

RADICAL SHIFT

D.N.A | Dynamic Nutrition Advantage™

Overview

Functional foods are, by definition, those foods, which provide an additional physiological benefit beyond their basic nutritional needs. The purpose of the Dynamic Nutrition Advantage™ formulation is to provide a convenient, palatable fruit and vegetable-based functional beverage that delivers plant bioactives not regularly consumed in human diets. Dynamic Nutrition Advantage™ is different from apparently similar products that promote only a high-ORAC value (antioxidant activity).

It is largely the health of each cell, which determines the overall health of the individual. The Dynamic Nutrition Advantage™ hero ingredient CellActiv® functions by enhancing the body's own internal defense systems by directly interacting with the expression of the cell's DNA, the genetic Master Code of the body. This **epigenetic** function of the product elevates it into an entirely **new class** of functional food. CellActiv® activity extends well beyond the antioxidant claims made for so many superfood supplements. CellActiv® **switches on** the cell's own antioxidant-manufacturing machinery to produce antioxidant potential far more powerful than any found regularly or most any superfood.

Carefully developed by biochemists and clinical nutritionists to include a diverse and complementary range of exotic ingredients, the Dynamic Nutrition Advantage™ formula is also a breakthrough and **dramatic new** approach to cellular health. The potent plant ingredients provide a vast array of phytochemicals supporting CellActiv® cellular defense function which combined hold the potential to act favourably to positively influence the health of each cell providing a physiological environment conducive to overall wellness.

To put the antioxidant story into perspective, it is useful to consider that antioxidants function by quenching (neutralising) highly reactive molecules called **free radicals**. Free radicals are generated by exposure to all sorts of environmental effects – radiation, pollution, cigarette smoking, barbecued meats, emotional stress, poor internal detoxification processes, obesity, and diabetes and so on.

We are constantly being bombarded by free radicals and our cells have a continuous need to quench these very unstable molecules which trigger all sorts of **diseases** including heart disease and cancer as well as inflammatory diseases of all types. Healthy cells are perfectly capable of dealing with free radicals; the cells' own generated antioxidant enzyme defences are so powerful that they can quench millions of free radicals each minute. Because these antioxidants are **enzymes**, they can continue to **recycle** themselves for days quenching untold numbers of free radicals – **a very efficient system!**

By contrast, a diet generated antioxidant such as Vitamin C, Vitamin E, beta-carotene, resveratrol, coenzyme Q10 and so on, are all able to quench to just **one** free radical **per antioxidant** molecule! This is not a misprint! One diet-derived antioxidant molecule quenches just one free radical, end of story! One **cell-generated** antioxidant enzyme quenches **millions** of free radicals **every minute**

“According to renowned UC Berkeley molecular biologist Dr. Bruce N. Ames, each cell in your body is hit by free radicals 10,000 times every day. Your body needs a varied supply of antioxidants powerful enough to protect each of those cells. With this huge army of free radicals waging war, we must support the body in more ways than one.”



Background to the Product

Health authorities in all countries stress the importance of plant foods in the prevention of disease. The Brassica family, which includes broccoli, is especially recommended for its disease-preventive effects. Plant foods are not only good sources of vitamins and minerals but perhaps more importantly they are sources of phytochemicals that modern Science is now recognising as having powerful effects on the chemistry of our cells. Plant foods contain many thousands of such phytochemicals, many of them unique to particular species. Most of these substances can be considered to be antioxidants but their physiological value is far greater than provided by antioxidant function alone.

The ORAC value which is often used to rate the antioxidant potential of plant foods is a simple in vitro tool to categorise some plant foods that have high antioxidant potential. However it fails to identify other plant foods, which have exceptional bioactivity, unrelated to ORAC. Some antioxidant products claim that they can influence the ORAC value in an individual's blood sample. This is completely invalid as ORAC has no meaning within the body. Products that claim to improve the individual's antioxidant status are based on erroneous and invalid assumptions.

