

Gut reaction

New research indicates that if you're suffering with depression, it's not all in your head. Investigating the body, particularly the gut, can lead to more holistic and effective treatment of mental health problems

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All of us will have felt heavy, burdened and emotionally challenged at different points in our lives – perhaps as a result of an event or series of stressful situations – but usually we bounce back. A diagnosis of clinical depression, however, is different. Characterised by a longer period of sadness or persistent loss of interest in normal activities, the despair doesn't go away.

The World Health Organisation cites depression as the leading cause of ill health and disability worldwide with more than 300 million people now living with the condition. In the UK alone it is estimated that one in five adults is affected by anxiety or depression as are a third of teenage girls. These statistics are alarming and, unlike many physical signs of poor health, there is a degree of stigma and misunderstanding surrounding mental health issues, which can result in people often not seeking the help they need.

But whilst feelings of hopelessness, low mood and desperation can be

categorised and labelled as depression, the diagnosis itself tells us nothing about the cause or causes of it. Historically, we have tended to think of depression as a psychological illness, a reaction to a life event or an imbalance of our brain chemicals. And since 1975 the majority of psychiatric research has gone into developing medications that seek to balance neurotransmitter function. Current NICE recommended treatments for depression are a combination of cognitive behavioural therapies and antidepressant medications, designed to try to increase serotonin, our so-called 'happy hormone'.

A DIFFERENT APPROACH

Whilst some people may benefit from short-term medication, as a longer-term approach such magic bullets rarely address the underlying issues. In fact, many of these drugs can have serious side effects such as weight gain, lowered libido, low energy and suicidal thoughts. These potential reactions are sometimes overlooked in the pursuit of a quick-fix solution. >





Newer research turns the theory that 'depression is just a serotonin deficiency' on its head. This new way of thinking proposes that depression is actually a symptom of other biological processes in the body and that in order to address the mood problem we need to look at the root cause or causes. Consideration of the whole ecosystem of the body and factors such as blood sugar fluctuations, toxicant exposure, inflammation, intestinal health, allergy, thyroid issues and nutrient imbalance and deficiencies need to be investigated. This is where a holistic or Functional Medicine approach to healthcare really works well.

THE INFLAMED BODY

There is an increasing collection of evidence that depression, like many other chronic diseases, is associated

with systemic inflammation throughout the body. The inflammatory response is usually a helpful short-term defence mechanism, designed to heal wounds and fight infections, but chronic, persistent, low-grade inflammation is not. Pro-inflammatory chemicals called cytokines are released and they have been linked to a variety of neurological and depressive symptoms.

Depression can both trigger and accompany other inflammatory mediated illness such as heart disease, Alzheimer's disease, asthma, allergy and osteoporosis. Patients with type 2 diabetes, for example, have twice the rate of depression than the general population. Logic would suggest that multiple inflammatory illnesses could be driven by similar underlying physiological processes – the risk of stroke, for example, increases as the number of depressive symptoms rise.



AN ANTI-INFLAMMATORY APPROACH WOULD INVOLVE A MEDITERRANEAN-TYPE DIET, CALORIE RESTRICTION, RESTFUL SLEEP, MOVEMENT AND STRESS SUPPORT

So what would cause this insidious, perpetual inflammation? It is thought that our collective modern lifestyles can switch on inflammatory processes with overconsumption of calories, diets high in processed oils, sugars, alcohol, starches and chemicals being common culprits. Stressful lifestyles, gut bugs, medication, toxic exposure, lack of exercise and sleep deprivation all perpetuate the problem. An anti-inflammatory approach could involve a Mediterranean-style diet, careful calorie restriction, restful sleep, movement and stress support.

THE SECOND BRAIN

The gut and the brain form from the same foetal tissue and continue their connection throughout life with what is known as the gut-brain axis, which is why the gut is sometimes referred to as the 'second brain'. They are physically linked by the vagus nerve and the health of our digestive tract and brain is closely related. Instinctively we know that the function of one affects the other as nervous feelings can lead to altered bowel function and 'butterflies'.

Mental wellbeing is strongly influenced by our digestive function, and those with irritable bowel syndrome (IBS) are found to have higher rates of depression. One trial followed two groups of patients for a year, the first group diagnosed with IBS and the second group with depression. It found that the likelihood for both groups to be diagnosed with depression was higher than in those without IBS. The same study showed overwhelmingly that the gut issues came before the depression, suggesting that issues affecting the gut, such as food sensitivities, could affect mood.

