 ; -1)	< 0.05
BMI	-210 (-338 ; -82)	< 0.005

a) Data are adjusted for age and sex, abbreviations: PAD = peripheral arterial disease, PNP = peripheral neuropathy, BMI = body mass index.