

NewroSim™ is a neurological model-driven computer-based simulator to be used as a tool in the clinical simulation field. It allows the dynamic visualization and interaction of the main cerebrovascular variables so as to enable the evaluation of the cerebral perfusion level of the patient, as well as develop of several clinical scenarios in neurology. The software is also able to reproduce a normal Doppler sound and the variations related to different hemodynamic profiles. The **mathematical model** driving **NewroSim™** is able to reproduce the hemodynamics of the intracranial cerebral vessels, taking into account the presence of any inter-hemispheric compensation in relation to the morphology of the **Circle of Willis** (e.g. through the anterior and posteriors communicating arteries). Thanks to the user-friendly interface, the user interaction with the mathematical model is simple, fast and effective.

NewroSim™ can be used:

1. as a **stand-alone software**, allowing the representation of pathological situations and the monitoring of the cerebral perfusion level in the different cerebral districts, according to the variation in the cardiovascular parameters, which are directly controlled by the user;
2. by the instructor **during clinical simulation scenarios**, thanks to the possibility of visualizing on a external monitor the cerebrovascular variables (e.g. intracranial pressure, cerebral perfusion pressure, blood-flow velocities in different cerebral districts) which can be evaluated from the user in order to accomplish the scenario;
3. **linked to the patient simulators**, automatically reacting to the variations of the cardiovascular parameters set by the instructor. The software is capable of adding an extra screen in the simulation room connected (via cable or wireless) with the instructor interface in the control room.

NewroSim™ allows the user to monitor the cerebrovascular variables actually useful for the evaluation of the cerebral perfusion level in pathological conditions, but difficult to monitor in regular clinical practice. The user is able to modify the value of the cardiovascular variables as the arterial pressure, the heart rate and the arterial CO₂ partial pressure, or act on the cerebral circle condition adding stenosis or occlusions at the different level of the brain. Moreover, it's possible to simulate an **impaired condition of the autoregulation** as well as the **CO₂ reactivity** in order to allow the simulation of many scenarios with different levels of the regulatory mechanisms.

GET THE DEMO

<http://en accuratesolutions.it/newrosim>

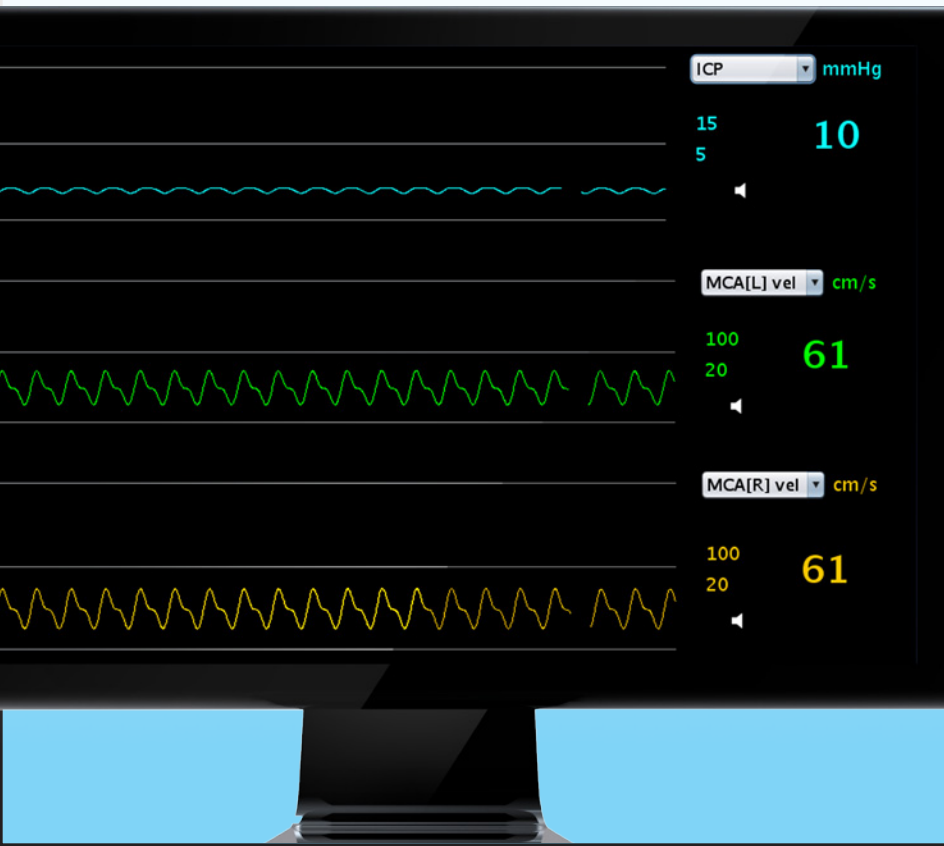
Many are pathological scenarios:

- stenosis/occlusion of the **internal carotid arteries** and of the basilar artery;
- stenosis/occlusion of the **middle, posterior and anterior cerebral arteries**;
- **impairment** or **total absence** of the **cerebral regulatory mechanisms** following ictus, head injury or other pathological cerebral situations;
- evaluation of the cerebral status after variation of the cardiovascular variables of the patient.

NewroSim™ is a perfect support for teaching, since the user has the possibility to practice and self-evaluate on several clinical scenarios. The stand-alone version is completely compatible with Windows and Mac OS X, so it allows the usage of the **NewroSim™** both in plenary rooms by teachers/instructors and on personal computers by students/users.

NewroSim™ is an interesting new complementary tool for the clinical simulation field, since it integrates and completes an area not covered by the **full-scale simulators** on the market today. Thanks to the possibility to interact with some of these simulators (manual and automatic mode), **NewroSim™** allows the development of new clinical simulation scenarios in the neurological field and so the utilization of particular diagnostic devices.

Requisiti di Sistema Consigliati
Mac OS X 10.4 o successivo
Intel Core Due Duo 2.0 GHz, 2 GB RAM, 100 MB Spazio Libero su Hard Disk, Connessione di Rete
Windows XP SP3, Vista, 7
Intel Core Due Duo 2.0 GHz, 2 GB RAM, 100 MB Spazio Libero su Hard Disk, Connessione di Rete



NewroSim™ is a model-driven software compatible with Windows Xp, Vista, 7 and Mac OS X.

NewroSim™ is designed by Accurate, which works both on the development and the integration of this application with the existing full scale simulators through the creation of specific communication protocols.



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Requisiti di Sistema Consigliati

Mac OS X 10.4 o successivo

Intel Core Due Duo 2.0 GHz, 2 GB RAM, 100 MB Free Space on Hard Disk, Network Connection.

Windows XP SP3, Vista, 7

Intel Core Due Duo 2.0 GHz, 2 GB RAM, 100 MB Free Space on Hard Disk, Network Connection.

CLINICAL USE DISCLAIMER **NewroSim™** is licensed for use for educational purposes only. **NewroSim™** is not intended for clinical use.