

Eight Essential Sugars

There are eight essential saccharides or sugars, which are involved in immunity, cell to cell communication and other important functions. They are:

Mannose

Mannose was the first glyconutrient discovered. It is found in **Aloe Vera Juice**, reishi and shiitake mushrooms, cranberries and some types of bran. Mannose helps flush E. coli bacteria from the urinary system to prevent urinary tract infections, which is one reason why **Cranberry/Buchu** can be helpful in preventing urinary tract infections. Mannose supports the immune system by inhibiting tumor growth and spread and helps prevent parasitic, viral, bacterial and fungal infections. It will help in tissue repair and will ease inflammation in rheumatoid arthritis. It also helps lower blood sugar and triglyceride levels.

Galactose

Galactose is abundant in dairy products and is found in some fruits, sugar beets and some gums and mucilages. Galactose is called the "brain sugar" as it helps trigger long-term memory formation. It supports the immune system by enhancing wound healing, inhibiting tumor growth and metastasis, and decreasing inflammation. People with arthritis and lupus show low galactose levels.

Milk sugar or lactose is a disaccharide containing glucose and galactose. The body requires the enzyme lactase to break lactose into its two simple sugars, glucose and galactose. For those lactose intolerant individuals who get indigestion and gas from uncultured dairy foods, **Lactase Plus** will help the body obtain this important sugar.

Xylose

Xylose is found in blackberries, raspberries, aloe vera, guava, pears, broccoli, green beans, okra, cabbage, corn, spinach, eggplant and peas as well as herbs such as echinacea, boswellia and psyllium. Xylose is an effective antibacterial and antifungal and helps to prevent dental cavities. It promotes the growth of friendly flora in the colon. Absorption of xylose is decreased in diabetes and with some intestinal disorders, like colitis. Xylose is partially responsible for that "gut feeling" as it is a main component in cell communication between the gut and the brain.

Fucose

Fucose is found in breast milk, Brewer's yeast, seaweeds (such as **Kelp**), and in several medicinal mushrooms. It should not be confused with fructose. High fructose corn syrup contributes to obesity, while fucose has been shown to help immunity, reduce inflammation, guard against respiratory infections and help fight herpes, bacteria, viruses and cancer. It is particularly beneficial to the nervous system. Studies have shown that animals develop amnesia when fucose is lacking in the brain. Fucose metabolism is abnormal in cystic fibrosis, diabetes, cancer, arthritis and shingles.

N-Acetylglucosamine

Sources of N-Acetylglucosamine include shark and bovine cartilage and shiitake mushrooms. It helps with inflammation

and cartilage repair and benefits joints, ligaments and tendons. It is considered an immune modulator and shows activity against tumors and HIV. It also helps transport iodine into the thyroid. Shark cartilage and reishi mushrooms are found in **SC Formula**.

Glucosamine sulfate is what is used in the treatment of inflammatory conditions such as arthritis. The body uses it to make N-acetylglucosamine and the glycolipids that are used to make joint cartilage. It inhibits enzymes that breakdown cartilage, increases joint lubrication and reduces joint pain.

N-Acetylgalactosamine

N-Acetylgalactosamine is another important sugar derived from shark and bovine cartilage. Like the other sugars, it is essential for cellular communication. Studies have shown it inhibits tumor spread. Low levels have been found in heart disease, rheumatoid arthritis, chronic inflammation and cancer.

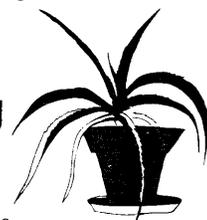
N-acetylneuraminic Acid

This sugar is an immune modulating sugar found in amniotic fluid, breast milk, whey protein and eggs. High levels in breast milk suggest it is important for infant development. Problems with metabolizing N-acetylneuraminic acid cause slow development and growth in infants. It aids brain development and has been shown to improve memory and cognitive performance. Studies have shown it benefits the immune system and inhibits the viruses that cause influenza, hepatitis, pneumonia, cold sores and colds. It affects the viscosity of the protective mucus layer of the respiratory tract and blocks the release of histamine to reduce asthmatic and allergic reactions. It also has a positive effect on blood coagulation and lowers LDL cholesterol. Its metabolism is disturbed in those with Sjogren's syndrome and in alcoholics.

Glucose

Glucose is found in many common foods such as grains, honey and potatoes as well fruits. It is a major source of energy for plants and animals. Most people are getting too much glucose and not enough of the other essential sugars.

Supplements Supplying Beneficial Sugars



The ideal way to get these beneficial sugars is to eat plenty of fresh fruits and vegetables and other foods that contain them. There are also supplements that can supply these sugars for special needs. They are:

Glyco Essentials

The Glyco Essentials formula is your "one stop shopping trip" for all beneficial sugars. Not only does it contain all eight of the essential sugars we've just discussed, it also contains numerous herbs rich in these sugars, including aloe vera, shiitake and maitake mushrooms and cordyceps. It also contains plant extracts containing

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