



ORTHOMOLECULAR MEDICINE

Orthomolecular Medicine, as conceptualized by double-Nobel Laureate Linus Pauling, aims to restore the optimum environment of the body by correcting imbalances or deficiencies based on individual biochemistry using substances natural to the body such as vitamins, minerals, amino acids, trace elements, and essential fatty acids

Orthomolecular medicine describes the practice of preventing and treating disease by providing the body with optimal amounts of substances which are natural to the body. The term "orthomolecular" was first used by Linus Pauling in a paper he wrote in the journal *Science* in 1968. The key idea in orthomolecular medicine is that genetic factors affect not only the physical characteristics of individuals, but also to their biochemical milieu. Biochemical pathways of the body have significant genetic variability and diseases such as atherosclerosis, cancer, schizophrenia or depression are associated with specific biochemical abnormalities which are causal or contributing factors of the illness. Want to learn more? The following essays give a more detailed overview of the nature, efficacy and history of orthomolecular medicine.

ISOM

The International Society for Orthomolecular Medicine is our site page for information on orthomolecular organizations and societies throughout the world.

www.healthoracle.org

JOM:

The Journal of Orthomolecular Medicine is our quarterly journal which publishes informative papers on all aspects of orthomolecular treatments for physical and mental disease.

ISF:

The International Schizophrenia Foundation has been a leader in the orthomolecular treatment of schizophrenia. Find out why orthomolecular therapy offers real hope.

NMT:

Nutritional Medicine Today is our Annual International Conference which brings together leading physicians, researchers and clinicians in the field of orthomolecular medicine.

STORE:

Education is one of our important missions for the clinician and layperson alike. Purchase texts, books, DVDs, conference tapes and reprints from the Journal of Orthomolecular Medicine.

NEWS:

Information on upcoming seminars, conferences as well as news and research on orthomolecular medicine. Updated quarterly.

RESOURCES:

Other sites which may be of interest to those who are searching for information or complementary treatment options for illnesses.

Nutrients

Some nutrients may be synthesized by the body, in addition to being consumed in the diet. Choline is considered an essential nutrient,

because even healthy individuals cannot synthesize enough to maintain health. Other nutrients can be synthesized in adequate amounts by healthy individuals, but may be required from the diet under conditions of stress or illness. Aging and chronic diseases may also increase the need for dietary intake of these conditionally essential nutrients.

Vitamins

The term vitamin is derived from the words vital and amine, because vitamins are required for life and were originally thought to be amines. Although not all vitamins are amines, they are organic compounds required by humans in small amounts from the diet. An organic compound is considered a vitamin if a lack of that compound in the diet results in overt symptoms of deficiency.

Principles That Identify Orthomolecular Medicine: A Unique Medical Specialty

In 1969 Linus Pauling coined the word ‘Orthomolecular’ to denote the use of naturally occurring substances, particularly nutrients, in maintaining health and treating disease. Megadose niacin therapy for schizophrenia and dietary treatment of ‘hypoglycemia’ were the major focus of the movement. Since then Orthomolecular psychiatry and medicine have emerged as a distinct and important specialty area in medical practice.

In the meantime, other medical movements have sprung up out of the public demand for ‘Hope’ in the face of a worsening epidemic of cancer, heart attacks and mental illness and in response to the outcry against adverse effects of modern medical treatments and invasive diagnostic and intensive care procedures.

Alternative therapies have come forward to fill the vacuum left by modern Medicine, which failed to provide effective treatments for the major epidemic diseases and in protest against Medicine’s over-reliance on pharmacology, for the drug treatments seem to have

fostered the epidemic of drug-dependence which is the major epidemic of our time. The public were ready for a new medicine based on nontoxic, non-invasive, 'natural' medicines to go with the re-discovered 'natural foods'.

Holistic medicine became a rallying point for the new medicine by putting nutrition, exercise and meditation ahead of surgery, radiation and drugs. It was an answer to the adverse effects of the 'cut, burn and poison' approach to 'health'. Since holistic medicine did not focus on basic science data, it did not force a paradigm shift in the medical establishment.

Orthomolecular, on the other hand, because it is identified with Linus Pauling, and because it rests on vast body of research in the basic and clinical sciences, does force a major revision in medical thinking.

Nutrition, which has been the stepchild of medicine and generally considered a dead issue in medicine, suddenly is at the crux of this new medical movement. No wonder then, that Orthomolecular became a buzzword to the medical establishment, who saw it only as megavitamins and judged it as quackery.

