



## THE BI-DIRECTIONAL EFFECT OF GASTRIC AND PSYCHOLOGICAL CONDITIONS

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Over the past few years, more scientific research has focused upon the interrelation of body systems, and how their dysfunction can impact each other. Detailed patient case histories often reveal that there is never a single symptom or sign which will not have consequentially implicated another. In many of these cases, there is often a significant involvement of the digestive system at the core of immunologic, endocrine or mental health problems to name but a few.

### DYSBIOSIS

Dysbiosis is a term which is very often haphazardly used, however its implications for holistic health should never be disregarded. Basically, intestinal dysbiosis is a disruption of the normal microflora within the intestinal tract. Our gastrointestinal system contains a fragile ecosystem of over 500 bacterial species.<sup>1</sup> These beneficial bacteria perform an essential role in the synthesis of certain vitamins, regulation and stimulation of the immune system, protection of the intestinal barrier defense system, production of short chain fatty acids and lowering levels of potential neurotoxic components.<sup>2</sup>

### WHAT ARE THE SYMPTOMS?

Much of the general public have little understanding of this delicate environment within their digestive tract, however commonly present with bloating, flatulence, fatigue, headache, chronic joint pain, malnutrition and a feeling of 'not quite right'. Utilization of integrative medicine pathology such as Comprehensive Digestive Stool Analysis (CDSA) can assist practitioners in the diagnosis of dysbiosis.

### WHAT ARE THE CAUSES?

It is easy to conclude that the perils of our modern lifestyles play a large contributing role to this imbalance; consuming a poor diet high in refined sugar and low in soluble fibre, recurrent antibiotic therapy, hypochlorhydria, food sensitivities/allergies, excessive alcohol intake and NSAID use.

Many of these causes are identified and addressed within the initial treatment strategy; however stress seems to be merely considered and well accepted as part of our busy lifestyles, with very little immediate consideration of its impact upon gut function. Recent research has linked mental health conditions such as major depressive disorder with lowered beneficial gut bacteria populations.<sup>1</sup> Logan and Katzman also proceed to discuss the compounding effect of increased cytokine production in depressive states leading to reduced gastric acid secretion as mentioned in issue 129 of Bio Concepts Nutritional news. Hypochlorhydria or low stomach acid is one of the initial conditions which may lead to dysbiosis, as the body's first line of defense mechanisms in killing ingested harmful bacteria is reduced. Nutritional options for enhancing hydrochloric acid secretion and assisting first line digestion of proteins and carbohydrates include betaine hydrochloride, pepsin and glutamic acid.

### IMPACT OF DYSBIOSIS ON MENTAL HEALTH

Bacterial overgrowth in the intestinal tract has further repercussions for mental health as absorption of fat, carbohydrates, protein and B vitamins are compromised.<sup>1</sup> With some neurotransmitters, the amount of biochemical precursors present in the brain can influence the rate of synthesis.<sup>3</sup> These certain co-factors such as amino acids i.e. tryptophan, tyrosine and phenylalanine as well as minerals and vitamins such as iron and vitamin B6 are essential. Without these integral co-factors, vital neurotransmitters may be placed out of balance leading to mental health conditions such as depression, anxiety or sleep disturbance.<sup>3</sup>

Optimal digestive function is required to assimilate and absorb these nutrients. Therefore it is wise to ascertain the patient's digestive ability and function early. It has also been well observed that patients suffering depression commonly exhibit low levels of folic acid, zinc and vitamins B12 and B6.<sup>4</sup>

Another factor to consider is the increased incidence of leaky gut syndrome with dysbiosis and its impact upon mental health. Leaky gut is characterized by the inability of the intestines to prevent the 'leakage' of large particles through the intestinal wall. This increase in permeability results in an inflammatory cascade as well as placing further burden on the liver to detoxify the leaky gut metabolites. The associated gut inflammation eventually disrupts the integrity of the gut mucosal lining and poses potential damage to the brain due to the release of cytokines. These cytokines normally regulate immune function; however research has demonstrated that these mediators have been associated with neurotransmitter balance due to their ability to cross the blood brain barrier.<sup>5</sup>

### **PSYCHOLOGICAL CONDITIONS IMPACT ON GUT FUNCTION**

The influence of stress upon the integrity of the gastrointestinal system has been the subject of research in both animal and human studies. Recent in vivo studies have demonstrated that treatment with probiotics may have the capacity to prevent chronic stress induced intestinal abnormalities and prevent the translocation of detrimental bacteria.<sup>6</sup> Other studies have shown that certain flora species such as lactobacilli and bifidobacterium have heightened sensitivity to emotional stress.<sup>7</sup>

In light of recent research of the impact stress plays on the role of gastrointestinal health, it may be wise to also include long term treatment options addressing the health of the nervous system, the gut-brain connection and chronicity of their stress. Assisting the patient by addressing nutritional co-factors necessary for optimal brain chemistry and hydrochloric acid secretion, prescribing a broad spectrum probiotic as well as providing stress coping mechanisms could be of great benefit to the patient and their compliance.

It is important to remember when supporting your patients' mental health that the assessment and treatment of the gut is necessary for optimal results. As gastrointestinal dysfunction can impact mental health, similarly it is important to remember the bi-directional effect – and that psychological conditions may also impact on digestive function.

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#### References

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