



NANO-MEDICINE, NANO-TECHNOLOGY AND NANO-BIO-ELECTRONIC APPLICATIONS –A NEW CHAPTER IN NEUROLOGICAL SURGERY AND IN PEDIATRIC NEUROLOGICAL SURGERY–SHORT COMMENTARY

**Nikolaos Ch.
Syrmos**

Aristotle Univesrity Of Thessaloniki-Greece

KEYWORDS :

Nano-Technology is already ,since the last years, providing huge developments in all the fields of Medicine (Nano-Medicine Applications in Medicine).Neurological Surgery (Neurosurgery), in adult and in pediatric patients, is one of the latest Medical Disciplines that the Nano-Technology is started to be used. Brain and Spine diseases, both traumatic and degenerative, are treated now days much more successfully thanks to the upcoming Nano-Applications. Many studies and research protocols have been developed in the recent years and more of them will be activated in the near future. The most common fields of applications are: Applied Neurosciences, Modern Neurotechnologies, Cellular investigation and treatment, Central and Peripheral Nervous System Mapping, Novel Neurosurgical and Pediatric Neurosurgery Devices, Products and Tools etc. Thanks these applications we are able to perform better diagnosis , accurate evaluation and to schedule optimal integrated treatments using a variety of new materials, biomedical engineering tools and applications, novel electric engineering formats and Neurosurgery-Pediatirc Neurosurgery components. The current practice of nanotechnology in neurosurgery and in pediatric Neurosurgery is called "Nano-Neurological surgery ", and Nano-Pediatric-Neurological surgery" under the title of "Modern Nano-neurosciences". Nanomedicine and Nanotechnology will provide less cost application and more production and the will be important factors in Quality of Life (QOL) and in Health Related Quality of Life (HRQOL), offering safer lives and minimal time and cost loss. Both Nano-Medicine and Nano-Technology for sure, are changing Medicine as a Science, from its core and of course they are transforming Neurosurgery and Pediatric Neurosurgery, leading into the formulation of new-large scale discoveries and practical innovations, integrative novel cellular and root therapies under the title of "Nano-Bio-Electronics Applications". Through them new diagnostic techniques and therapeutic methods will shifted from clinical laboratory investigation into clinical trial application and later into commercial medicinal products, safer and more adapted for Pediatric and Adult Neurosurgical Patients, worldwide.

REFERENCES

1. Ganau M, Paris M, Syrmos N, Ganau L, Ligarotti GKI, Moghaddamjou A, Prisco L, Ambu R, Chibbaro S. How Nanotechnology and Biomedical Engineering Are Supporting the Identification of Predictive Biomarkers in Neuro-Oncology. *Medicines (Basel)*. 2018 Feb 26;5(1):23. doi: 10.3390/medicines5010023. PMID: 29495368; PMCID: PMC5874588.
2. Ganau M, Syrmos N, Paris M, Ganau L, Ligarotti GKI, Moghaddamjou A, Chibbaro S, Soddu A, Ambu R, Prisco L. Current and Future Applications of Biomedical Engineering for Proteomic Profiling: Predictive Biomarkers in Neuro-Traumatology. *Medicines (Basel)*. 2018 Feb 5;5(1):19. doi: 10.3390/medicines5010019. PMID: 29401743; PMCID: PMC5874584.
3. Syrmos NC. The seven miracles of Neurosurgery. *J Neurosurg Sci*. 2020 Aug;64(4):407. doi: 10.23736/S0390-5616.19.04855-0. Epub 2020 Feb 10. PMID: 32043845.