

COLLABORATIVE WRITING PROJECT

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CLINICAL NUTRITION ADVICE IN CHRONIC DISEASE THROUGH A LENS OF TRAUMA

As a clinical nutritionist, I typically see clients with a range of health concerns, most of which include chronic problems such as digestive issues, metabolic dysregulation, auto-immunity, low energy/fatigue, emotional eating, and poor mental health. Whilst these are the presenting concerns, many represent the tip of an iceberg of other underlying health issues. Improvement is seldom complete by adopting a purely nutritional approach; a fact to which I can attest in my personal health challenges. As a medical doctor, my approach to ill health has always been heavily embedded in the traditional western medical paradigm of relating symptoms to pathophysiology in the attempt to achieve a specific diagnosis. However, when it came to addressing my own health issues of chronic fatigue, digestive issues, chronic pain and eventually cancer, I came up short. This led to my own search for help, which proved time-consuming, often frustrating, and plagued by hopes repeatedly raised and dashed.

It was not until I began to discover that there was a unifying phenomenon to all my chronic complaints, in the shape of specific personality traits common to both cancer (1) and chronic pain (2), that things began to make sense and a healing pathway to open up before me. I learned about Robert Naviaux's theory of the cell danger response (CDR), an "evolutionarily conserved" metabolic mechanism which protects cells from stress (3). This stress includes physical and emotional triggers. A significant body of research is now emerging which supports Naviaux's postulate that "an understanding of the CDR permits us to reframe old concepts of pathogenesis for a broad array of chronic, developmental, autoimmune, and degenerative disorders" (4). To think that all these pathologies are linked at the *cellular* level across many body systems, is indeed a paradigm shift!

As clinical nutritionists, it is essential that we hold an awareness of the potential for the presence of an underlying disturbed biology due to a variety of past traumas experienced by our clients. This should inform, and indeed be the foundation, of our advice. This article considers the role of past trauma in chronic illness and suggests ways in which the clinical nutritionist might incorporate this understanding into the overall care plan.

Patients with diverse health concerns consult a clinical nutritionist. Traditional approaches to the development of a care plan include taking a comprehensive history and performing a physical examination. Usually the focus is on alleviating the most pressing symptoms which prompted the client to seek nutritional advice. Using this information, the nutritionist will likely formulate a working diagnosis based on one or more organ systems being dysfunctional. The treatment plan then includes dietary and lifestyle suggestions aimed at improving the client's sense of health and wellbeing. Within this context it is unlikely, and perhaps even considered inappropriate, that the nutritionist suggests that past experiences, developmental or even prenatal, could be playing a role in the client's current state of health.

There is much stigma associated with the concept of "psychosomatic illness", many clients feeling dismissed by this suggestion as therefore not having real, physical complaints (5). Moreover, both the

practitioner and client may feel this is beyond the scope of nutritional support, and resist exploring its role.

The Biology of Trauma

The evidence is accumulating, however, that there is a unifying theory underpinning many chronic diseases, and if we truly want the best for our patients we need to develop the confidence to consider the biology of trauma, and develop treatment protocols for our clients which acknowledge this dimension.

Cell Danger Response

In 2013, Robert Naviaux presented his theory of the cell danger response (CDR)(3) and discussed the metabolic consequences to cells when they are exposed to stressors, whether physical, chemical or biological, which are greater than the cellular capacity to restore itself to balance. Ideally, once the threat has been overcome the cells initiate a series of anti-inflammatory and restorative processes which are aimed at restoring cellular health. In certain circumstances, however, and influenced by a variable combination of genetics and the precise nature of the stress in terms of age of onset, frequency, severity and duration, the CDR becomes dysfunctional and persists, manifesting at a later stage as chronic disease. This is the downstream effect of the maladaptive CDR whereby the metabolism of the whole organism is impaired, the gut microbiome is disrupted, and multiple organ systems become dysfunctional. The implications of this theory for a fresh understanding of the underlying biology of many types of chronic, developmental, inflammatory and degenerative conditions is profound (3).

It is also apparent that psychological trauma, especially during childhood, is able to activate this CDR, increasing the chances of developing a chronic condition in later life. Ehlert (6) highlights the accumulating evidence of the inter-relatedness of an individual's genetic make-up, epigenetic influences and stress-induced endocrine and immunological disruptions, aka the "maladaptive stress response" (7), with both psychiatric and biological sequelae.

Ideally, we are designed to be biologically resilient, enacting psychological and physiological restorative processes which enable our systems to return to their baseline. This process is known as allostasis (8), and it is this that can go awry. When the stressors we encounter are too great, or our coping mechanisms inadequate, disease results.

The "fight or flight" response of our nervous systems to acute stress is well known to us all. Part of the outpouring of "stress hormones" results in activation of the immune system, the acute inflammatory response, accompanied by a flood of inflammatory mediators with wide-ranging effects. All of this should resolve once the threat has passed, but if it remains activated, the body shifts into a state of chronic inflammation and it is this that has been shown to be the basis of almost all chronic disease (9).

