



## NIH Invests \$10 Million in Study of How Cells Communicate

Smart Sugars Lesson # 39

by JC Spencer

Announcement was made October 6, 2011 that researchers hope to learn how cells communicate. Using this information, researchers hope that cells that cause human neurological and other diseases can be manipulated.

New discoveries in glycomics build upon all that we already know. Knowing what to do with this data is the key. We do not need new drugs to manipulate cells. We need Smart Sugars to LET the cells communicate like they were designed. This is accomplished by the glycoprotein receptor sites which are made from these sugars. The glycoprotein coating of cells somewhat like fuzz on a peach or trees on the earth make up the Operating System (OS), the communication system of the body. This is how the DNA codes are read and processed.

The \$10 million grant by the National Institutes of Health is awarded to the University of Nevada, Reno and the University of Nevada School of Medicine for research into how cells communicate.

I discuss the basics of communication in Chapters 8, **Communication between systems** in my textbook, **Expand Your Mind - Improve Your Brain**. This lesson will briefly review that information where in Chapter 5, I say, "... we will explore various aspects of this relatively new science of how cells communicate.

**New Scientist**, 10/02 reported, "*This is going to be the future,*" declares biochemist Gerald Hart of Johns Hopkins University in Baltimore. *'We won't understand immunology, neurology, developmental biology or disease until we get a handle on glycobiology.'* ... *'If you ask, what is the glycome for a single cell type, it's probably many thousands of times more complex than the genome,'* says Ajit Varki, Director of the Glycobiology Research and Training Center at the University of California in San Diego ... Raymond Dwek, Head of the University of Oxford's Glycobiology Institute, who coined the term "**glycobiology**" in 1988, says that sugars were often dismissed as unimportant, *'as just decorations on proteins - people didn't know how to deal with them.'* They could not have been more wrong.

"As recent advances in genetics have unfolded, the importance of sugars has become ever more apparent ... Varki sees it as a journey of exploration. *'It's like we've just discovered the continent of North America. Now we have to send out scouting parties to find out how big it is ...'*

"Many participants eating phytosugars (plant sugars), in our nutritional pilot surveys, not only experienced improved cognitive abilities, but also experienced overall general health and well being. If you are starting to replace your regular table sugar, we would appreciate your completing a general health evaluation form which you can ask for or download from our website at <http://endowmentmed.org>

"... While the science of glycobiology is relatively new it was not called as such until 1988. Some research in the US on glycoproteins and other sugar-containing molecules was conducted prior to 1980. In 1985 a research group at Oxford published a paper in **Nature** about glycosylation. Oxford University Press in 1988 started the journal **Glycobiology**. It was Raymond Dwek, Head of the University of Oxford's Glycobiology Institute, who actually coined the term "**glycobiology**" in 1988, and it was soon used in science around the world.

The following is a quote from the Institute for Glycomics at Griffith University: "*Glycomics is the study of applied biology and chemistry that deals with the structure and function of carbohydrates (sugars). The term glycomics is derived from the chemical prefix for sweetness or a sugar, 'glyco', and was formed to follow the naming convention established by genomics (which deals with genes) and proteomics (which deals with proteins).'*"

In Chapter 15, *Electrolytes play major role in neuron conductivity*, I report, "Your body contains a very sophisticated battery to power all of its functions including thought. When you feel "run down," that is exactly what has happened. Your battery is low. Without electrolytes, you could not move, think, or live.

"Electrolytes are in a gel or liquid of salts that conduct electricity. These salts are made up of certain minerals including calcium, chloride, magnesium, potassium, and sodium ions, which are essential for the flow of electrons and, of course, good human health. Because electrolytes are essential minerals, they cannot be substituted in the diet with anything less. These minerals are absolutely vital." The absence of these minerals results in poor communication and a flawed immune system.

Download Lesson #39

<http://www.endowmentmed.org/pdf/SmartLesson39.pdf>

Source: **Expand Your Mind - Improve Your Brain**; GenomeWeb reporter NEW YORK GenomeWeb News; Trehalose Handbook Vol. 1, 2, & 3.

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