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THE PARADIGM SHIFT IN MODERN HEALTH CARE

Dr. Benjamin Solomon Carson Sr., one of the world's leading physicians, says that glyconutrients should become a complementary component of our healthcare system.

By Joseph Green-Bishop



Dr. Benjamin Solomon Carson Sr., the world famous doctor who became the director of pediatric neurosurgery at Johns Hopkins University in Baltimore rose to the very top of the medical profession.

Time Magazine and CNN once named him one of the top twenty doctors in America. In 1987 he was the lead surgeon in the twenty-two hour operation that separated the heads of the Binder Siamese twins from Germany. It was the first such operation in which both twins survived. But in the summer of 2003 Dr. Carson found himself facing his own serious health challenge. "It was a shock," said Dr. Carson, a professor of neurosurgery, oncology, plastic surgery and pediatrics at Johns Hopkins. "I had been living a healthy lifestyle and getting regular check-ups." And with the same strength and determination that his mother, Sonya Carson, imparted to him and his brother while she raised them alone in inner city neighborhoods in Detroit and Boston, he sought a nutritional-based, integrative strategy to complement his standard of care medical treatment in order to achieve the best possible results.

The father of one of Dr. Carson's patients told him about a company based in Coppell, Texas which holds patents in multiple countries pertaining to a dietary supplement known as a glyconutrient. The parent suggested to Dr. Carson that he contact them. After contacting the company, Dr. Carson was surprised by the amount of science they provided. "I was impressed that they did not make any wild medical claims," he said. The majority of their science pointed to how glyconutrients supported the body's normal functions of regeneration and repair. "The science made sense to me," Dr. Carson said. "God gave us (in plants) what we need to remain healthy," he said. "In today's world our food chain is depleted of nutrients

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and our environment has helped destroy what God gave us." Through dietary supplementation, one of the most significant doctors in the history of medicine decided to support his immune system with glyconutrients. And almost immediately he saw an improvement in his quality of life and according to Dr. Carson his recovery from surgery was faster than his doctors expected.

He continues to take the supplements and suggests that others who are concerned with optimal health take them. "I do not see glyconutrients as unnatural," he said. "I see them as complementary to traditional medicine. Dietary supplements should become an integral part of health care in this country. There is a growing trend by consumers to want to blend traditional and complementary medicines," stated Dr. Carson. He said that it was significant that the National Institutes of Health had granted millions of dollars to researchers to investigate alternative and complementary approaches to health and wellness. "The day is coming when the science will be behind them."

In 1998, The United States Congress appropriated \$50 million to support the National Center for Complementary and Alternative Medicine, which was established by the National Institutes of Health to investigate alternatives and complementary medical practices and their impact on healthcare in America. Dr. Carson stated that a growing number of consumers were demanding the use of nutraceutical supplements in conjunction with traditional medical treatments despite strong opposition. "Medicine has become a significant business," he said, "and there are a lot of people who invest a lot of money into drug development who are not going to look at these things (glyconutrients) in a friendly manner." Dr. Carson is among a growing legion of high profile medical professionals in this country and around the world who have embraced dietary supplements. Many of them have had personal experiences with the supplements or have seen what they have described as "positive" changes in their patients who have used them.

Not long ago, the *Atlanta Voice* published an interview with Dr. John Rollins, a retired award-winning US Trademark and Patent Office official. In the article, titled, *"Disruptive Technology Brings Hope to Health Care,"* Dr. Rollins was asked if in his work he had seen any new discovery that had the potential to significantly impact the declining health trends in America. To their

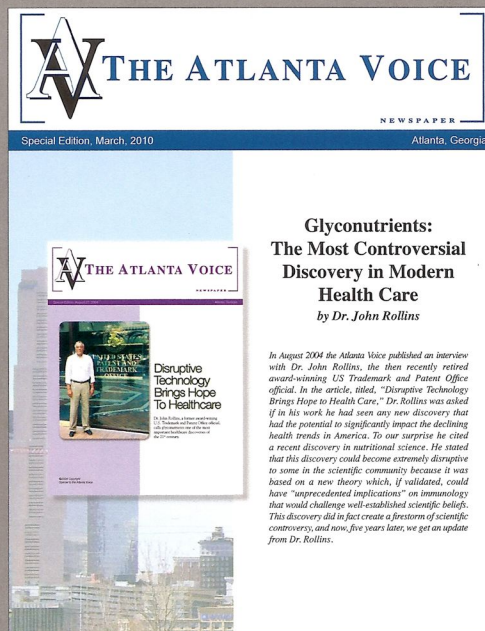
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surprise he cited a discovery in nutritional science. That discovery was glyconutrients. Dr. Rollins later wrote a follow up article in that same publication where he stated; "I first saw the patent application for glyconutrients when it came across the desk of one of our junior examiners in the summer of 1996. I followed the examination process very closely without getting directly involved. What first caught my attention was that I had personally reviewed and approved patents over a decade earlier by the same inventor, Dr. Bill McAnalley, who had at that time discovered, isolated and developed a processing technique that could stabilize and extract the beneficial ingredient in the fresh gel of the aloe vera plant, which was responsible for its rich history as one of the most recognized health-promoting plants on earth. This aloe molecule was identified as a uniquely structured long-chain polysaccharide, which is a carbohydrate comprised of long chains of sugars.