Over the last ten years scientific research has exploded to examine this gut-brain relationship and the importance of the microbiome, the trillions of microscopic organisms that reside in our bodies. Looking specifically at the gut microbiome, scientists have discovered that many of the markers of depression are also known to be modifiable by gut

microbes. This is an exciting area of research, with one trial demonstrating that probiotic supplements containing lactobacilli bacteria were more effective than a commonly prescribed antidepressant medication.

A recent study highlighted that an altered composition of gut bacteria could influence mood and behaviour. The bacteria dialister and coprococcus were found to be less common in people reporting symptoms of depression. These observations cannot categorically show that depressed people lack these types of bacteria, but they do suggest that there are changes in the gut bacteria of depressed people. It is thought that certain microbes created by fermentation of fibre from the diet, produce beneficial anti-inflammatory compounds that can help to balance mood. These fermentation end products, such as butyrate, seem to increase the expression of a transporter molecule that regulates serotonin levels in the gut.

Robust intestinal health is important for mental health as problems with pathogenic gut bacteria, yeast or parasites can activate certain pathways responsible for the stores of tryptophan, the raw material for serotonin. Activation of this cascade effectively steals tryptophan, leading to serotonin depletion and if there is less serotonin available, symptoms of depression may rise. But perhaps most fascinating of all is that the outer coatings of pathogenic bacteria contain a sugar molecule, LPS, which can directly activate the immune systems leading to body and brain inflammation – both linked to mood issues.

FOOD FOR THOUGHT

Although many people may instinctively know that their diet may affect their mental health, there has been a lack of high quality scientific evidence in this area. However, in 2017 the first 12-week randomised controlled dietary trial, SMILES (Supporting the Modification of Lifestyle in Lowered >

Emotional States), was carried out. The study investigated a dietary treatment given to 67 people who were taking antidepressants and/or were having regular psychological support.

The clinically depressed participants were divided into two groups, with the experimental group instructed to eat a modified Mediterranean diet comprising of vegetables, fruit, nuts, legumes, fish, olive oil, meat and whole grains, whilst the other cohort had no dietary intervention but had social support.

SMILES was a small study size but there were impressive results with those in the dietary intervention group experiencing a greater reduction in their depressive symptoms over the three-month period, compared to those in the social support group. Remission of depression symptoms occurred in one third of the dietary group as opposed to eight per cent of the control group.

It could be that this type of eating was anti-inflammatory in nature, providing the essential nutrition, such as essential fats, proteins and vitamins, needed for optimal brain and body function, but it is also likely that the increased fibre content positively affected the gut microbiome. The results of this trial are important in directing future research but also offer people a safe alternative to medication, as the side effects of a Mediterranean

diet include potentially clear skin, weight loss and increased energy.

A SHIFT IN THINKING

Despite advances in brain science and neurology, conventional medical approaches continue to regard depression as a single entity rather than the result of multiple physiological dysfunctions or a symptom of imbalanced gut function or inflammation. There are myriad other factors that could also be considered, such as subclinical thyroid disease, nutrient deficiencies, trauma issues and exposure to toxicants, which can all influence mood and depressive symptoms. But it is essential that future treatments and therapies use a different model that looks at these root drivers of symptoms if we are to halt the ever-rising problem of mental health issues.

The holistic and functional medicine approach sees depression more as a signal than a diagnosis, a signal from the body that all is not well. And when we pay attention to the body the mind has the capacity to heal.

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NEWER RESEARCH
TURNS THE THEORY
THAT DEPRESSION
IS JUST A 'SEROTONIN
DEFICIENCY' ON
ITS HEAD

OTHER CAUSES OF DEPRESSION

- **Thyroid issues** There are thyroid receptors in every cell of the body and many symptoms of low thyroid function mimic those of depression, such as feeling cold, sluggish and lacking in energy. It is important to get a full thyroid check from a practitioner experienced in this area. NHS standard tests often do not show the whole picture.
- **Inadequate exercise** A regular exercise

programme has been shown to be an effective treatment for depression. Outdoor morning exercise is a great way to start the day to get the blood and feel-good endorphins flowing.

- **Poor quality sleep** Not getting enough good quality sleep is a risk factor in depression, so never skip sleep and get into a good, regular sleep-hygiene pattern.

- **Sunlight deprivation** Serotonin production by the brain is affected by exposure to bright light. This may be why many of us feel happier in the sun. Wake up at the same time each day and flood your eyes with bright light.
- **Vitamin deficiency** Low plasma folate and vitamin B12 levels are linked to depression, as are vitamin D levels. Discuss your levels with a nutritional practitioner.

