

Epigenetics, Emotions and Healing

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Have you ever heard someone say "I'm sick and tired..."? They probably are, or will be.

Chronic heightened emotional states create a perfect breeding ground for illness. It was through my practice with thousands of people that I noted the increasingly obvious relationship between one's mental focus on negative thinking, emotions, resistance to experiencing feelings and disease.

Thousands of years before epigenetics and psychoneuroimmunology (PNI), the Chinese Five Element Theory and Body Clock lead the way to understanding the relationship between emotions and disease. The theory of the Five Elements or Wu Xing, is an ancient system, dating back to the 4th century BC. Wu means five, and the Chinese word xing is often translated as "element".

The Five Elements are symbolic for the different phases, or primal forces within the universe, nature, and our bodies. Each element is also attributed to a certain personality archetype. Knowing which element(s) predominates our personalities can help further insight into our lives and relationships. The Five Element theory describes how the different organ systems are interrelated, and is used in traditional Chinese medicine to diagnose patterns of disharmony and disease.

This diagnostic tool connects meridians of the body to emotions, organs, and glands. In turn, each emotion has a corresponding electromagnetic energy pattern. Since acupuncture meridians are energy channels corresponding to organs, and each organ stores specific emotions, we can easily see the relationship between disease and our thoughts, identities and belief systems.

Psychoneuroimmunology

PNI's major focus has been the study of stress and how the body's stress response relates to the emotions of anxiety, fear, guilt, anger and sadness, weaken the immune system, interfere with healing and even cause disease. For physical health and well-being, we need to be able to effectively release stressful emotions from the body and cultivate a more balanced state.

The immune system and the brain talk to each other through signaling pathways and they are the two major adaptive systems of the body. Two major pathways are involved in this cross-talk: the hypothalamic-pituitary-adrenal axis (HPA axis) and the sympathetic nervous system (SNS). The activation of SNS during an immune response might be aimed to localize the inflammatory response. The body's primary stress management system is the HPA axis. The HPA axis responds to physical and mental challenges to maintain homeostasis in part, by controlling the body's cortisol level.

The rapidly expanding fields of PNI and epigenetics have sound answers to healing the root cause of disease. In times of stress, a negative message absorbs into our unconscious mind; we reinforce these by focusing on them for some period of time. When you negatively judge yourself you are reinforcing, even instructing your unconscious mind to persist with the behavior. Research tells us that this information is then transmitted to all our cells! Our cellular intelligence is designed to self-heal but most patients aren't aware of this fact. Moreover, every time we think about something we don't want, we actually draw it to us.

A healthy internal environment includes empowering identities, which stimulate positive belief systems and emotions. As Carl Jung's research revealed: a persona is an identity (unconscious, pre-existent disposition) we hold, which we present to the outside world. This persona propagates beliefs which in turn stimulate emotions. Most identities are unconscious and specific ones may be connected to genetic predispositions.

Understanding Why Patients Experience Stress

Clearly, stress is the uncomfortable gap between:

- a) how we would like our life to be, and
- b) how it actually is.

If this gap is persistent and growing despite our efforts to reduce it; the distress becomes acute.

Understanding Epigenetics

In biology, epigenetics is the study of changes in phenotype (appearance) or gene expression caused by mechanisms other than changes in the underlying DNA sequence, hence the name epi- (Greek for over, above)genetics.

Traditional science has believed that our genes are fixed and that nothing can change genetic determinism.

Conversely, the new biology of epigenetics is proving that cells are responsive to their environment and that these responses reach deep into the internal structure of the cell, including the DNA.

It is proven that cells have a dynamic cellular intelligence; research indicates that genes are being turned on and off based on environmental factors. What is most exciting and empowering is that if the environment that supports the disease is eliminated, and a new healthier environment replaces it, the predisposition for the genetic disease will not be supported and it will not manifest.

[pb]The discovery that cells are responding to the internal environment of our thoughts, beliefs and feelings gives all of us hope that changing our behaviors literally produces biological changes on the cellular level.

Epigenetic research reveals the following:

- Genetics are controlled by perception of our environment NOT genes.
- Genes do not control who you are nor your biological expression.
- Genes adapt to your beliefs and identities
- Genes cannot turn themselves on or off; the organism changes to adapt to the environment.

Methylation

Let's review another potential link between epigenetic processes and disease called methylation.

Methylation is the passing of a chemical fragment called a methyl group (a carbon atom linked to three hydrogen atoms) from one molecule to another. This chemical "tag" acts as an all-important signal and structural modification throughout our bodies (Mitchell 1998). Although there are many uses of methylation, DNA methylation is one of the essential, and one of the most important uses of methyl groups. If methylation of DNA is limited or prevented, mouse embryos won't develop and life just stops (Li et al. 1992).

DNA methylation was the first epigenetic alteration to be observed in cancer cells.

Hypermethylation of CpG islands at tumour suppressor genes switches off these genes, whereas global hypomethylation leads to genome instability and inappropriate activation of oncogenes and transposable elements.

It appears that genomic DNA methylation levels, which are maintained by DNMT enzymes, are delicately balanced within cells; over-expression of DNMTs is linked to cancer in humans, and their deletion from animals is lethal.

Furthermore, methyl cytosine is capable of spontaneously mutating in vivo by deamination to give thymine. Indeed, 37 percent of somatic p53 gene mutations (and 58 percent of germ-line mutations) occur at methyl CpGs, and these mutations are strongly implicated in the cause of cancer.

A number of factors can influence the DNA methylation levels of a cell without requiring a change in genomic DNA sequence.

- Aging: With aging in certain tissues there is a general tendency for the genome to become hypomethylated whereas certain CpG islands become hypermethylated, a situation reminiscent of that found in many cancer cells. Whether this age-dependent change in DNA methylation is linked to the increased cancer incidence in later life remains to be determined.
- Diet: Nutrition supplies the methyl groups for DNA (and histone) methylation via the folate and methionine pathways. Importantly, mammals cannot synthesize folate or methionine and so a diet low in these compounds leads to alterations in DNA methylation. These changes have been associated with cancer.
- Environment: Many toxic agents such as arsenic and cadmium can have profound effects on DNA methylation. Arsenic causes hypomethylation of the ras gene whereas cadmium induces global hypomethylation by inactivating DNMT. You can detoxify arsenic and cadmium with both homeopathic medicine and a whole body detoxification.

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