

Genetic and Environmental Factors Influencing Embryological Errors lead to congenital alformations: Search for possible improvements

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Abstract

In the entire biological world including microorganisms, it is the female strain/ female sex, which has been bestowed exclusive responsibility by the evolutionary plasticity for "conceiving" (becoming diploid by way of gemetes) and later nurturing the developing embryonal stages until the birth of next generation offspring. In this evolutionary compulsion, though genetically, both male and female "parent" contribute almost equally (50:50 for nuclear genes; but female gamete may have extra cytoplasmic genes in mammals), but the female parent has to depend on external environment, dietary intake and several harmful exposures. Therefore, embryological developments are terribly prone to lot many environmental factors besides being dependent on gene combinations in the developing foetus for thousands of traits shaping within an individual, to be born. The developmental defects or malformations simply mean "traits present at birth", which in turn are again two types; external malformations or developmental errors (features) which we can immediately see and the internal congenital malformations which we cannot immediately see. The new generation individual has two phases, gross features which we can see or, are External and, Internal traits or organs which we cannot see. Considering situations in our species, we are more than selfish in improving over hundreds of malformations and or developmental errors. Congenital anomalies in general populations will be presented on the following order with comments on their possible aetiology; role of genetic factors and role of environmental factors.(A) Simple anatomical errors : Digital errors in palms and soles Polydactyly, Internal:- Crossed Renal ectopia; (B) Major orthopaedic anomalies involving skull, limbs etc; (C) Inborn errors of metabolism influencing congenital defects and internal developmental errors. Citing examples on published work, this presentation will focus on some very important and most relevant suggestions regarding : change in dietary or eating habits (consumption of addictive drugs) , adaptive attitudes towards herbal medicines and strict avoidance of consanguineous marriages.

Biography

Professor Dr Hit Kishore Goswami was born in Datia (MP) India on 01-06-1942. He received all his education in MP and did his M.Sc. in Botany ; Ph.D. Genetics , and although served as a teacher in schools colleges and University of Bhopal. He retired as a Professor of Genetics from the Barkatullah University in 2004. His teaching and research experiences are too versatile; published around 220 research papers and he has lectured in 18 countries . Major areas have been plant, animal, and Human Population genetics, cancer cytogentics and evolutionary genetics. Many of his discoveries are cited world over in books, monographs and hundreds of research papers published by a large number of scholarly publications. Discoveries in Human Genetics are cited in Mc Kusick's Volumes.

Recent Publications:

- 1. Goswami, H K (2015) Human Genome is Billions of Years older than man: A reemphasis on Random Distribution of DNA sequences during early phases of evolution.Bionature 36:35-43
- 2. Goswami H K (2016) Cells With Chromosomal Aberrations Trigger Neoplastic Transformations in Humans. Twin Research and Human Genetics Volume 19 Number 1 pp. 77–79
- 3. Goswami, H K (2017) Is tendency to recurrently abort, a rejected malignant activity in developing embryonic tissue ? Obstet Gynecol Rep, Volume 1(2): 2-3 (doi: 10.15761/OGR.1000112.
- Goswami HK (2017) Gross Chromosomal Aberrations Are Early Alarms for Malignancy: A Re-Emphasis. Hereditary Genet 6: 187. doi:10.4172/2161-1041.1000187
- 5. Goswami, H K (2018). Routine Orthopedic Clinics can Detect Genetic involvements. Ortho Surg Ortho Care Int J .1(3). OOIJF.000514.



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