

## Wieslaw L. Nowinski and Beng Choon Chua (eds): *The Human Brain in 1969 Pieces. Structure, Vasculature, Tracts, Cranial Nerves, Systems, Head Muscles, and Glands, Version 2.0*

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In the editorial evolution, one of the most revolutionary changes has certainly been the “disappearance of paper”, which has created problems to those who continue to base their learning on paper tools. In fact, the digital revolution has produced new spectacular and, at the same time, effective didactic instruments allowing results which were previously not achievable. *The Human Brain in 1969 Pieces 2.0* is an innovative and incredibly detailed editorial product that permits the user to explore and understand better the human brain; it helps to individuate and recognize structures, vasculature, tracts, cranial nerves, systems, head muscles, and glands. For people skilled in computer science, this product is easy to navigate, permitting the user to detect about 2,000 detailed components of the head. In this way, it is possible to identify every area of the brain from the spinal cord to tiny vessels. The modular dashboard allows the user to see one structure at a time or in any combination, turn off structures, rotate the brain, pan across the brain, see structures as labeled or unlabeled, and much more. The author is Wieslaw L. Nowinski, DSc, PhD, principal scientist and lab director at A\*STAR in Singapore, supported by Beng Choon Chua, project leader in the same laboratory. As reported in the foreword, the publication was constructed from multiple 3 T and 7 T MRI data using Dr. Nowinski’s brain as the *in vivo* specimen. The result is a 3D atlas, which has won many awards, permitting any who are interested in learning neuro-

anatomy to explore and understand better the intricacies of the human brain.

As technical information, the following minimum requirements have to be reported:

Mac : iMac with x86\_64 architecture (Core 2 Duo, Core i3, Core i5, Core i7); 1 GB RAM or greater; MacOS 10.6 and above; graphics card that supports OpenGL 2.1 and above; 150 MB hard disk space. PC : 2 GHz Intel Core 2 Duo or higher; 1 GB RAM or greater; graphics card that supports OpenGL 2.1 (recommended not mandatory) and with at least 512 MB of video memory; 150 MB hard disk space; Windows XP Service Pack 2 or later, or Windows 7 (English version is recommended).

Installing occupies 118 MB and the CD is needed at all times in order to run the software. It can only be installed on two computers at any given time, but it is possible to install this software on a third one, de-authorizing one of the previous two.

With sufficient computer literacy, this atlas is particularly useful for neuroradiologists and nuclear physicians, neurosurgeons and neuropsychiatrists, and, in general, for all neuroscientists who need to recognize accurately all the structures of the human brain, and specifically, of the head. The tool may be particularly effective and useful for teachers, residents, and students, mainly for those who have a high interactivity with this kind of digital system.

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