Dr. McAnalley had shown that this aloe vera polysaccharide was effective in supporting various functions of the immune system in ways that no other nutrient could reproduce. The discovery of this aloe polysaccharide resulted in the issuance of over 150 patents worldwide. The biological role of sugars in the human physiology was practically unknown in the early 1980s, but by the 1990s a whole new science called glycobiology had evolved to study them. Glyco is the Greek word for sweet, and glycobiology is the study of the biological role of a small group of sugar molecules that are used like letters of an alphabet to make cellular words. Of the more than 200 sugars found in nature, eight primary sugars have been shown to combine with themselves or with proteins or fats to form word-like structures on the surface of cells with unlimited coding capacity.

Science has recently discovered that when sugars are missing in these cell surface structures, the immune system can become compromised, allowing these abnormal cells to proliferate and go unnoticed. Therefore, the pharmaceutical industry has allocated tens of millions of dollars for the development of new carbohydrate-based drugs. So enormous is the potential

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of synthesized sugar-based drugs, that glycobiology has become known as medicine's last frontier.

In 1996, Dr. McAnalley submitted a new composition-of-matter patent to our office based on a composition of plant-based polysaccharides, now known as Ambrotose® complex. He had discovered that the primary sugar in the aloe vera gel, called mannose, was the same primary sugar used by our cells to make cellular word structures. Dr. McAnalley's hypothesis was simple and grounded in his years of clinical experience with the immune-supporting effects of aloe vera polysaccharides.

It went like this: The body needs all eight of these key sugars for healthy cellular structures and a properly functioning immune system. Most of these sugars are deficient or missing from our modern diets. Even though the body has a mechanism for converting glucose into these other sugars, it appears to be deficient in its ability to keep up with the demand based on the growing evidence of altered sugar structures. In addition, science had recently shown that special pumps are located on the intestinal wall with the sole purpose of extracting mannose from the food we eat. Cellular pumps then move this mannose into cells to build structural glycoproteins.

These facts convinced Dr. McAnalley that the body was designed to obtain these important sugars through diet. So he hypothesized that combining his stabilized aloe vera polysaccharides with other plant extracts containing nutritionally effective levels of the other sugars or their precursors could provide the body with a new source



of vital nutrients just as important as vitamins, minerals, amino acids or fatty acids, only with their own unique immune-supporting capabilities.

Mannatech introduced Ambrotose complex to the market in the fall of 1996. Over the next nine to ten years, hundreds of thousands of consumers began to experience the type of health benefits that you might expect from immune system support, and soon, Mannatech was no longer a small, low-profile nutritional research and development company.

By 2005, news of the discovery of glyconutrients had reached all the way to the international glycobiology community. Those researching the pure science of glycobiology were intrigued by the possibilities of Dr. McAnalley's discovery.

In 2007, Mannatech was awarded first place at the Scripps Center for Integrative Medicine's 4th Annual National Supplements Conference for its poster presentation on how plant polysaccharides can be digested by colonic bacteria.

In February 2008, research presented by Dr. Talitha Best (Flinders University, Adelaide, Australia) at the 36th Annual International Neuropsychological Society Meeting in Waikoloa, Hawaii, showed in a trial of 109 healthy, middle-aged males, that Ambrotose complex powder significantly improved memory and cognitive function.

In September, 2009, two more research posters were presented at the 9th Annual Jenner Glycobiology Symposium in Brussels, Belgium. The first poster presented data from a preclinical study which showed that oral administration of Ambrotose complex affected specific genes that help modulate the immune system. This study provides a more in-depth understanding of how Ambrotose® is supporting particular defense and repair mechanisms.

The second poster showed an open-label human-dosing study conducted by St. Georges University of London (Alvi, Fraser, Tarelli and Axford) to evaluate the safety and the glycosylating effects of Ambrotose supplementation. Results demonstrated both safety and significant changes on serum glycosylation patterns. To cut through the scientific terminology, this poster confirmed that cell surface sugar structures can in fact be influenced by Ambrotose complex.

These research findings will probably go completely unnoticed by the same national media, but not by us in the science community. This is huge. In my opinion, there may be no bigger discovery in the quest for optimal health. This might help us begin to understand why hundreds of thousands of people around the world claimed to have and continue to experience such wonderful quality-of-life benefits from the use of glyconutrients. More research will be needed to define the biological significance of all these findings, but it is a giant first step for nutritional glycobiology. There is a major shift toward integrative health occurring in our country. This strategy combines the best in modern medicine with the best nutritional technologies that support the body's own immune functions. Integrative health may be an industry saving strategy for health care, and glyconutrients may be the best technology to support that change."

Publishers notes: Dr. Carson is not a salesperson or spokesperson for any Glyconutritional company. He also does not give medical advice regarding the use of glyconutrients. His experience with glyconutrients is strictly his own personal testimony. He recommends that anyone needing medical advice should seek consultation with their doctor or other knowledgeable healthcare professional

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