



# SWEET JUSTICE

SUGAR CAN ACTUALLY BE GOOD FOR YOU. IF IT'S A PLANT SUGAR, OR GLYCONUTRIENT, THAT IS.

BY JOANNA HALL.

US-based Mannatech, a company that specialises in glyconutritional science, explains.

"The sugars which we receive in abundance in our modern diets are glucose and galactose. Glucose is by far the most abundant of these two, since the most common sweeteners in foods – sugar and corn syrup – contain very high proportions of glucose.

"People who consume substantial quantities of milk products get rather large amounts of galactose, since lactose, also known as milk sugar, is composed of one glucose molecule and one galactose molecule bonded together."

The "missing" sugars come from a diverse array of plant and animal sources. "Particularly rich sources of these materials include fresh, uncooked fruits, vegetables and seeds, and also plant gums and certain types of algae."

#### COMMUNICATION BREAKDOWN

So why are these sugars high on our bodies' list of "must-haves"? The answer is that every cell in every system of our organs requires them for communication.

The process of cell-to-cell communication can be compared to the shapes we use to form the letters in our alphabet.

We combine these letters into almost limitless variations to form words, which are then assembled into sentences to communicate messages. In our bodies, sugars are necessary to form the shapes

that construct the letters, words and sentences that express the "language" of our cells.

Each word, or glycoform, conveys a message

of its own, and virtually every cell in our body is coated with these glycoforms. By communicating properly, therefore, our cells can function at their best, and lead to a better quality of health.

When these essential sugars are missing, however, our cells either cannot "talk" to one another or they miscommunicate. The result of this communication breakdown, some experts believe, is disease.

If glyconutrients are found in plants, does that mean we can simply increase our intake of plant foods to get enough of them? The answer is yes and no.

"While plants do contain essential glyconutrients, we generally do not consume rich enough sources of these materials, or as wide an assortment as our ancestors did as hunter-gatherers," explains Sinnott.

"Additionally, the way that our food is processed can deplete it of these glyconutrients. Even moderate cooking can destroy a large amount of the essential nutrition from plants, and these days we cook just about everything except salad."



#### THE ROLE OF SUPPLEMENTS

Ask most nutrition experts and they'll tell you they'd prefer people to get their vitamins and minerals from foods rather than supplements. But sometimes this isn't always easy.

There are proven circumstances where supplementation is essential. For example, women are advised to supplement their diets with folic acid both before and during pregnancy. And other nutrients that can be lacking, and require supplementation, include calcium and vitamin D for the prevention and management of osteoporosis, and fish oils for heart disease.

The same principle applies to glyconutrients. To fill this nutritional gap, Mannatech developed Optimal Health.

It's a family of four key supplements: the "flagship" glyconutritional supplement, Ambrotose; a multivitamin/multimineral called Catalyst; Ambrotose AO, which provides optimal amounts of water-soluble and fat-soluble dietary antioxidants; and Plus, which provides precursors, molecules for synthesis of essential hormones within the body.

Other glyconutrients exist, but Mannatech's have a key difference. "Ours are not based on synthetic, non-food sugar structures," explains Sinnott. "They are formulated with rich sources of essential sugars isolated from real plants."

#### THE FUTURE OF WELLBEING

Glycobiology has emerged as a new technology only in the past decade. So what's in store for the future?

For Mannatech, it's a form of "genetic blueprinting". "We are currently developing the first generation of nutrigenetics/nutrigenomics tools, to help guide consumers toward specific health products in our range," explains Sinnott.

Using these tools, an individual will be able to take a DNA test to determine if they have genetic factors which put them at a higher risk of certain health conditions, such as cardiovascular disease and immune system disorders.

"Based on this profile, they can then follow recommendations for proven ways to reduce these risk factors, such as increasing intake of certain nutritional substances," Sinnott says. Human genetic constitution has changed relatively little in 40,000 years, but what we eat and how we live has changed dramatically, which is why we sometimes need to turn to supplementation to redress the balance.

Sinnott agrees. "While you may already take vitamins, minerals, amino acids and enzymes, glyconutritional supplements provide the 'missing link' that will help you preserve your vitality."

