Actigraphy allows long-time evaluation of physical activity and resting behaviour in a normal environment. The aim of this study was, by use of actigraphy, to measure motor function, energy expenditure and resting/sleeping time in idiopathic normal pressure hydrocephalus (iNPH) patients before and after surgery, and compare the results with healthy individuals (HI).

33 patients (mean 73 year) and 17 HI (mean 73 year) participated. Actigraphy with SenseWear (BodyMedia Inc., Pittsburgh, PA, USA) was recorded in the iNPH patients before and three months postoperatively and twice in the HI with a three-month interval. In addition, gait speed, timed up and Go (TUG) and MMSE were registered pre- and post-operatively. RESULTS:

During daytime the patients took fewer steps ($p < 0.001$) and their total energy expenditure (TEE) was lower ($p < 0.01$) than in the HI. Twenty patients were evaluated pre- and post-operatively and no change in either the number of steps, TEE, or time spent lying/sleeping after surgery could be detected. iNPH patients had lower gait speed, worse TUG and MMSE compared to the HI. Gait and TUG improved after surgery.

Actigraphy in iNPH patients indicated reduced ambulatory activity and lower energy expenditure compared to HI preoperatively. This did not change postoperatively in spite of improved TUG and gait speed [1)].

1)
Lundin F, Ulander M, Svanborg E, Wikkelsø C, Leijon G. How active are patients with idiopathic normal pressure hydrocephalus and does activity improve after shunt surgery? A controlled actigraphic study. Clin Neurol Neurosurg. 2013 Feb;115(2):192-6. doi: 10.1016/j.clineuro.2012.05.009. Epub 2012 Jun 4. PubMed PMID: 22673042.