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**P1.132 Dual task and gait analysis: comparison between patients with mild cognitive impairment, patients with Alzheimer's disease and control subjects**

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**Background:** Patients with Alzheimer's disease (AD) present a great risk of falls. Subjects with mild cognitive impairment (MCI) have impaired cognition, especially memory, to a greater extent than would be expected for age and education. Furthermore, the progression rate to dementia is higher for subjects with MCI compared with controls.

**Methods:** This study proposed a gait analysis with an accelerometric device (Locometrix®) to appreciate comfortable walking in two conditions: simple task (walking) and dual task (walking while counting backwards out loud). 14 patients with MCI, 6 patients with AD and 14 control subjects were included in this study. They walked at their preferred speed down and back along a 45 meter-long straight corridor. A 20-second period of stabilized walking was used to calculate stride frequency, stride length, symmetry and regularity. Speed walking was measured by electrical photocells.

**Results:** Variables measured during simple and dual tasks illustrated reduction ( $p < 0.05$ ) of speed, stride length and stride regularity in patients with AD in comparison with the control group. Step symmetry improved during dual task in control group. In contrast, this parameter was shown to be particularly altered during dual task in patients with AD as well as in patients with MCI.

**Conclusion:** These original results appear relevant and show that the gait analysis (suitable for routine use) during simple and dual tasks offer considerable potential to aid diagnosis. The technique might also track the evolution of AD and help to appreciate the effectiveness of treatments.