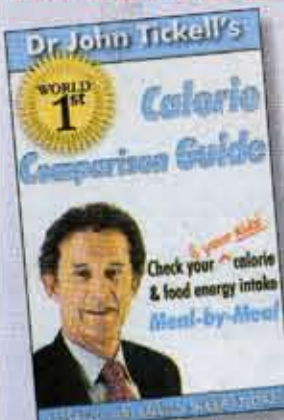
#### FURTHER INFORMATION

Optimal Health can only be purchased directly from Mannatech online. For further information visit [www.mannatech.com.au](http://www.mannatech.com.au)  
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When it comes to health, modern life has been getting a bad rap. Although we have more effective treatments for cancer, and mortality rates are dropping, the disease is still on the rise – around 90,000 new cancers are diagnosed in Australia each year. Diabetes and obesity are also rampant. In Australia, around one million people have diabetes, and seven million are overweight or obese.

Modern technology is one culprit responsible for our ills. Labour-saving devices, such as cars, remote controls and elevators, have literally taken the grind out of our daily lives and resulted in many of us becoming couch potatoes.

But poor nutrition is another key player in this unfolding health drama. According to leading nutritionist and author of Nutrition For Life (Hardie Grant Books), Catherine Saxelby, we are suffering from malnutrition in the midst of plenty.

#### PROBLEMS WITH MODERN NUTRITION

"The modern diet isn't good for our health for many reasons," she explains. "We eat too much of everything, but we also over-consume foods that are high in fat, sugar and salt, we drink excessive alcohol, our fruit and vegetable intake is only half of what it should be, and we're short on fibre and many minerals."

Saxelby also says that, despite huge gains in nutritional knowledge, healthy eating has not become any easier. "For many of us it has become harder because of our busy lifestyles," she explains. "Fewer and fewer people regularly cook and eat at

home, and many of us rely on takeaway and fast foods. And when we do eat out, the meal is not always a healthy one."

Even if you pack your shopping trolley with fresh fruits and vegetables each week, nutritional question marks remain. There's evidence from the UK and the United States that produce today contains fewer minerals than it did 60 years ago.

Use of synthetic fertilisers, plant breeding, mineral-depleted soil and long delays between harvesting and the consumption of conventionally farmed foods, have all taken their toll. What it means for the consumer is that the "apple a day" our grandparents used to eat doesn't deliver the same kind of nutritional punch today.

#### NOT ALL SUGARS ARE EQUAL

One area of nutrition which has come under the spotlight in recent years is glyconutrients. These are dietary nutrients composed of sugars, also known as saccharides or plant sugars. But they shouldn't be mistaken with the white stuff you spoon into your coffee each morning.

These sugars come from raw, unprocessed plant foods, and are important for nutritional health. They are also regarded as a "missing link" in nutrition.

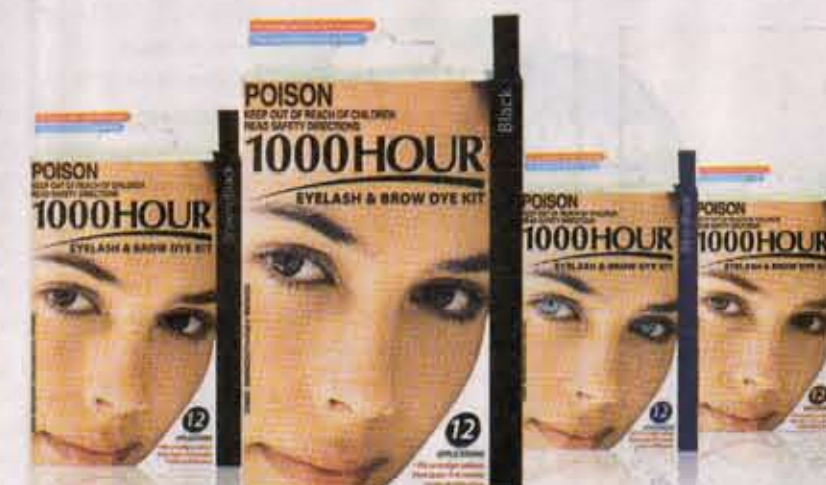
Although research into this field started to emerge in the 1960s, it wasn't until about a decade ago that the specific role of glyconutrients first became known. In 1996, a study published in Harpers Biochemistry reported that the body needed eight specific sugars, and that only two of them were prominent in our diets.

Robert Sinnott, chief science officer and vice president of research and development of



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