

Review of 'The inflamed mind – A radical new approach to depression',
by Prof Edward Bullmore, 2018, Short Books, London, ISBN 978-1-78072-350-1.

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The startling conclusion of this book is that depression is caused by a depressed immune system, not chemical imbalances in the brain. He says: (p 19) 'We can move on from the old polarised view that depression is all in the mind, or all in the brain, to see it as rooted also in the body; to see depression instead as a response of the whole organism or human self to the challenges of survival in a hostile world.' It is therefore not a mental disorder, but the immune system's normal inflammatory response of fighting invasions of infection and other stressors by mobilising an army of cytokines in the blood.

Prof Bullmore is well qualified to know, as he is a multi-disciplinary, world expert in the neuroscience of mental health, being both a psychiatrist, and an immunologist who worked for drug company GSK. His discovery is an immensely important breakthrough, as depression is already of epidemic proportions, affecting 1 in 10 in England, and is growing so fast that it is set to become the world's biggest health burden by 2030.

Having read his book in a day, (I couldn't put it down) his conclusion is common sense in hindsight, so why didn't somebody write this before? Ed explains this by the 'Cartesian blind spot' of dualism, (p 177) which since Decartes has divided mind and body in 'medical apartheid', 'which blinds us to something (that's hiding in plain sight) and blinds us to our blindness. We can't see something, and we can't see that we can't see it.' He lays out irrefutable evidence in a laudably clear and readable way, such as (p 11): 'when the dentist started probing my gums, she would have caused immune cells in my mouth to produce cytokines, which then circulated throughout my body in my blood and communicated inflammatory signals across the supposedly impermeable blood brain barrier to reach the nerve cells in my brain and cause my mind to become inflamed.'

However, stressors of the immune system are not just bacteria from physical wounds (antigens, or non-self p 22), but include physical illnesses. He illustrates this (p 3) on a co-morbid patient, Mrs P, to question whether she is depressed because she has arthritis, (the conventional answer) or whether she has arthritis because her immune system was compromised (depressed) by neglect or abuse in childhood. Other stressors are chemical pathogens, such as vaccinations, (p 144) which can 'cause collateral damage to nerve cells, synapses, and serotonin metabolism'.

Depression can also be caused by what he calls (p150): 'flaming stress....major life events, like death of a spouse, or parent, or child, or loss of a job or other bereavement or humiliation. Your chances of becoming depressed under those circumstances are up to nine-fold greater than the background risk of depression.' So can social stress, such as caring for a loved one (p189) He describes the mechanism for so-called leaky gut syndrome to push up C-reactive protein (CRP) levels (p 188): 'as a product of the toxicity of the bacterial flora in the bowel- the microbiome – and the strength of the immune response. So someone with a deprived or abused childhood, whose macrophage army is already on yellow alert after exposure to such early and severe social stress might have a more inflamed and depressed reaction to hostile gut bacteria in the microbiome many years later'.

He is rightly critical that psychiatry is the only branch of medicine that does not use biomarkers, and recommends (p 207) 'cytokine-guided psychotherapy' using a blood test (p198) 'of CRP at 3 mg per litre as the cut off point for being inflamed, then we might expect about a third of the patients with MDD (Major Depressive Disorder) to be eligible for treatment with a new anti-inflammatory drug. That's more than 100 million people.'

His take-home message (front dust cover) is 'He explains what we now know about how and why mental disorders have their roots in the immune system, and outlines a future revolution in which treatments could be specifically targeted to break the vicious cycle of stress, inflammation and depression. **The inflamed mind** goes far beyond the clinic and the lab, exploring a whole new way of looking at how mind, brain and body all work together in a sometimes misguided effort to help us survive in a hostile world. It offers insights into the story of Western medicine, and how we have got it wrong, as well as right in the past, and how we could start getting to grips with depression and other mental disorders much more effectively in the future.'

Amen to that objective, so I was glad that he briefly mentions non-drug ways of reducing inflammation: (p 189) 'He could lose weight if he was obese, which would bring down his cytokine levels. He could try a new dentist, or changing his diet. A lot of sensible practices, like physical exercise, sleeping well, and avoiding excess alcohol, may have anti-inflammatory benefits. But in terms of lifestyle management this is motherhood and apple pie; very good, and very familiar advice that is often very hard to follow.' He also rightly points out that, for the average GP :(p 190) 'there are no antidepressant treatments of any sort that are focussed on reducing inflammation. It couldn't be different already. There has been plenty of progress in the scientific theory of how the immune and nervous systems interact, but this new knowledge is not yet enough to make a difference to the real-life experience of depression. The only thing that really drives change in medical practice is new treatments. '

He also says (p207) 'a course of psychotherapy or meditation, focussed on helping patients to strengthen skills for stress management, could have anti-inflammatory effects. And indeed, there is some evidence for this. Mindfulness training reduced loneliness in older adults and also reduced expression of inflammatory genes by white blood cells. A recent combined analysis of the results of multiple studies of immunological effects of mind body therapies, like meditation or tai chi found that they significantly reduced the expression of genes that control activation of macrophages in response to infection. It seems ***the mind can be trained to control the inflammation response of the body, and this might be one of the mechanisms by which psychological treatments are effective for depression.***'

I agree, and have emphasised that conclusion above as the punch line of the whole book. However, Ed, as a drug company employee, has naturally got a Cartesian blind spot himself, preventing him from seeing why the previously rare condition of melancholia 50 years ago has suddenly become a worldwide epidemic of depression. The only culprit, who Ed catches red-handed, can only be the 'pill for every ill', whose toxicity makes the taker depressed by depressing their immune system. The good news is that Ed's book also makes the solution obvious. Governments should adopt a policy of 'medication to meditation', by mass-commissioning the most effective talking therapies, such as the NICE recommended Mindfulness Based Cognitive Therapy (MBCT) 8 week course, and other psycho-education courses which teach self-care, so that GPs can prescribe them to all those who want to cure their depression by withdrawing from taking drugs (prescription and street).

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