Not only is the immune system activated, but the autonomic nervous system, which coordinates the stress response, may become dysregulated due to unresolved, or excessive, trauma. It may then become activated by sub-consciously perceived threats, resulting in bodily systems that become dysfunctional. Importantly, particularly to those who practise nutrition therapy, intestinal function becomes disturbed as characterised by altered gut microbiota, abnormal intestinal permeability

which allows toxic and immunogenic molecules access to the bloodstream, and often altered food choices as our clients seek relief for their digestive distress. We need to understand the back-drop to this symptomatology if we are to help our clients with chronic illness to find lasting relief. Published research shows increasing evidence to support a connection between the microbiome, the gut and mental health. Gut microbes can influence the gut-brain axis through their metabolism, affecting a variety of neuro-active compounds such as the mood-influencing neurotransmitters, serotonin, glutamate, dopamine and GABA (10).

Polyvagal Theory

Polyvagal Theory (11) provides an explanation for the evolution of adaptive processes integrating homeostatic, psycho-social and danger responses which may result in the development of disease. In mammals there are three separate, but interrelated, components to the autonomic nervous system (ANS). They are essentially under subconscious control via a process of “neuroception”, which modulates them moment-by-moment according to perceptions of safety or harm (12). The phylogenetically oldest component is the dorsal vagus system (DVS) which has roles both in homeostasis and the response to danger. The DVS is necessary for normal digestive processes distal to the esophageal sphincter. If this system malfunctions, it could result in slowing of gastro-intestinal motility with symptoms of indigestion such as nausea, bloating, abdominal pain and constipation, familiar complaints to the nutritionist. The sympathetic nervous system (SNS) mediates the typical “fight or flight” response to stress. According to polyvagal theory, when activated by a stressor this system disrupts digestion and down-regulates cellular metabolism to conserve resources. Chronic stress may thus have long term deleterious effects on diverse bodily systems. The newest part of the ANS to evolve is the ventral vagus complex (VVC), which supplies the viscera above the diaphragm. Under normal conditions it slows the heart and promotes a calm, relaxed, socially supportive state. It acts to oppose the danger-related aspects of the SNS and DVS (13). Thus modulation of this part of the vagus nerve may have beneficial therapeutic effects (14).

Presentation, Assessment and Treatment Plan

Veronique Mead, a medical doctor who became ill with ME/CFS, has researched widely for evidence of a link between trauma and chronic illness (15). Considerable research has been undertaken for the role of trauma in Multiple Sclerosis, but she also lists studies supporting this connection in a wide range of chronic conditions from asthma to autism, some even finding links between intrauterine stress and subsequent disease in adult life.

The commonest patterns of illness which have been linked to somatic expressions of trauma include digestive issues, fatigue, chronic pain and auto-immune conditions (16).

In light of the all-pervasive possibility of biological trauma underlying a client’s presenting concerns, the functional clinical nutritionist should always consider addressing trauma as an intervention point as essential as the others in his or her toolbox. However, one needs to be mindful of the potential to trigger unwanted memories or emotions too early in the client-therapeutic relationship. It pays to take some time to think through, and prepare, a sensitively worded approach to the topic. Intentionally making connection to evidence-based studies of adverse life experiences, whether in childhood and/or later, can be helpful.

As nutritionists, our overarching therapeutic goal is to restore balance to the body's delicate biochemical processes which enable health. An awareness of the effects of experiential trauma on these systems then leads us into the territory with which we are perhaps more comfortable addressing: identifying and restoring imbalances. Working in partnership with the client's physician, we may recommend certain laboratory investigations to identify inflammation, nutrient deficiencies and/or imbalances.

Our prescriptions of healing diet plans and supplements are devised to achieve this end. We may advise anti-inflammatory diets and targeted supplements based on our assessment of the underlying pathology. The latter may include specific amino acids to boost dysfunctional mood states which often accompany those with chronic illness (10, 17). We will also likely advise our clients regarding lifestyle support in terms of addressing sleep, exercise, stress-management approaches (such as yoga and meditation) and avoidance of environmental toxins.

Since the physical symptoms with which our patients present represent the biological results of trauma, it is imperative to add specific support to help our clients identify and release the unprocessed ("stored") trauma and adopt new patterns of managing and integrating mind and body as they move towards a healthier, happier future. Somatic Experiencing^R is one such practice which has shown promising results in ameliorating somatic expressions of trauma (18). Developing a relationship with a practitioner specialising in this work is strongly recommended. Obviously, commencing this work at the start of our own therapeutic advice to our clients is best so that the nutritional interventions we suggest can support healing without the antagonism of ongoing unhelpful stress responses.

Chronic illness is a major burden on individuals, their families and friends, therapists and even governments due to the economics of providing care to sick societies (19). An understanding of the role of trauma underlying many of these diseases is imperative if we hope to be successful in addressing and even reversing this tragedy. As nutritionists we are ideally placed to play our part.

