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The future of dementia and Alzheimer's and the unexpected bioenergetic role of neuromelanin

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Dementia means a decline in mental ability severe enough to interfere with daily life. Alzheimer's disease (AD) is the most common type of dementia. Mental functions frequently impaired are: memory, language and communication, attention, concentration, reasoning and judgment, interpretation of visual perception. Usually symptoms start out slowly and gradually get worse. Memory loss is often one of the earliest symptoms of Alzheimer's. Unfortunately, there is not a cure. So far, it is an erroneous belief that the brain gets energy burning (oxidizing) glucose. However, among the contradictions inside that theory, we have the fact that glucose and oxygen are not combined spontaneously within the blood or plasma, but until they are inside the cell, despite the combination of oxygen is abrupt and is not easily controlled. The foregoing is only a sample of the controversies that can be found in trying to explain the mechanisms by which glucose is the source of energy. In fact, glucose is the universal building block precursor, but cannot provide the energy that its own metabolism requires. Energy may be defined as everything that produces a change; our body and the brain take it from the light through the dissociation of the water molecule. The dissociation of the water molecule is performed by chlorophyll in the plants, and in the CNS the neuromelanin. Cognitive alterations in dementia and Alzheimer's are extensive, which is congruent with the observed fact that in any system, when energy is the problem, the fault is widespread. This explains that the depigmentation of the substantia nigra and the locus coeruleus are a frequent finding in dementia and AD. Brain chemical reactions are surprisingly accurate, therefore the energy they require is surprisingly accurate, and it is precisely the way neuro melanin releases energy, in the form of H₂ and high-energy electrons.

Recent Publications

1. Solis Herrera, A Arias Esparza, M C Solis Arias, P E Barreto, George Li, et al. (2016) Unsuspected intrinsic property of melanin to dissociate the water molecule can be used for the treatment of CNS diseases. *CNS & Neurological Disorders–Drug Targets* 15:2.
2. Aliev Gjumrakch, Solis Herrera, A Li, Yi Kaminsky, Yuri G Yakhno, et al. (2013) Human photosynthesis, the ultimate answer to the long term mystery of Kleiber's law or $E=M^{3/4}$: implications in the context of gerontology and neurodegenerative diseases. *Open Journal of Psychiatry* 3:408–421.
3. Solis Herrera A, Arias Esparza M C and Solis Arias M P (2013) Intracellular free chemical energy and neurodegenerative diseases. *World J. Med. Med. Sci. Res.* 1(2):012–025.

Biography

Arturo Solis Herrera has completed his MD at the School of Medicine in the Instituto Politécnico Nacional, México and Post-doctoral studies from Facultad de Medicina, de la Universidad Nacional Autónoma de México. He is the Director and Founder of Human Photosynthesis® Research Centre. He has published more than 45 papers in several journals and has been serving as an Editorial Board Member.

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