For the Physician: Understanding Glyconutrients and the Potential Benefits to Your Patients

There are eight nutritional whole-food glyconutrients, known to be necessary to create and sustain cellular health. They are mostly missing from our contemporary food supply. A growing body of scientific evidence and inquiry demonstrates that introducing a complement of glyconutrients into a balanced nutritional program may have a significant positive impact on the aging process, degenerative disease process as well as many genetically carried health challenges.

These nutrients are necessary for everyone, no matter what their state of health, and it would be advisable to include them in your own and your family’s health regimen as well as for your patients. This information may be new to you as it only in the last decade that basic education has been provided in biochemistry textbooks and, in the last 3 years, available as continuing education credit programs for physicians. Some background to consider:

The flourishing science of glycomics has established irrefutably that 8 monosaccharides are required for normal cellular function, repair, regeneration, and inter-cellular communication. These 8 monosaccharides include glucose, mannose, galactose, xylose, fucose, N-acetylglycosamine, N-acetylgalactosamine, and sialic acid (N-acetylneuraminic acid or NANA).

Prior to the development of modern farming methods which have led to depleted soils and the introduction of man-made foods and elimination of various nutrients through processing our foods, these monosaccharides or glyconutrients were available in the food supply. Today, in a typical diet, people get only 1 or 2 of the 8 necessary monosaccharides with very minute amounts if any of the others. In 1996, the research and development team at Mannatech, Inc. created a 100% natural complex of the necessary monosaccharides and their precursors to provide all 8 monosaccharides. The result is a patented product called Ambrotose®. Mannatech created the term, ‘glyconutrients’ to describe the complex of monosaccharides. No combination of vitamins, minerals, amino acids, or herbals can substitute readily for this complex. Mannatech’s sources of glyconutrients are gums, saps, and other plant components.

The only other way to get a complex of the monosaccharides is to create a mixture of mushrooms and fungi, hoping to get a comprehensive and efficacious mix and one that won’t be problematic for those who are sensitive to fungus. Dr. Emil Mondona in his book, Sugars That Heal writes about these monosaccharides and recommends in the preface of his book, the efficacy of Ambrotose® over other choices. Another book is available which compiles 20 doctors contributions on glyconutrition - The Healing Power of 8 Sugars compiled and edited by Allan C. Somersall, Ph.D., M.D.

Since 1994, thousands of studies in the core science of glycobiology and glycomics have been written. Specific studies can be found at www.glycoscience.org which serves as peer-reviewed online journal and an archive to thousands of articles and studies in this field. 22,670 studies were done in 2005 alone in glycobiology as found through a medline search on glycoproteins.

Case studies, clinical studies, and anecdotal data of over 100 degenerative diseases such as cancer, heart disease, diabetes, autism, depression, and multiple sclerosis have demonstrated extremely positive responses when this blend of glyconutrients has been added as a complement to a sensibly balanced food program, often along with conventional medical protocols. Through such an approach to providing necessary nutrients for the body to self-regulate as designed, the body can create healthy cells that create healthy tissues, then organs, and systems. Clinical data on biomarkers of aging in relationship to use of glyconutrients can be obtained by calling the Health and Medical Research Foundation at 210-824-4200.
In November of 1998, Intertech’s Business Development Forum invited staff from leading pharmaceutical firms and research laboratories to attend a conference in Vancouver, Canada—Glyco Compound ’98: Forum on Bioactive Carbohydrates. It was promoted to cover glyco compounds as anti-cancer, anti-biotic, anti-infectious, anti-viral, and anti-inflammatory.

Pharmaceutical companies have picked up the challenge and are investing hundreds of millions of dollars in the field of glycobiology. They are developing sugar drugs. By March 2001, Science magazine covered this new trend in research, reporting 8 drugs in development—6 for cancer, 2 for infections. One available on the market at that time was a drug for a genetic disease, Gaucher’s for a cost of $8,333 per month. While these drugs may have positive effects in treating disease, they will be costly and carry toxic side-effects. In October of the following year (2002), in coverage of the glycocomics research in New Scientist Magazine, Gerald Hart, Biochemist at Johns Hopkins University was quoted with this profound statement: “We won’t understand immunology, neurology, developmental biology, or disease until we get a handle on glycobiology.”

Glyconutrients, as a natural source of bioactive carbohydrates have been providing health benefits by supporting the return of healthy function without harmful side effects and at a fraction of the cost of pharmaceuticals. In fact, many people using glyconutrients are able to eliminate pharmaceuticals from their regimen. There is now a professional pharmaceutical service available to physicians and their patients to assist in this process: http://mannapharmacists.com

Mannatech’s core supplements: Ambrotose®, AO, and Plus are listed in the 1995 Physicians’ Desk Reference (PDR) for Non-prescription Drugs and Dietary Supplements.

A few internet sites accessible that refer to the current science of glycomics and glyconutrients:


http://web.mit.edu/mitpep/ku/topics/glycomics.html  MIT Ram Sasisekharan, MIT Professor of Biological Engineering

http://www.functionalglycomics.org/static/consortium/  Consortium for Functional Glycomics, funded by National Institute of General Medical Sciences


http://www.fisherinstitute.org  Provides syllabi and journal with case and clinical studies

For CME courses, seminar schedule, and other educational materials for health practitioners:

http://www.proevity.com

http://www.endowmentmed.org