All over the world, the incidence of diabetes is on the increase. In the United States of America alone, there are approximately 18.2 million people suffering from diabetes.\(^1\)

According to the Center for Disease Control and Prevention (CDC), diabetes is expected to increase by over 165\% in the next fifty years. “Rates are expected to climb rapidly because of lifestyle changes, including increases in obesity…”\(^2\).

**What is diabetes?**
Diabetes is a disease in which the body either does not produce or does not properly use insulin. Insulin is a hormone the body employs to bring glucose from the blood into tissues to be used as an energy source. Special cells in the pancreas called beta cells create insulin. If the efficiency of these cells is compromised due to poor cellular intake or elimination, they may become over-burdened and can ‘wear out’.\(^3\)

There are two major types of diabetes and a ‘specialist’ diabetes type that affects only pregnant women\(^1\):

Type 1 Diabetes is the result of the body’s failure to produce insulin.

Type 2 Diabetes is the result of insulin resistance combined with relative insulin deficiency (this is when the body fails to utilize insulin properly).

Gestational Diabetes affects only about 4\% of pregnant women but generally disappears immediately following the birth of the baby.\(^4\)

Diabetics can become ill if they become hypo- or hyperglycemic - that is when the blood sugar becomes too low or too high.\(^5\)

Keeping blood sugar levels in the safe zone is critical in controlling this disease.

**At GNLD…**
We refer to these ups and downs in insulin levels as the Glycemic Roller Coaster. In addition to causing a near constant demand for insulin secretion, two important secondary signals are sent out as a result of this roller coaster ride. The first causes the body to go into fat storage mode, and the second curtails fat utilization. The result is known as the Insulin Trap, and it will impact your ability to lose weight as well as your ability to control diabetes.

**Glycemic Response Index**
Carbohydrates are classified as either high-glycemic response or low-glycemic response depending upon the measure of the incremental glucose response per gram of carbohydrate, which affects how rapidly they are absorbed as glucose. During the past decade several studies have provided strong support to demonstrate the correlation between type 2 diabetes and a diet that consists of long-term intake of high-glycemic index carbohydrates.

Researchers have found that in addition to high-glycemic index foods producing greater insulin resistance, replacing them with low-glycemic index foods can actually improve glycemic control. These changes include replacing products made with white flour and potatoes with whole-grain, minimally refined cereal products.\(^6\)

Scientists have established that because low-glycemic response foods are converted to glucose and enter the bloodstream more slowly, they also provide a greater amount of sustained energy. Because they cause less insulin to be secreted, blood glucose levels...
Unhealthy cells play a central role in the onset of diabetes. Diabetes is characterized by poor beta cell function. Beta cells create insulin in the pancreas and scientists believe that when the body is developing insulin resistance, these cells are over-burdened and can “wear out”.

Research suggests that beta cell function begins declining significantly before diabetes is diagnosed. Proper nutrition, therefore, must begin at the cellular level.

This current research is, of course, not new to GNLD. For over 45 years, GNLD scientists have known that good nutrition begins at the cellular level. Each cell is like a miniature human body. Every cell must be able to take in nutrients and eliminate waste products efficiently through the membrane that surrounds it.

In 1958, scientists formulated a dietary supplement that replaces the lipids and sterols lost through deficient diet or food processing. This supplement became known as Tre-en-en Grain Concentrates. Tre-en-en is a unique combination of concentrated extracts from whole-wheat berry, rice bran and soybeans.

With the rise in diabetes and other weight-related diseases, cellular nutrition and supplements that improve cellular efficiency are more critical now than ever before.

The complete GR² Control products work together to:
• Re-balance nutrient intake
• Re-program the biochemical signal network and
• Re-energize the body.

The GR² Control programme utilizes the latest understanding of the glycemic response to lower insulin secretion demands, keeping you off the Glycemic Roller Coaster and out of the Insulin Trap. It provides sustained feelings of satisfaction between meals, maintains balanced and controlled energy levels, and keeps “fat-storage doors” closed and “fat-burning doors” open. Formulated with supervision and input from the Scientific Advisory Board and the Global Science Network, GR² Control is truly on the cutting edge of weight loss and disease prevention science.

Controlling diabetes and other diseases through a sound, scientifically based nutritional programme makes good sense. GNLD is proud to be a part of the solution to these lifestyle problems.

