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## Nine Months in Womb vs. Ninety Years in the World.

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Circumstantial as well as substantial evidence suggest that both Maternal and Environmental conditions during gestation affect the offspring throughout life in the world! What is the scientific basis of this “influence”? Is it a mundane transformation of the genetic code (e.g. gene mutations)? Or is it a more subtle, sublime change in genetic expression i.e. the Epigenome?

Fetal Origin Hypothesis suggests three ways in which maternal conditions affect the offspring: 1. Latency: Health-related outcomes during gestation may remain latent for long time, only to emerge later in life. 2. Persistence: The adverse outcomes during gestation become apparent right at birth and may persist throughout life. 3. Fetal Programming: The effects of environment are primarily expressed in the “Epigenome”, rather than the genes per se.

In simplest terms, Epigenome is defined as “Series of switches that cause various parts of Genome to be Expressed or NOT(Switch on/off). The period when the Fetus is in the Womb is particularly important for setting these Switches. Waddington(1940) defined Epigenome as “Changes in an individual’s Genetic Code that can alter Gene Expression without changes in DNA Sequence and are passed from one cell generation to next”

Several Internal and External conditions have been hypothesized to influence Epigenome in Utero.: Internal factors pertaining to mother can be Maternal Stress, Diet, Drugs and Habits, which include Smoking, Alcohol(Fetal Alcohol Syndrome). Feeble-mindedness(inheritable feeble-mindedness which leads to Intellectual disability, Learning disabilities and Mental illness: Kallikak family). External factors can be Environmental Pollution, Flu Pandemic and other infections, overall nutritional conditions (e.g. Dutch Hunger Winter 1944, which affected fertility), weight during pregnancy, maternal blood pressure and infant birth weight.