

The 609th Inaugural Lecture titled: “The Human Brain: The Threes (3) therein, and Neuroprotection” given by Professor Olatunde Owoeye. 02 April, 2026.

ABSTRACT

My lecture gave me the opportunity to share with listeners the occurrence of sets of three related items noted repeatedly in my study of the human brain. Learning, understanding and recall of learnt information is easily enhanced when learnt information is linked rather than when isolated. Linked items consisting of related information will tend towards cohesion of such when understood and fully assimilated. This association of the three (3) items with each of its stem, when read, studied, reflected on and understood will make it easy to recall them either during academic discussions, or exercises like quizzes or during anatomy examinations. Of the 66 items of threes (3s) I listed, I was unable to speak to all of them, but the remaining can be checked up in the Lecture book. I **dedicate** this first part to my Anatomy students of Medicine, Dentistry, Physiotherapy, Physiology, Pharmacy, Nursing, BMLS, Human Nutrition and Dietetics, and Environmental Health Science.

The second part of my lecture highlighted the different researches I carried out with colleagues in our search for plant and other sources that can reduce, mitigate or ameliorate brain injury, degeneration or death of neurones in the brain. This is in line with my research focus which has been centered on **Neuroprotection** with emphasis on the **morphological/structural alterations** that accompany *neurotrauma (brain injury)* and *neural regeneration (brain repairs)* using chemical compounds and plant medicinal products with anti-oxidant activities to observe the neural responses to such induced trauma irrespective of their origin. Causes of neurotrauma could be: physical injury, radiation, chemical toxicity, extremes of temperature, brain ischaemia as in stroke etc. **Neuroprotection can be defined as a relative preservation of neuronal structure and function.** Notable nervous conditions like Alzheimer’s disease, Parkinson’s and the pathology that accompany traumatic brain/spinal cord injuries have been linked to **oxidative stress** due to generation of excess reactive oxygen species which the body’s antioxidant system could not cope with. My **focus**, therefore, has been to investigate and identify substances that may protect the neuronal cells from **injury, degeneration and death**, thus limiting (i) **micro-anatomical alterations** and (ii) **neuronal dysfunction, and thus (ii) maintaining cellular integrity of the brain and spinal cord.**

I have used different types of free radical generating substances: [radiation (Cobalt- 60), Mercuric chloride, Lead acetate, Phenytoin, Cisplatin, Benzo[a]pyrene, Dichlorvos, trauma and induced-ischaemia via experimental vascular occlusion] to induce oxidative injury/damage in Wistar rat, thus mimicking real-life injury, and then intervening with antioxidant-containing substances like ascorbic acid, alpha-tocopherol, kolaviron bioflavonoids, natural plants products from *Vernonia amygdalina* (bitter leaf), *Lycopersicon esculentum* (tomato), *Launaea taraxacifolia* (Yanrin), *Telfairia occidentalis* (ugwu) etc. I have investigated different parts of rat's brain including: spinal cord, trapezoid nucleus, medulla oblongata, midbrain, cerebellum, cerebral cortex, hippocampal formation. Our research demonstrated the protection of the brain by these substances in rat's brain. It is important to protect our **brain and spinal cord** from injury to the head (falls toilet), trauma from accidents (home or traffic), chemical injury eg. insecticide poisoning; exposure to radiation by pregnant women, avoiding whiplash injuries by use of seat-belts while driving, care when jumping into swimming pools, use your hypertension and diabetes medication.