

Unraveling the Biological Bases of Prevention

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The term holistic (from the Greek holos: whole, everything) is becoming increasingly relevant in recent times in reference to people's health. Oriental Chinese medicine and other ancient medicines have typically addressed the management of pathology with a consciousness of unity, but with more or less success. The technological and instrumental advances and the specialization of western medicine led to the management of many diseases by focusing on each system, organ or apparatus separately. Consequently, the target diverted from the whole and oriented towards the parts. Of course, this was necessary. This specialization led to a greater understanding of the pathophysiology of many diseases and resulted in unimaginable enhancement in medicine and people's wellness. We have the ability to cure diseases that were once lethal. People are indisputably living longer (life span) and many diseases are appearing later (health span).

However, this positive trend seems to have reached a ceiling, or, at least, a slowdown. Many illnesses with complex and multifactorial etiology that are difficult to treat and usually become chronic, decreasing the quality of life of those who suffer from them. There is a need, therefore, to continue to deepen the knowledge of the etiology and pathophysiology of complex diseases, but in parallel, it is time to highlight the importance of their prevention. It is important to understand that prevention requires conceiving the human as a whole, as a set of interconnected systems that interact in a holistic way. Due to the great complexity of the brain's structure and its role as a central regulatory node, this is especially important if we want to better understand the biological bases of neuropsychiatric diseases.

Some questions naturally emerge, eg., what we eat, how much we eat and at what time we eat; what kind of physical activity we do and how many hours a week we exercise; what cognitive stimulation we receive and when we receive it; how we breathe, how we think and how we relate. These are all factors that shape the structure of our brain, making it more susceptible or resistant to pathology. Nutrition, physical activity and stress management are three pillars capable of directly or indirectly modifying the expression of genes related to neuronal growth, synaptic plasticity and neuronal survival. Moreover, they have a direct impact on the microbiota, whose interaction with the nervous and endocrine systems seems to be increasingly significant. We are living in the era of epigenetics and we must give the environment the importance it deserves.

I encourage us to continue researching in the field of prevention in a methodical and rigorous way. Broadening our knowledge in prevention also opens up avenues in the search for new therapeutic targets, especially now that genetic modification therapies seem realistic. Now, we have more than enough information to give clear guidelines to the population on how to prevent or delay the onset of many neuropsychiatric diseases and we must make a conscious effort to do so.