Let us step up and incorporate this new knowledge into our practices and be willing to have the conversations, remove the stigma and replace it with hope for healing. This will then ripple out from our clients into our communities through their significant relationships at home and in the workplace.

REFERENCES

1. Gollszek, A. (2014). Is there a cancer-prone personality? Retrieved from <https://www.psychologytoday.com/us/blog/how-the-mind-heals-the-body/201411/is-there-cancer-prone-personality>
2. Naylor, B., Boag, S. Gustin, S. M. (2017). New evidence for a pain personality? A critical review of the last 120 years of pain and personality. *Scand J Pain* 17:58-67 Retrieved from <https://pubmed.ncbi.nlm.nih.gov/28850375/>
3. Naviaux, R. K. Metabolic Features of the Cell danger Response (2014). *Mitochondrion* 16: 7-17. Retrieved from https://naviauxlab.ucsd.edu/wp-content/uploads/2016/09/cell_danger_response.pdf

4. Mead, V. (2018) The Cell Danger Response: The New Disease Paradigm (100 Chronic Illnesses such as Diabetes, ME/CFS, Autoimmune Diseases and more) Retrieved from <https://chronicillnesstraumastudies.com/cell-danger-response-disease/>
5. Ko, C., Lucassen, P., van der Linden, B., Ballering, A., Hartman, T. O., (2022). Stigma perceived by patients with functional somatic syndromes and its effect on health outcomes – A systematic review. *Journal of Psychosomatic Research* Volume 154, 110715
<https://www.sciencedirect.com/science/article/pii/S0022399921003603>
6. Ehlert, U. (2013). Enduring psychobiological effects of childhood adversity. *Psychoneuroendocrinology* Volume 38, Issue 9, Pages 1850-1857. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0306453013002242>
7. Howard, A. (2021). Are you in a healing state? In *Decode your Fatigue*. page 97. Hay House, England.
8. Sterling, Peter & Eyer, Joseph. (1988). Allostasis: A New Paradigm to Explain Arousal Pathology. *Handbook of Life Stress, Cognition and Health*. Retrieved from https://www.researchgate.net/publication/232601628_Allostasis_A_New_Paradigm_to_Explai_Arousal_Pathology
9. PUNCHARD, N.A., WHELAN C. J., and ADCOCK, I. (2004). *J Inflamm* 1, 1 . Retrieved from <https://doi.org/10.1186/1476-9255-1-1>
10. Valles-Colomer M., Falony G, Darzi Y, Tigchelaar EF, Wang J, Tito RY, Schiweck C, Kurilshikov A, Joossens M, Wijmenga C, Claes S, Van Oudenhove L, Zhernakova A, Vieira-Silva S, Raes J. 2019. The neuroactive potential of the human gut microbiota in quality of life and depression *Nat. Microbiol.*4(4):623-632. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/30718848/>
11. Porges, S. W. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A Polyvagal Theory. *Psychophysiology*,32, 301–318. Retrieved from <https://doi.org/10.1111/j.1469-8986.1995.tb01213.x>)
12. Porges, Stephen W. (2004). Neuroception: A Subconscious System for Detecting Threats and Safety. *Zero to Three (J)*, v24 n5 p19-24. Retrieved from <https://eric.ed.gov/?id=EJ938225>
13. Kolacz, J., Kovacic, K.K., Porges, S.W. (2020). Traumatic stress and the autonomic brain-gut connection in development: Polyvagal Theory as an integrative framework for psychosocial and gastrointestinal pathology. *Developmental Psychobiology*. 2019;1–14. Retrieved <https://integratedlistening.com/wp-content/uploads/2020/10/kolacz-kovacic-and-porges-2019-traumatic-stress-and-the-autonomic-brain-gut-connection-in-development.pdf>
14. Bonax, B., Bazin, T. and Pellissier, S. (2018). The Vagus Nerve at the Interface of the Microbiota-Gut-Brain Axis. *Front. Neurosci.*Feb 7;12:49. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/29467611/>
15. Veronique Mead (2014). Trauma and Chronic Illness: 19 Characteristics that Can Make Sense of Symptoms (Summary of the Science) Retrieved from

https://chronicillnesstraumastudies.com/trauma-and-chronic-illness/#Insights_for_Treating_Chronic_Illness

16. Meyers, S. (2000). Use of neurotransmitter precursors for treatment of depression. *Altern Med Rev*.5(1):64-71. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/10696120/>

17. Van der Kolk, B. *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*. Penguin NY 2014 as summarised by Tiago Forte retrieved from <https://fortelabs.co/blog/the-body-keeps-the-score-summary/>

18. KuhfuhB, M., Maldei T., Hetmanek A., Baumann N. (2021). Somatic experiencing – effectiveness and key factors of a body-oriented trauma therapy: a scoping literature review <https://www.tandfonline.com/doi/full/10.1080/20008198.2021.1929023>

19. Holman, H. R. (2020). The Relation of the Chronic Disease Epidemic to the HealthCare Crisis. *CR Open Rheumatol*. 2020 Mar; 2(3): 167–173. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7077778/>