By contrast, the word, 'Holistic' became the subject of numerous symposia, journal articles, welcomed by editors eager to promote the image of modern medicine as a progressive and responsive institution. But as it gained supporters, 'Holistic Medicine' also gained additional theories and practices, some of dubious value, some downright unscientific, Even the most broad-minded and liberal-minded editor had to recoil from permitting such things as psychic healing and kinesiology within the pages of a refereed journal.

Soon the word 'Alternative' came to replace 'Holistic' in the medical journals. Now the establishment could pick and choose individually between the various therapies that had gathered under the holistic

umbrella; nutrition, biofeedback, chiropractic, acupuncture, herbalist, homeopathy, massage, hypnosis, iridology (examining the iris to determine health), kinesiology (studying movement to determine health), astrology, reiki, psychic healing and other intuitive therapies, to name a few.

The orthomolecular movement was faltered with identity confusion and, in fact, many of our own members seem to have chosen 'Holistic' as their preferred badge-word. This may be good for the short run: it is attractive to patients and profitable while being non-controversial and safer professionally as well. In the long run, however, 'Holistic Medicine' has no future. It has already lost its identity, except as a clearing house for medical novelty. Most important, because it does not identify strongly with science, it has lost reliability.

Meantime, Orthomolecular Medicine retains scientific reason for being: its basic science foundations of nutrition, biochemistry and clinical nutrition have grown at a prodigious rate. Megavitamin, niacin therapy, which was considered dangerous and controversial in treating schizophrenia, is now the standard of care in the hyperlipidemias. What began as megavitamin therapy now employs a broad data base and a variety of therapies applicable to numerous medical and psychiatric conditions.

It is ironic that this positive growth of orthomolecular science and therapy has actually clouded the identity of the 'Orthomolecular movement'. On the one hand we are confused with 'Holistic Medicine'; on the other we are seen only as the avant garde of orthodox medicine. In hopes of defining our true identity let us update the concept of Orthomolecular Medicine as anew medical specialty.

First of all, the orthomolecular data base rests strongly on the following areas of scientific knowledge:

1. Nutrition
2. Biochemistry
3. Cell biology
4. Physiology
5. General Medicine
6. Immunology
7. Allergy
8. Endocrinology
9. Pharmacology
10. Toxicology
11. Gastroenterology
12. Parasitology
13. Nephrology
14. Physical medicine and manipulation therapies
15. Dentistry
16. Veterinary science
17. Food science
18. Agriculture
19. Climatology
20. Medical politics.

The following therapeutic modalities fit the definition of orthomolecular:

1. Vitamins
2. Minerals
3. Amino acids
4. Essential fatty acids
- 5, fiber
6. Enzymes
7. Antibodies
8. Antigens
9. Cell therapy
10. Chelation therapy
11. Dialysis
12. Plasmapheresis
13. Hydrotherapy
14. Thermal therapy
15. Phototherapy and Light therapy
16. Electrotherapy (including electroconvulsive therapy)
17. Air ion therapy
18. Acupuncture
19. Massage

20. Exercise

21. Biofeedback

22. Hypnotherapy and other psychotherapies.

All of the orthomolecular practice rests on a foundation of basic science advances in biochemistry, biophysics, physiology, psychophysiology and ecology.

We do not eschew drug therapy or pharmacology; but we do recognize their limitations and their potential for toxicity. Orthomolecular knowledge gives greater choice of benefits for our patients with less risk of adverse affects.

Aside from these areas of interest, there are by now some well defined beliefs and principles that also distinguish the orthomolecular practitioner from orthodox health practitioners.

These principles actually are an important part of our professional identity. Just as knowledge of science and therapeutics might be thought of as our Ego, these principles makeup our professional conscience or Superego, The desire to be in the avant garde of medical progress, to share the excitement of discovery, no doubt, is a major source of our motivational energy or libido, our medical Id, as it were.

The love of our grateful patients, those we are privileged to heal and comfort; and this must be the ultimate motive.

At any rate, all will agree that the orthomolecular professional is a different personality, with different beliefs and values than most present-day practitioners of medical orthodoxy. Of course all physicians do cherish our 'Hippocratic Oath', but the orthomolecular identity confers upon us additional values and beliefs. Hippocrates' first rule was: "Primum non nocere," i.e. "first, do no harm".

Those in orthomolecular practice have less need for the primacy of that rule, for it is already implicit in the essence of ‘Orthomolecular’ practice, which is: “put nutrition first”.

