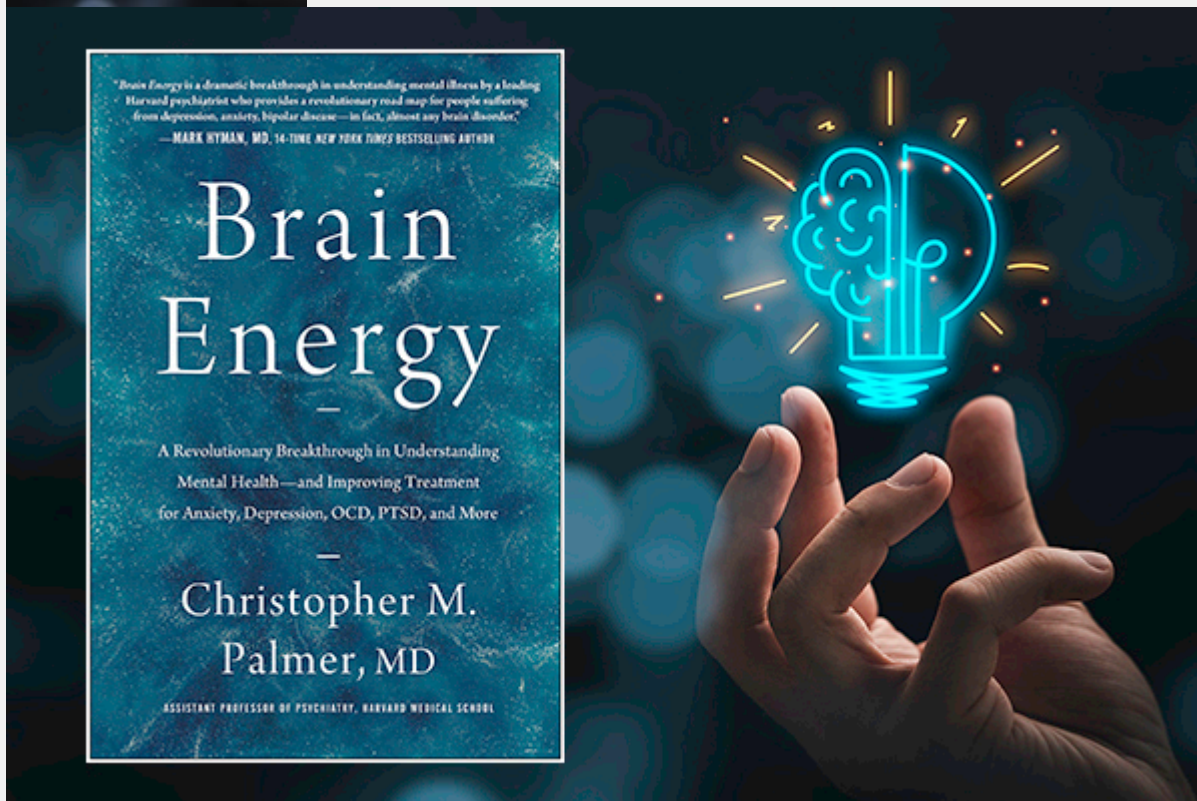
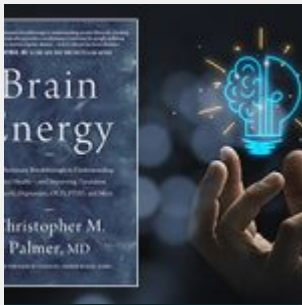


Brain Energy by Christopher Palmer, MD: A review



I recently recorded an exciting podcast episode with Dr. Chris Palmer about his new book, *Brain Energy: A Revolutionary Breakthrough in Understanding Mental Health—And Improving Treatment for Anxiety, Depression, OCD, PTSD and More*.

In it, he seeks to advance a unified theory that knits together all the disparate conditions we categorize as “mental disorders”.

Dr. Palmer starts by highlighting the soaring incidence of various psychiatric diagnoses. He thinks it’s more than just “diagnostic creep”—the medicalization of natural human variations like inattention (now ADHD), sadness (major depressive disorder), shyness (social phobia), worry (generalized anxiety disorder) moodiness (bipolar disorder), or senility (dementia); something is definitely going on.

As to the various alleged precipitants like stress, sedentary lifestyle, poor nutrition, bad parenting, environmental toxins, he says, yes, they’re all contributory, but believes they require a broader theoretical framework to better understand them and to devise comprehensive treatment strategies.

And as a Harvard professor and practicing psychiatrist, he finds fault with the efficacy of current therapies. They’re all symptomatic and not directed toward root

causes. While improvements can be achieved with psychotherapy and drugs, their success is spotty and often partial, leaving psych patients to wonder, as did Jack Nicholson who played an obsessive-compulsive in the movie of the same name—"Is this as good as it gets?"

In our interview, we touch on the collapse of two lynchpins of current psychiatric thinking: the amyloid hypothesis to account for Alzheimer's and the notion that depression is merely a "chemical imbalance", both correctable with pharmaceutical drugs.

Palmer makes the bold declaration that "Mental disorders—all of them—are *metabolic disorders of the brain.*" The brain is highly energy-dependent; while comprising only 2% of body weight, it's responsible for 20% of the body's energy consumption.

