

# The GM on Ten



As I write this I'm sitting in a hotel room in Vancouver. I've been attending the Orthomolecular Medicine Today Conference held annually in Canada. The conference attendees are mainly from North

America (Canada and the USA), but there are 13 countries represented. I am the only Australian.

I came across orthomolecular medicine about 25 years ago when I was reading books on nutrition and its role in maintaining optimal health. The term "orthomolecular" was first used by Linus Pauling in 1968 when, in a seminal article in the journal *Science*, he defined orthomolecular psychiatry as "the treatment of mental disease by the provision of the optimum molecular environment of the mind, especially the optimum concentrations of substances normally present in the human body".

At the Orthomolecular Today Conference, Dr Jonathan Prousky was announced as Orthomolecular Doctor of the Year. I purchased one of Jonathan Prousky's books, *Anxiety: Orthomolecular Diagnosis and Treatment*, the first book to focus on anxiety from an orthomolecular perspective. In his book, Prousky outlines the orthomolecular framework as originally articulated by Linus Pauling:

*Pauling offered various reasons why an optimum intake (megadose) of specific nutrients would probably benefit mental disease. He argued that the saturating capacity would be much greater if defective enzymes could restore their combining capacity for their respective substrates. In other words, an enzyme-catalyzed reaction could be corrected by increasing the concentration of its substrate through the use of optimal doses of particular micronutrients. He discussed the possibility that cerebrospinal fluid (CSF) concentrations of vital substances (eg micronutrients) could be grossly diminished, while concentrations in the blood and lymph remained essentially normal. Localized cerebral deficiencies might occur because of decreased rates of transfer (ie decreased permeability) of vital substances across the blood-brain barrier, increased rates of destruction of vital substances within the CSF, or other factors.*

The Canadian biochemist and psychiatrist Abram Hoffer is credited with initiating the use of megadoses of micronutrients to treat mental disorders, specifically schizophrenia. In the 1950s Hoffer hypothesised that patients with

schizophrenia might be "niacin dependent" and instituted a treatment regimen comprising daily megadoses of niacin (Vitamin B3) and ascorbic acid (Vitamin C). The results were remarkable, particularly in the acute stages of schizophrenia, and the orthomolecular treatment of mental disorders was born.

The orthomolecular approach has extended beyond psychiatry and is now applied in the treatment of a range of other diseases including cancer, cardiovascular disease, chronic fatigue syndrome, and dementia.

In the last 20 years there has also been the emergence of what is called "functional medicine".

I hadn't heard of functional medicine prior to the Conference. At lunch one day, I sat next to a medical practitioner who had specialised in gastroenterology but who is now working in Beijing establishing China's first Institute of Functional Medicine. He explained that functional medicine is an approach to maintaining health where the root causes of disease are identified and addressed. Functional medicine interfaces with orthomolecular medicine in that both are focussed on identifying and addressing causes, with orthomolecular medicine concentrating on the role of micronutrients.

During the three days of the Conference, there were repeated references to the fact that orthomolecular medicine fails to get mainstream traction, even in its birthplace Canada. There are plenty of possibilities as to why this is the case.

One is that mainstream medical practice is focussed on the treatment and alleviation of symptoms rather than the identification of causes. Medical practitioners are not entirely to blame for this. For the most part, patients want a quick fix. Identifying and addressing causes is likely to be time-consuming. Orthomolecular approaches are also based on individualised treatment regimens and take more time to develop. It's not surprising then that orthomolecular medicine has trouble getting a foothold in our frenetically-paced lives.

Another possibility is the powerful influence of the pharmaceutical industry. Micronutrients cannot be patented. While the profits generated by the nutritional supplements industry are considerable, they pale compared with those of the pharmaceutical world. This is not to say that synthetically manufactured and patented drugs are unnecessary. Abram Hoffer continued to prescribe anti-psychotics while ever he thought they were efficacious. But the stranglehold of the pharmaceutical industry on treatment

protocols effectively blocks out anything else.

A third possibility is that nutritional supplements attract bad press. Supplements are treated with considerable contempt. People who take supplements are likely to be regarded as gullible, hypochondriacal, frivolous with their money, and engaging in quackery. I've taken supplements all my adult life and I've learned to keep relatively quiet about it.

A fourth is that no one knows very much about nutrition. There are forty micronutrients needed by the body to survive and thrive, and optimum intake varies from person to person. Most people would be hard pressed to name four let alone forty. One of the speakers at the Conference, Professor Bruce Ames from the University of California in Berkeley, believes that moderate micronutrient deficiencies are widespread, yet go largely undetected and unaddressed.

Nutrition operates at the molecular level and studying its dynamics is the province of biochemistry. If I wanted a good understanding of the role of micronutrients in the functioning of my body, I'd be more inclined to seek out a biochemist than a mainstream medical practitioner (with no disrespect intended to medical practitioners).

One of the favourite mantras of those opposed to supplements is that "if you're eating a wide range of foods you're getting all the nutrition you need". I'd like to believe that but I don't. There is at least one vitamin where this is indisputably not the case. Vitamin D. The principal source of Vitamin D is the sun. Food sources alone are insufficient. Yet how many of us know how much daily sun exposure we need to ensure adequate levels of this vitamin. And how many of us get that exposure, free of sunscreen. Research into the role of this vitamin is exploding, with someone at the Conference describing it as "the vitamin of the 21st century". It will be interesting to see where such research takes us.

Orthomolecular psychiatry doesn't have much traction in Australia. That's a pity. There's nothing to be lost by trying it. And everything to be gained if it indeed has something to offer.

***The GM on Ten is an opinion piece by Dr Gaye Emily Keir, Acting Chief Executive Officer of the Mental Illness Fellowship of Qld. Gaye Emily Keir is a psychologist.***

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