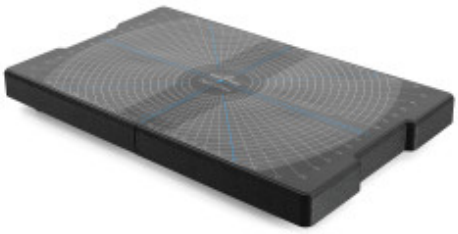
Meden-Inmed Sp. z.o.o, Wenedów 2, 75-847 Koszalin | shop@meden.com.pl | phone: +48 94 344 90 54

Neuroforma - A computer system supporting neurological rehabilitation

Product short description:

Neuroforma is an innovative system designed for virtual reality rehabilitation using biofeedback. The **Neuroforma** system is a functional training tool equipped with a comfortable mobile station consisting of a large display, a computer system and a 3D optical system.

Product gallery:



Product description:

Neuroforma - A computer system supporting neurological rehabilitation

Neuroforma is a functional rehabilitation system designed to support the rehabilitation process for patients with various neurological disorders. The system integrates state-of-the-art computer technology with neurological rehabilitation principles to provide a personalized and interactive approach to rehabilitation.

Neuroforma uses a variety of tools, such as specialized computer software, sensory interfaces, motion trackers, and virtual reality platforms to create engaging and effective rehabilitation programs. These programs are tailored to the patient’s individual needs, taking into account specific functional deficits and therapeutic goals.

Neuroforma's core principles are based on neuroplasticity—the brain’s ability to change and regenerate after damage. Through repetitive and targeted exercises, Neuroforma aims to stimulate the brain and nervous system to form new neural connections and improve motor function.

Features:

Includes the possibility of 2D and 3D exercises (each interactive exercise can be performed using both 2D and 3D webcams)

Contains the following groups of exercises: breathing and facial, upper limb and trunk, cognitive processes, manual, and mirror therapy

Includes automatic calibration — a module for positioning users correctly before exercising, automatic adjustment to users’ height, support for exercising in both standing and sitting positions, and posture correction

Includes the ability to exercise in both standing and sitting positions

In each interactive exercise, the user sees their actual mirror image on the monitor

Includes the ability to save any number of users and present their exercise session results in charts

Includes the ability to create and save dedicated exercise sessions for each user separately. A scheduled session has defined exercises, parameters such as difficulty level, exercise time, and required range of motion

(with the ability to set different ranges of motion for the left and right sides).

Includes the ability to adjust exercise parameters to the user’s capabilities.

How does Neuroforma work?

With the Neuroforma system, the patient stands or sits facing the screen. On the screen, the patient sees their real, mirrored reflection, around which virtual objects appear. The patient’s task is to move their reflection to catch, move, or hit the appearing objects. Using virtual reality technology, the patient receives immediate feedback (biofeedback). After each exercise, they can view simple statistics, which are also available as long-term reports showing progress in each task.

Neuroforma functional rehabilitation system - exercises

The patient performs tasks in an engaging virtual environment, which increases motivation, improves attitudes toward exercise, and enhances satisfaction with rehabilitation services. All these factors contribute to increasing the effectiveness of rehabilitation.

The Neuroforma system is based on a database of interactive exercises. The combination of cognitive and motor tasks in the so-called dual-task paradigm makes Neuroforma unique. The patient directs objects on the screen with body movements, thereby continuously improving physical fitness. At the same time, the patient is challenged with mental tasks of varying complexity. Incorporating cognitive elements into motor tasks is beneficial for all patients and is especially important in neurological rehabilitation.

The mirror therapy module is a specialized exercise designed specifically for post-stroke patients. The traditional mirror has been replaced by a camera and a screen. Thanks to advanced image analysis and transformation, a patient with hemiparesis sees their own mirror image on the screen, where the inoperative limb moves symmetrically and to the same extent as the able-bodied limb.

Examples of exercises in the Neuroforma functional rehabilitation system

Balls

Boxing

Machine

Track

Numbers

Butterfly

Neuroforma - Balls

×

Neuroforma - Boxing

×

Neuroforma - Machine

×

Neuroforma - Track

×

Neuroforma - Numbers

×

Neuroforma - Butterfly

×

Clinical trials of Neuroforma systems

The effectiveness of rehabilitation with the Neuroforma system continues to increase due to the intensive development of the program. From the very beginning, we have relied on the knowledge and cooperation of scientists conducting research on various clinical groups. We collect feedback from specialists who use Neuroforma in their practice and listen to patients who train independently. We also implement projects that enhance the value and effectiveness of the program.

Source: https://www.neuro-forma.com/science/

Additional options:

Balance control

Posturographic platform with monitoring of differential parameters and collapsible belay railing and unlimited license,

Relief arm

Mobile functional upper limb strain relief device with adjustable strain relief and perpetual license

Video presentation:

The Neuroforma kit includes:

The set is equipped with a computer with minimum parameters:	**OS (operating system):** Windows 10 64-bit **CPU (processor):** Intel Core i5-7200U (Dual Core, 2.5 GHz, 3 MB cache) or similar passmark score **RAM:** 8 GB - spread over 2 bones of 4GB each **GPU (graphics card):** DirectX 11 compatible **Disk:** SSD min. 120 GB **Ports:** USB 3.0 - min 1 pc, USB 2.0 - min 1 pc, HDMI **Wireless communication - WiFi**
3D camera connectable to the computer via USB cable	
Monitor min. 40 inches, FullHD,	
Warranty:	24 months

Product codes:

Reference: 01-NRF-0101-002
EAN13: -
UPC: -

Product features:

Product attributes: