

Chiropractic Update



Update 17

Genetic Determinism??

During the course of a recent health class, which all prospective patients attend before starting care in our office, a patient suggested that all the chiropractic care and lifestyle modifications under the sun wouldn't improve his health because he had inherited a gene for heart disease from his father. Moreover, the patient went on to contend that he knew he would die from a heart attack at about the same age, as had both his father and older brother.

This raises the question,

“Are we ‘Genetically programmed’ or are we and our genes shaped more by environmental cues?”

Although most biomedical researchers have come to believe that the development, structure, function and health of a living organism is regulated and controlled by genes, a number of recent studies suggest that we should not be quick to concede that genes are self-regulatory switches that are pre-programmed to control who and what we are. The findings from a number of recent studies are worth reflecting upon -

The first study (1), which asks whether cloned animals vary as much in appearance and behaviour as those born naturally, throws new light on an old dogma regarding the extent to which genes predetermine who we are.

It is widely accepted that a cloned animal will be a carbon copy of its parent.

In order to test this widely held belief, the authors of a new study compare clones and naturally bred control pigs using a series of physiological and genetic parameters. The authors found that some traits, either due to epigenetic dysregulation, or environmental effects, exhibit a high degree of variability regardless of genotypic similarities (note; that what the researchers are suggesting is that the variability is the result of the following sources - a) the method of cloning might cause small genetic abnormalities, and/or b) small environmental differences between animals may have large developmental consequences). Furthermore, the results suggest that the degree of variability within a cloned litter, can even exceed that seen in control litters of naturally born pigs. While the tests showed that the cloned pigs had identical DNA, they showed just as much diversity as the normal litters across a range of physiological, physical, and behavioral traits. In a recent interview, the lead author stated,

“It is really clear that genes are not the whole picture, that some environmental levels are so strong that you can not control them even if you try.” (2)

This new research on cloning supports the findings from previous medical research that looked at the role of genes and environment in cancer. The July 13, 2000 edition of the New England Journal of Medicine contains an editorial, by researchers from Johns Medical Institute and St. Thomas' Medical School, which is relevant to our discussion. I quote:

“... the new genetic mantle may prove to be like the emperor's new clothes....we argue that the new genetics will not revolutionise the way in which common diseases are identified or prevented... Other factors, such as the environment, can have a substantial role... Those who make medical and science policies in the next decade would do well to see beyond the hype.” (3)

In the very same edition of NEJM is a cohort study that concludes,

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“Inherited genetic factors make a minor contribution to susceptibility to most types of neoplasms. This finding indicates that the environment has the principle role in causing sporadic cancers.” (4)

People’s health is not predetermined by their genetic makeup. Health, and its absence, is born out of life’s dance. One scientist who doubts the idea of genetic determinism is Bruce Lipton PhD.

Lipton, formerly an associate professor of anatomy at the University of Wisconsin’s school of Medicine and a Fellow in the pathology department at the Stanford University’s School of medicine has stated,

“Genes are indeed involved with the structure and behaviour of an organism, however they are not the source of control. When a gene product is needed, a signal from its environment, not a self-emergent property of the gene itself, activates expression of the gene. These regulatory environmental signals appear to be, in part, related to DD Palmer’s concepts of universal and innate intelligence”. (5)

References:

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