References
Over the past two decades, obesity in children has rapidly increased all over the world - in the United States of America, it has nearly doubled. As a result of this disturbing pattern, more children are being diagnosed with what are generally considered adult conditions, including sleep apnoea, hypertension, high cholesterol, and type 2 diabetes.\(^{(1)}\)

Additionally, recent studies have found that overweight children consistently perform lower on tests measuring math and verbal skills.\(^{(2)}\)

Although genetics are a factor, inactivity and poor nutrition prevail as root causes of this trend. According to the Centers for Disease Control’s National Health and Nutrition Examination Survey (NHNES), today’s American youth are considered the most inactive generation in history. Only one state in the USA, Indiana, requires daily physical education for students in elementary schools.\(^{(3)}\)

According to Michael Goran, Ph.D., professor of preventive medicine and physiology and biophysics at the Keck School of Medicine at USC, “Obesity is now a critical common nutritional problem in children. Studies show that the likely common pathway linking obesity to increased risk for type 2 diabetes and cardiovascular disease is insulin resistance”\(^{(4)}\).

In addition to health issues, there is a social stigma attached to being overweight.\(^{(1,4)}\)

Children do not want to be overweight, but they need to be given the tools to achieve healthy weight levels. The fundamental steps leading towards healthy weight are exercise and diet. Whether through organized children’s activities or planned family outings, the warcry for young people should be, “Let’s Get Moving!”

The second fundamental principle in avoiding Childhood obesity is focused round healthy dietary choices. In a society where “super-sized” and “fast” describe many food options and fast food outlets target children as their primary market, adults need to show responsibility in educating children and providing healthy alternatives.

A health nutritional plan must offer a variety of nutrients and a balance of protein, carbohydrates, and fat. Fad diets encourage a temporary approach with weight loss as the ultimate goal. GNLD’s GR\(^{2}\) Control, on the other hand, promotes overall improved health while empirical an individual to control glycemic response, enabling the body to burn fat as fuel rather than storing it. In other words, GR\(^{2}\) Control helps you lose weight while improving your overall health.

Worldwide research is indicating that dietary supplements are increasingly necessary to fill the nutritional gaps created by the processing methods that have become standard in the food industry. We should not leave our children out of the supplement equation. With products such as Vita Guard and Vita-Squares which contain vitamins, carotenoids to strengthen immunity, and Tre-en-en Grain Concentrate to support optimal growth and development, we can address these critical nutritional needs. Our children deserve the best, and that begins with proper nutrition.

References
Q. I asked my doctor about high-protein/low-carbohydrate diets, and she said high-protein diets are bad for the kidneys. I would like to begin the GR2 Control programme, but I'm concerned because it seems like a high-protein diet.

A. While the GR2 Control Meal Replacement Protein Shakes themselves are high in protein and low in fat and carbohydrates, the programme as a whole is not a high-protein diet. In fact, the GR2 Control Programme is scientifically designed to balance protein, fat, and carbohydrates in order to enhance weight-loss. Reviewing a weight-loss programme with your doctor is an excellent idea. We assure you that the GR2 Control plan, as outlined in the Success Guide, will not cause harm to the kidneys.

Q. Is the amount of sodium in the GR2 Control Meal Replacement Protein Shake considered high?

A. Sodium is an essential nutrient. It has been classified as an electrolyte and is also integral to the metabolism of protein and carbohydrates and the maintenance of the body’s acid/alkali balance. Although there has been no established RDA for sodium, most medical experts agree that we should consume no more than 2400 milligrams of sodium per day (American Heart Association: www.americanheart.org)

The GR2 Control Meal Replacement Protein Shakes have 350mg of sodium per serving. With the two servings per day and the recommended meal plan, your sodium intake should fall well below the generally accepted recommended daily amount.

Q. My teenager struggles with her weight. What would be the best diet for her?

A. The best plan for a healthy lifestyle for children begins with regular exercise and a nutritious diet that is low in sugar and "junk food". The word “diet” too often implies a temporary nutritional programme; most children need to learn healthy eating habits early to encourage a lifetime of healthy choices that include a balance of proteins, carbohydrates, and fats. The elevated intake of crisps, carbonated cold drinks and processed fast foods are a major problem for many children today.

If your teen’s paediatrician suggests that your child needs to lose weight, consider the GR2 Control programme. It is a safe, effective method. Through the meal replacement protein shakes and the Enjoy and Avoid booklet, the Programme will guide you and your child towards healthy food choices that enable the body to burn fat for fuel rather than storing it.