

Publication

## Pedometer Accuracy in Patients with Chronic Heart Failure

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This study assesses the accuracy of the Omron HJ-720ITC pedometer at low walking intensities in patients with chronic heart failure. Step accuracy was assessed by visual observation on the treadmill and during free walking at 40, 50, 60, 70, 80 m/min, as well as during self paced walking using the 6 min walk test. A total of ninety-seven patients with heart failure (mean age: 61+/-13, NYHA I, N=30; NYHA II, N=32; NYHA III, N=35) participated in the study. At predefined walking speeds, a statistically significant % error in pedometer accuracy was evident at 60 m/min ( $p=0.039$ ), and % error increased markedly below this threshold. Highest % error in pedometer accuracy was seen at 40 m/min (mean bias (% error): 28.3+/-9.0%; 95% CI: 21.8-34.7;  $p>0.001$ ). During self paced walking (6MWT) the absolute % error in pedometer readings was largest in patients with strongest functional limitations and 6 MWT distances >400 m (mean bias (% error): 10.7+/-13.6%; CI 5.6-15.4,  $p>0.001$ ). The Omron HJ-720ITC pedometer is accurate for monitoring activity in individuals with normal walking behaviour, but seems unsuitable for chronically ill patients characterised by slow walking gaits.

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