

## ActiBelt in zero gravity



**Experiments in zero gravity: The parabola flight with the Airbus A300 ZERO-G makes it possible. Figure: Novespace**



**The ActiBelt**

A project proposal to test the ActiBelt – originally developed for the monitoring of disability and gait disturbance of persons with MS<sup>1,2</sup> – in a zero gravity environment was approved by the German Aerospace Center (DLR) with financial support of the Bayerische Forschungsstiftung (Bavarian funding association), one of Bavarians premium research funding organisations. From 14/11/2006 to 17/11/2006 in a total of 4 flights, 124 parabolas, where each zero gravity phase lasted 22 seconds which gives a total of 45 minutes and 28 seconds of zero gravity, the ActiBelt turned out to be a potentially useful tool to monitor the activity of astronauts. Future experiments to detect the energy consumption by using information from the ActiBelt may also generate useful insights for the design of activity trials in MS<sup>3</sup>, other neurologic degenerative diseases and even in obesity.

- <sup>1</sup> Daumer M, Thaler K, Kruis E, Feneberg W, Staude G, Scholz M: *Steps towards a miniaturized, robust and autonomous measurement device for the long-term monitoring of the activity of patients – ActiBelt*. Biomedizinische Technik, accepted for publication
- <sup>2</sup> Daumer M, Thaler K, Goßner T, Kruis E, Staude G, Feneberg W, Scholz M: *ActiBelt: A portable, belt-buckle accelerometer to monitor mobility in MS*. Ectrims 2006, late breaking news.
- <sup>3</sup> Rietberg MB, Brooks D, Uitdehaag BMJ, Kwakkel G. *Exercise therapy for multiple sclerosis*. Cochrane Database of Systematic Reviews 2004, Issue 3. Art. No.: CD003980. DOI: 10.1002/14651858.CD003980.pub2