Beyond ORAC

The ORAC scale was developed as a tool to compare the antioxidant capacity of various food samples assessed in a test tube. This test has no relationship to the effect of that food when consumed and metabolised. What is important is the nature of the food-derived molecules that finally reach the human cell, after being absorbed. A high ORAC food as measured in a test tube may be so poorly absorbed that it never reaches the cells in sufficient quantity to have a significant effect.

Biochemists and other scientists who are experts in this field have developed the DNA formulation. A good example of serious misperceptions about the effect of phytochemicals in humans; to obtain the human equivalent quantity of resveratrol used in these studies, an individual would have to consume several hundred bottles of red wine daily! is the currently popular resveratrol from grape skins.

The laboratory and animal studies on this compound have never been supported by human studies. This is because it is not practical for humans to consume the quantities, which were given to the laboratory animals. For these reasons, the DNA formulation contains some premium exotic fruits with high ORAC values but, more importantly, contains other key bioactive ingredients that don't have a particularly high ORAC value. All things considered, ORAC is not particularly relevant to the potential biochemical effects at cellular level.

Sulforaphane 'Switch'

The broccoli family of vegetables for example do not have particularly high ORAC values, yet contribute a far greater benefit to cellular health than most, if not all, known plant foods. The Sulforaphane compound, which characterises the bioactivity in the broccoli family, is nothing short of remarkable in its diverse benefits in cellular defence.

In particular, the broccoli sprout is a very concentrated source of Sulforaphane that enables the cell to 'switch on' its own antioxidant 'manufacturing plant'. The antioxidants made by the cell itself are far more powerful in their effects than those provided by foods. The premium exotic fruits selected for inclusion in Dynamic Nutrition Advantage™ contain a range of different bioactives that have been shown to impact on human health in different ways. These other effects may be completely unrelated to the plant's ORAC value.

Switching on DNA expression

The most significant phytochemicals influence critical processes in cellular defence within human cells. The human cell uses many complex mechanisms for defending itself against disease processes. Plant chemicals are beneficial to human cells because they send signals to important parts of the cell's chemistry, enabling the cell to switch on or switch off processes involved in self-protection.

The most important of these signals send messages to the genes, telling the cell to make more or less of key cellular substances. The genes are made up of chromosomes and each chromosome is made up of strands of DNA, which contains the codes for every single aspect of our being.

We inherit DNA from our parents, so that we may inherit our hair colour from our mother but our eye colour for example from our father. But the DNA contains code for far more intricate aspects of each of us. It even codes for how efficiently we can detoxify alcohol or nicotine or caffeine. This means that we are born with certain genetic tendencies that determine how efficiently our cells work.

This might imply that we are 'stuck with' what we inherit. Luckily this is not true because we know that food molecules can epigenetically modify the way our DNA operates. And this opens up the really exciting prospect of using functional foods to dramatically influence our health and wellbeing.

The concept of using food molecules to switch on or off the genetic code is now the subject of very active scientific investigation. **Nutrigenomics** is the study of food molecules that influence our genes. In many ways, it could be considered that our food chemicals talk to our DNA. If we consume those foods, which are rich sources of the phytochemicals, which tell our DNA to switch on our cellular defense mechanisms, we are more likely to resist disease.

If instead, we consume foods, which contain substances that damage our cells or keep our defense processes switched off, we leave ourselves open to disease. In fact, this is exactly why a poor diet will tend to promote disease. Apart from the fact that a bad diet may leave us deficient in vitamins and minerals or that too much fatty or sugary food will cause disease in their own way, a diet low in plant phytochemicals leaves us very vulnerable to disease because our cellular defences are not optimally switched on. Good health is largely determined by how well our cellular defenses function. This defense is now within our personal control by selecting a diet and other lifestyle practices that ‘switch on’ our internal defences.

