

S. GONFRIER, I. PELE, B. LÉBOIME. **Modification of night actimetry profile before a fall: Retrospective case control study of 60 cases of institutionalized patients at risk of fall.** *Gerontechnology* 2013; 12(1):57; doi:10.4017/gt.2013.12.1.003.00 **Purpose** Falls cause injury, hospitalization and death for persons of all ages and risk of falls increases with age. Actimetry is a solution to survey global motor activity. The aim of this work is to screen activity modification 15 days before a fall to find a modification profile that could lead to build a preventive actimetric signal of falls. **Method** The present study is a retrospective case-control study. We randomized 60 actimetry profiles. 30 Patients who had fallen and 30 control patients. Actimetry was recorded all night long for 15 days. Patients were institutionalized and at a risk of fall in different institutions. Actimetry was record by the EDAO system developed by the Link Care Services SA (Thessaloniki, Greece). The first part of this study was to describe the actimetry profile. The second part consisted of analysis of the actimetric profile and linking it to the fall by an analysis of sensibility and specificity. **Results & Discussion** From this study we highlighted two profiles of actimetry before a fall. The first profile was a 'sinusoid' fluctuation activity few days before falling. The second was an important increase of activity the night before the fall. Results of the second part of the study will be presented during the congress. Trying to highlight actimetry profile modification before a fall could be useful in term of prevention of fall in the future. Detection of this profile could lead to building signals for prevention and reduction of the incidence of death and morbidity due to the fall. *Keywords:* fall prevention, actimetry, older adults  
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