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Mathematical Modeling in the Neurorehabilitation of Acute Patients by way of an Example of Efficient Treatment of Patients with Apallic Syndrome

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Modeling of neurorehabilitation processes includes stages of the brain after various damages: from brain injuries till vascular catastrophes - strokes. Main processes of the neurorehabilitation modeling of the damaged brain are the following:

1. restoring of cerebral blood supply to physiological level,
2. restoration of neural networks and biopotentials for providing the functioning of nerve conductors,
3. imposing of electrical conduction restoration through main paths,
4. creating of effective connection between the brain as the governing organ in the cybersystem and subordinated organs and systems,
5. formation and providing sustainable functioning of the neurodynamic system on the physiological basis.

Modeling the rehabilitation process includes a feedback from organs and systems with impulsion return to the brain.

Main goals of the neurorehabilitation are to establish a stable and sustainable neurodynamic connection between the brain and organs and systems.

The main role of the neurorehabilitation modeling includes the formation of efficient algorithms for combining the processes of treatment and complex multidisciplinary rehabilitation with an individual approach to patients' problems.