

Press Release



Galileo® Training at MEDICA 2010 (Hall 5, Booth K38)

From space research to training and therapy

Pforzheim, 17.11.2010 – Novotec Medical GmbH based in Pforzheim, Germany, presents on this years MEDICA its novel pulley training system NEW-TONE. It has been designed for the use in combination with the Galileo vibrating dumbbell. The innovative concept for generating constant training force was derived from the research project Integrated Counter Measure System (ICS) on behalf of the European Space Agency (ESA). The recently successfully completed ICS project had been conducted in cooperation with the Universities of Freiburg and Potsdam and the aerospace company EADS Astrium.

In contrast to existing systems using weights the NEW-TONE vacuum-driven pulley system allows training using constant, adjustable force. Since the set training force is largely independent from velocity and acceleration the NEW-TONE system allows new training modes resulting in much better controllable training conditions, which is especially useful in therapeutic applications. At the same time the new technology allows a compact and light weight design. An additional remote control provides comfortable and fast adjustment of the training force. There is no need to interrupt the training itself as the inconvenient change of weights is no longer required.

The Pforzheim-based companies Novotec Medical and Stratec Medizintechnik have been involved in space research for over 10 years. The main goal has been the field of so-called „Counter Measures“ - training methods targeting the compensation of negative effects like muscle and bone loss caused by the lack of gravity during long space missions. The results of the two successful Berlin Bed-Rest Studies proved that applying the Galileo Space device for 10 minutes per week can almost completely prevent muscle and bone loss in bedridden healthy subjects.

The subsequent ICS project was focused on the development of a modular training system to extend vibration training by additional complementing training methods. The core training concept of the ICS project was the so-called “Impact Training”, where fast movements and at the same time high forces are utilized, as, for example, in reactive jumping. However, jump training in space requires a device which generates artificial gravity in order to achieve accelerating forces. The engineers of Novotec Medical succeeded by using a vacuum-based technology allowing compact design and at the same time a minimum need for maintenance. The resulting jump training sledge allows physiologic jumping patterns in a lying position.

The research groups of Prof. Albert Gollhofer of the University of Freiburg and Prof. Markus Gruber of the University of Potsdam carried out extensive studies comparing training on Novotec's new jump training sledge. According to Prof. Gruber the advantages of the new training device compared with established systems could be documented. The scientist is also convinced that completely new possibilities for training and therapy concepts can be derived from these new insights.

Besides the novel NEWTONE system which will be available for general public by end of Q1 2011, the complete ICS system is already available for research purposes only.

The close collaboration with international research groups allows the continuous transfer of excellent research results into Novotec Medical's product improvements and new, innovative product lines. Novotec Medical GmbH is constantly developing new products for therapeutic and training applications.

Press-Contact

Novotec Medical GmbH
Marianne Prestel
Durlacher Str. 35
D-75172 Pforzheim
Tel: +49 (0)7231 - 154 48 - 30
Fax: +49 (0)7231 - 154 48 - 48
E-mail: presse@novotecmedical.de
Internet: www.galileo-training.com

About Novotec Medical GmbH

Novotec Medical was founded 2001 and is based in Pforzheim. It is a TÜV-certified manufacturer of Galileo training and therapy devices and of Leonardo motion analysis systems (mechanography). The basis for the development of Galileo was laid at the sister company Stratec Medizintechnik GmbH that develops, produces, and distributes peripheral quantitative computed tomography systems (pQCT) for muscle and bone analysis. For more than 25 years the consolidated companies collaborate closely with international research facilities. The realised results are continuously incorporated in our products.

The portfolio of imaging, motion analysis and Galileo Training adds up to a holistic concept around the issue of muscle and bone, ranging from diagnosis to treatment. Novotec Medical is project partner of ESA (European Space Agency) in several projects e.g. for the evaluation of efficient training measures to avoid muscle and bone loss during space missions and collaborates worldwide with other renowned research facilities like Charité Berlin, university clinic Cologne and ETH Zurich.

In addition to the high scientific standards, the constant expansion of the indication list for the side alternating vibration training with Galileo is our priority. The manufacturer puts great emphasis on the differentiation of side alternating Galileo technology to products with different functionalities.

The principle of Galileo is based on the natural movement of human gait. The first Galileo devices were handed in for patenting in 1996. Galileo's side-alternating motion is similar to a seesaw movement with variable amplitude and frequency, and therefore stimulates a movement pattern similar to human gait. The rapid movement of the training platform causes a tilting movement of the pelvis, just like when walking, but much more frequently. To compensate, the body responds with rhythmic muscle contractions, alternating between the left and right side of the body. From a frequency of about 12 hertz onwards these muscle contractions are not a conscious process but, rather, are a reflex. This stretch reflex activates the muscles in the legs, the stomach and the back right up into the trunk. With more than 100 peer reviewed PubMed® listed publications since 1998 Galileo is the most comprehensive researched vibration training device.