Sophisticated new imaging techniques now allow us to peer at various brain regions and rate their energetic efficiency. It turns out that the common denominator of virtually all psychiatric disorders is under-active brain regions—like the dimming that occurs when you substitute a 40-watt light bulb in a 100-watt fixture.

At a cellular level, the organelle responsible for these imbalances in energy metabolism is the mitochondrion, which is sensitive to all kinds of perturbations: environmental toxins, nutritional deficiencies, infections, inflammation, circulatory problems, hormone imbalances, traumatic brain injury, insulin resistance, stress, sedentary habits, sleep deprivation, and even cross-talk with the intestinal microbiome.

The question occurred to me: "I get it that deficiencies in energy generation can cause problems like depression and dementia, when key brain areas are *hypoactive*. But how does your theory account for states of *hyperactivity*, like bipolar mania, ADHD, or anxiety?"

Dr. Palmer replied that certain brain areas have inhibitory and regulatory effects on other regions, and thus can tamp down impulsivity, aggression, or obsessive thoughts. When those control centers underperform due to suboptimal energy metabolism, they unleash abnormal behaviors. We see this in certain forms of dementia, when degeneration of the prefrontal cortex, which is responsible for decision making, reasoning, personality expression, maintaining social appropriateness, and other complex cognitive behaviors causes **disinhibition**—leading sufferers to be tactless, rude, offensive, agitated or even hypersexual.

The brain energy concept has led Dr. Palmer to explore the therapeutic potential of the keto diet for psychiatric disorders. He has gained adherents as "the keto psychiatrist" and documents many of his successes in his book. Indeed, patients with challenging mental diagnoses extol the benefits of carb restriction. For example, a parent reports on Twitter:

"At 19, our son, Matt, was hospitalized for mania and psychosis. A 5-year daily battle with severe bipolar disorder followed. Full remission for 1.5 yrs on a ketogenic diet."

While accounts of the success of the keto diet remain mostly anecdotal, preliminary studies suggest it has therapeutic potential:

"Despite the inherent limitations of the observational data based on self-reports posted online, the association strength and reports of sustained benefit support a hypothesis of a ketogenic diet being associated with beneficial effects on mood

stabilisation.”

How does it work?

The relationship between simple carbohydrates and mood problems has been recognized since the mid-twentieth century with the work of endocrinologist EM Abrahamson who wrote the pioneering book *Body, Mind and Sugar* (1951). He introduced the notion that carbohydrate dependency and dysregulated glucose metabolism are the cornerstones of many psychiatric disorders. Abrahamson’s popular book propelled the term *hypoglycemia* into the popular lexicon. Case study after case study attested to remission of depression and anxiety with sugar cessation.

Following on the heels of Abrahamson came Bill Dufty, who wrote *Sugar Blues* in 1975. He was one of the first to declare sugar dependency a form of addiction, and he even linked it to schizophrenia. Of course, mainstream psychiatry would have none of it—they dismissed hypoglycemia as a fad. Hewing to medical orthodoxy, they averred that low blood sugar could only occur in the setting of insulin-dependent diabetes, inconsequential for “normal” individuals.

But advocates (like Dr. Palmer) of an even more radical keto diet as a psychiatric treatment—that proposes virtual *elimination* of carbohydrates—believe more is going on than mere blood sugar stabilization. In scientific jargon, keto diets address a “*mitochondrial dysfunction component to bipolar disorder aetiology with ketones bypassing a block between glycolysis and the tricarboxylic acid cycle.*”

In other words, they help brain energy. When the brain switches its fuel source from glucose to ketones, as happens when fats are substituted for carbs, there are fewer peaks and valleys of energy production, and higher efficiency of previously unresponsive mitochondria within neurons. This is the reason that keto diets are sometimes deployed for epilepsy unresponsive to drugs—they have a track record of controlling seizures when all else fails.

There may be additional brain benefits of low-carb diets; they may “reboot” the microbiome by creating a radical shift in intestinal bacteria. There is now considerable scientific literature that links GI microbiota to conditions like anxiety, depression, and even Parkinson’s Disease and Alzheimer’s. Avoidance of sweets, sugary beverages and fast foods was found to reduce stress due to its favorable effects on the microbiome in a recent study from Ireland.

Where I might take issue with Palmer is with his truncated discussion of nutritional supplementation as a means of supporting mitochondrial function. Admittedly, research is limited, but the potential for the efficacy of a variety of interventions can’t be ignored: Omega-3 supplements are widely recommended by progressive psychiatrists; prescription B vitamins like **Deplin** are routinely administered alongside SSRIs; and neurotransmitter precursors like SAM-e, choline, tryptophan, 5 HT, and tyrosine evince encouraging effects. Then there are iron’s mood benefits in a subset of patients, especially young women or people on vegan diets.

Additionally, perfectly in accord with the brain energy hypothesis, supplements like magnesium threonate, coenzyme Q10, NAD, NAC, glutathione, acetyl-l-carnitine, **NTFactor®** and alpha lipoic acid have the potential to improve neuronal mitochondrial efficiency.

All in all, with *Brain Energy*, Dr. Palmer is making a revolutionary contribution to the field of psychiatry, and he’s sure to take main stage as an advocate for a more integrative approach to mental disorders that relies less on under-performing

pharmacological fixes.