The Dynamic Nutrition Advantage™ has been designed to include plant phytochemicals known to promote these defence mechanisms. Each of the ingredients has its own important phytochemical profile. Whilst it has been designed to include a broad array of antioxidant substances, its power lies more in the way in which key phytochemicals **talk to your cells’ DNA**.

Features and Benefits of the Product

Features	Benefits	Comments
CellActiv® Broccoli Sprout	<p>Broccoli contains a powerful bioactive, sulforaphane often absent from modern diets.</p> <p>Broccoli sprouts are around 50 times more powerful in their effect than fully-grown broccoli.</p> <p>Sulforaphane is well researched as a bioactive which has a nutrigenomic effect – it ‘switches on’ genes of the cell’s own defense system.</p> <p>The better the cells’ own defenses work, the better the overall health and healthy ageing.</p>	<p>A small quantity of sprout is equivalent in sulforaphane yield to consuming large amounts of broccoli vegetable.</p> <p>Our modern environment exposes us to many toxins (air pollution, pesticide residues etc) all of which must be detoxified by the cells if they are stay healthy. Sulforaphane taken daily provides a simple means of keeping the cells in ‘spring cleaning’ mode. This minimises the likelihood of disease. Cancer is known to be associated with cellular toxicity, which leads to damaged DNA.</p>
Chicory root (Inulin)	Inulin is a soluble fibre which has many health-promoting properties which include cholesterol-lowering, promotion of intestinal health and regularity, improves absorption of calcium, provides ‘food’ for ‘good’ bacteria within the intestines.	Inulin is completely soluble and quite tasteless. Diets low in plant foods are usually very low in essential fibre, especially the soluble fibre as found in chicory root.
Hibiscus Calyx	Studies show Hibiscus Calyx to have a blood-pressure lowering effect when consumed regularly. High blood pressure is common and contributes to heart disease.	Although claims about blood pressure are not permitted for foods, Hibiscus Calyx has a long history as a traditional medicine in many cultures.
Super fruits blend	<p>The fruits selected have high levels of individually unique bioactives, many of which have high antioxidant potential.</p> <p>Many of these fruits are also rich sources of Vitamin C and carotenoids including beta-carotene and lycopene.</p>	<p>Some of these ingredients have high ORAC levels but this concept is not the most important property of the product.</p> <p>Vitamin C, beta-carotene and lycopene are considered to be antioxidants but have many other valuable properties apart from their</p>

	<p>The Mediterranean fruit, Pomegranate has been shown to have a range of health benefits in a range of scientific studies.</p> <p>Purple grapes, another traditional Mediterranean fruit is well-known for its role in prevention of cardiovascular disease.</p>	<p>antioxidant effect.</p> <p>Mediterraneans are known for their cardiovascular health, attributed to the use of particular plant-based foods. The 'French Paradox' explains the way in which the French whose diet is high in animal fats have surprisingly low rates of heart disease. This phenomenon is attributable to the protective effect of the red wine consumed with meals.</p>
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Australian indigenous plants	Contains Wattle seed & Tasmanian Mountain Pepperberry. Piperine in Pepperberry helps to improve the bioavailability of other nutrients.	Bioavailability refers to the efficiency of absorption of a substance from the digestive system into the bloodstream and then into the cells.
Phytochemically-dense ingredients	A small amount of the food supplies a relatively high amount of these bioactive substances.	Small amounts of these foods can be more valuable than larger amounts of more common foods.
Foods not commonly consumed	It is recommended that we consume a wider variety of foods to ensure that deficiencies are minimised.	The product provides a range of bioactives which may not be found in common fruits and vegetables
All natural plant ingredients	Contains no additives that need to be detoxified by the cells.	Australians (and other populations) do not consume sufficient fruits and vegetables. Only 11% of Australian adults and 8% of adolescents consume the required levels.
No artificial additives	Avoids the adverse reactions that some people experience from artificial food additives.	The 'flowing agent', is a form of silica, silicon dioxide. Silica is naturally found in the body and has beneficial properties.