



## Environmental epigenetics and human health care under environmental exposure

Hosam E.A.F. Bayoumi Hamuda, CSc

Óbuda University, Budapest, Hungary

### Abstract:

Human is exposed to a huge number of environmental influences that have effects on epigenetic mechanisms. Epigenetics is a field in biology that focuses on inherited changes in the gene expression caused by mechanisms other than changes in the DNA sequence. Environmental epigenetics describes how environmental factors affect cellular epigenetics and, hence, the human health. A foundational goal for the people is to improve their health, which typically includes positive changes in lifestyle and especially diet. The aim of this work is to explain the fundamentals of epigenetics, the relationship the environmental factor and the medical care aspects of epigenetics with a focus on human systems, environmental epigenetics and explains the effects of diet and environmental epigenetics on human health and disease. Epigenetics explains how environmental exposures can modify gene expression and influence cell properties. Epigenetic change is a regular and natural occurrence but can be influenced by several factors such as human age, parenting, the environment, diseases and disorders, drugs and addiction, lifestyle, diet (Here, it focus on the possible epigenetic connections between improving health and consuming foods) and sport exercise. How the same genotype can give rise to different phenotypes under different environmental conditions. The initiation in a research project in the field of epigenetics explains the influence of environmental factors on the properties of cells and gene expression. Identification of the fundamental epigenetic modifications and markers help to recognize the health disorders at earlier stages of the diseases, improving treatment outcomes and quality of life for many people. Extensive research in this field would do a great deal to protect public health, both now and in future generations. More researches are required from scientific and medical community to view human

### Biography:

Dr. Hosam Bayoumi Hamuda is a professor at Óbuda University, and he is the president of International Council of Environmental Engineering Education, member of agriculture committee of Hungarian Academy of Sciences, etc. He is Environmental Microbiologist and Soil Biotechnologist dealing with the interactions between microbiomes and environment for increasing soil quality and saving the environment from pollutants. His investigations are on the role of waste management, agroproductivity and environmental impacts related to the application of organic wastes to soil to assess: soil quality, microbial inoculants; nitrification inhibitors; monitorization



of organic matter; measurements of rhizosphere and soil microbial biomass, enzymatic activities in wastewater sludge amended soils; microbial composition in the polluted environment and roles of engineered metal oxide nanoparticles in biosphere. Also, Dr. Bayoumi is interested in the roles of engineered metal oxide nanoparticles in biosphere, public health and health care; bioengineering; probiotics, antibiotics, xenobiotics and human gut microbiomes.

### Recent Publications:

1. Bickell.N., et al. Do Community-Based Patient Assistance Programs Affect the Treatment and Well-Being of Patients With Breast Cancer? : *Journal of Oncology practice* Jan 2014;10(1):48-54
2. David H. Howard. Drug Companies' Patient-Assistance Programs –Helping Patients or Profits? : *n engl j med* July 2014:97-99
3. Linda Burhansstipanov, Alisa Gilbert, Khari LaMarca, Linda U. Krebs. An Innovative Path to Improving Cancer Care in Indian Country : *Public Health Reports* September–October 2001;116 :424-33
4. Niteesh K. Choudhry, Joy L. Lee, Jessica Agnew-Blais, Colleen Corcoran and William H. Shrank. Drug Company-Sponsored Patient Assistance Programs: A Viable Safety Net? : *HEALTH AFFAIRS* June 2009;28(3):827-834
5. Tisha M. Felder, Lincy S. Lal, Charles L. Bennett, Frank Hung and Luisa Franzini. Cancer patients' use of pharmaceutical patient assistance programs in the outpatient pharmacy at a large tertiary cancer center : *Community Oncol.* 2011 June 1; 8(6): 279–28

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