Here is a list of 15 principles that identify the ‘spirit’ of Orthomolecular Medicine:

1. Orthomolecules come first in medical diagnosis and treatment. Knowledge of the safe and effective use of nutrients, enzymes, hormones, antigens, antibodies and other naturally occurring molecules is essential to assure a reasonable standard of care in medical practice.
2. Orthomolecules have a low risk of toxicity. Pharmacological drugs being alien to the body always carry a higher risk and are therefore second choice if there is an orthomolecular alternative treatment available.
3. Laboratory tests are not always accurate and blood tests do not necessarily reflect nutrient levels within specific organs or tissues, particularly not within the nervous system. Therapeutic trial and dose titration is often the most practical test.
4. Biochemical individuality is a central precept of Orthomolecular Medicine. Hence, the search for optimal nutrient doses is a practical issue. Megadoses, larger than normal doses of nutrients, are often effective but this can only be determined by therapeutic trial. Dose titration is indicated in otherwise unresponsive cases.
5. The Recommended Daily Allowance (RDA) of the United States Food and Nutrition Board are intended for normal, healthy people. By definition, sick patients are not normal or healthy and not likely to be adequately served by the RDA. The RDA is also quite arbitrary and should not be taken as a sacrosanct dogma.
6. Environmental pollution of air, water and food is common.

Diagnostic search for toxic pollutants is justified and a high “index of suspicion” is mandatory in every case.

7. Optimal health is a lifetime challenge. Biochemical needs change and the Orthomolecular prescriptions need to change based upon follow-up, repeated testing and therapeutic trials to permit fine-tuning of each prescription and to provide a degree of health never before possible.

8. Nutrient related disorders are always treatable and deficiencies are usually curable. To ignore their existence is tantamount to malpractice.

9. Do not let medical defeatism prevent a therapeutic trial. Hereditary and so-called ‘locatable’ disorders are often responsive to orthomolecular treatment.

10. When a treatment is known to be safe and possibly effective, as is the case in much of orthomolecular therapy, a therapeutic trial is mandated.

11. Patient reports are usually reliable, the patient must listen to his body, and the physician must listen to his patient.

12. To deny the patient information and access to Orthomolecular treatment is to deny the patient informed consent for any other treatment.

13. Inform the patient about his condition; provide access to all technical information and reports; respect the right of freedom of choice in medicine.

14. Inspire the patient to realize that Health is not merely the absence of disease but the positive attainment of optimal function and well-being.

15. Hope is therapeutic and orthomolecular therapies always are valuable as a source of Hope. This is ethical so long as there is no misrepresentation or deception.

The following tabulation further clarifies the role of Orthomolecular Medicine in relation to medical orthodoxy.

| FACTOR | ORTHOMOLECULAR | ORTHODOXY |
|----------------------|---|--|
| GOAL | Cure of cause | Palliation of symptom |
| DIAGNOSIS | Nutrient levels History, Physical history | Chemistry levels Physical |
| TREATMENT | Wellness model | Disease model Germ theory |
| ECOLOGIC VIEW | Ecologic view | Surgery Radiation Pharmacology |
| ETHIC | Exercise Meditation Nutrient ecology and toxic factors | hazy on diet and toxic factors |
| UNPROVEN REMEDY | safety first | efficacy first do not use - too risky |
| DOUBLE-BLIND STUDIES | often useful on individual basis | infallible standard of proof accept no therapy without it |
| PATIENT REPORTS | false negatives occur good treatment is lost | unreliable data |
| RESPONSIBILITY | usually correct | patient is ignorant and incompetent |
| PLACEBO EFFECT | patient is educated and responsible | suspect, dishonorable |
| | useful adjunct | unsafe, unproved |

| | | |
|--------------|------------------------------------|--|
| MEGAVITAMINS | safe, effective medical therapy | worthless therapy |
| INCURABLES | treat; offer hope | do not really treat; offer 'false' hope |

The essentials boil down to 7 cardinal rules:

1. Nutrition comes first in medical diagnosis and treatment.
2. Drug treatment is used only for specific indications and always with an eye to the potential dangers and adverse effects.
3. Environmental pollution and food adulteration are an inescapable fact of modern life and are a medical priority.
4. Biochemical individuality is the norm in medical practice; therefore stereotyped RDA values are unreliable nutrient guides.
5. Blood tests do not necessarily reflect tissue levels of nutrients.
6. Nutrient diagnosis is always defensible because nutrient related disorders are usually treatment responsive or curable.
7. Hope is an indispensable ally of the physician and an absolute right of the patient.

Finally, the rallying point and badge-word must be 'Orthomolecular', a landmark concept that conveys the genius of nature, which if allowed unrestricted support will resurrect the body to a healthy and disease Free State. Nutrition and putting it first, not last, in our quest for finding the science of health and treatment of disease will make each one of us victors – not victims.