

***Information
Newsletter***

FLAX FACTS

did you know...

- To get the lignans that are in 1/8 of a cup of sprouted flaxseed you would have to eat one of the following:
 - 60 cups of broccoli
 - 100 slices of white bread
 - 45 lbs. of cabbage
 - 41 lbs. of strawberries
 - 6 lbs. of wheat
- Studies have shown that Omega-3 essential fatty acids (EFA) prevent second heart attacks by as much as 50% and increase life expectancy by three years.
- Health Canada has established a recommended daily intake (RDI) of EFAs that specifies the optimum minimal intake of Omega-3s for children and adults is approximately 800 - 1100mg per day, and that 10g of **Nutrican Sprouted Flax** will give you your RDI of Omega-3s.

Sprouted FLAX

Products

What You Need To Know About NUTRICAN Sprouted Flax.

Research has confirmed what has been known for centuries - Flaxseed is an outstanding nutritional food source that can play an important role in the prevention and treatment of many of today's chronic illnesses and diseases.

What isn't well known is that flaxseed can be difficult to digest and its nutrients poorly absorbed. Flaxseed has natural inhibitors to prevent digestion. This means the seed can be eaten, pass through the body and still grow into a plant. This is Nature's way of ensuring that animals, birds and humans distribute seeds. For example, when a person consumes whole flaxseeds in bread, there is NO nutritional benefit.

The way to overcome the problem created by these natural inhibitors is to sprout the seed.

Sprouted Flax Powders are like no other flax products available on the market today.

Sprouting increases enzymes, which start the seed on its way to becoming a plant. When the flaxseeds begin to grow, the natural inhibitors that protect the seed from being digested are no longer present. Sprouting flax biologically activates the seed. The plant proteins, oils, starches and vitamins are now BIOAVAILABLE for human digestion, resulting in better absorption.

NUTRICAN Sprouted Flax is dried and milled at a low temperature. This ensures that the resulting powder has

active enzymes which result in the highest bioavailability of any flax product on the market.

Sprouting also increases the seed's vitamin, mineral and lignan content and naturally stabilizes the essential fatty acids. Sprouting creates a stable product which DOES NOT REQUIRE REFRIGERATION. Ordinary powdered or milled flaxseed is not stable and requires special packaging and storage to prevent it from going rancid.

NUTRICAN Sprouted Flax MAXIMUM OMEGA-3 ESSENTIAL FATTY ACIDS & LIGNANS

Omega-3 Fatty Acids are the "good fats" required by your body for the construction of healthy cell walls. The human body cannot manufacture essential fatty acids. When we ate animals that grazed naturally on grass, Omega-3s were readily available in our diet. Now that animals are raised on grains in "unnatural" environments, it is much more difficult to get the Omega-3s that are essential for good health. Flaxseed is the best plant source of Omega-3 fatty acids.

NUTRICAN Sprouted Flax contains the maximum amounts of Omega-3 fatty acids. Sprouting flax increases the levels of Omega-3 fatty acids and, since sprouted flaxseed is more bioavailable, your body can absorb and utilize the essential oils more efficiently.

Lignans are phytoestrogens (plant-based chemicals) which appear to prevent cancer, bacterial, viral and fungal conditions. Flax is the best plant source of lignans.



Flaxseed is sometimes advertised as having increased lignans. Unless it is genetically modified seed, the amount of lignans in the seed is dependant on the type of seed and cannot be increased. Lignans are contained in the outer shell of the flaxseed. On average, flaxseed is 1.6% lignans.

Flax oil that is advertised as having increased lignans contains about 20% of the crushed outer shell particles which are present after the seed is pressed to extract the oil. Based on this, flax oil that is promoted as having increased lignans really only contains about 0.35% lignans. Additionally, normal flax oil does not contain the protein or fibre found in whole or sprouted flaxseed.

NUTRICAN Sprouted Flax contains the maximum amount of lignans in the most bioavailable form.

Nutrition

The connection between good health and good nutrition is indisputable. However, among those questioned in the 2000 American Dietetic Association Trends Survey, 38% indicated that "It takes too much time to keep track of my diet." (1)

Quite often, it takes years for an unhealthy lifestyle to show up in the form of disease or discomfort, so it is easy to convince ourselves that healthy eating takes too much time and effort.

We hope that after you have had an opportunity to read all of the information in our newsletter, you will be convinced that by making NUTRICAN Sprouted Flax a part of your daily diet, you will be one step closer to better nutrition and a healthier lifestyle.

Sprouted seed and grains are among the most complete and nutritional foods available. A seed uses its stored protein and carbohydrates for the germination process. As those nutrients are used, they change - proteins and complex carbohydrates break down into amino acids and simple sugars. Enzymes once dormant become alive and activate. This process makes sprouts a "pre-digested" food - ready to be used by your body for energy and rebuilding.

Enzymes are the nutrients and biological

catalysts that aid in the elimination of toxins, construction of new tissue, muscle, nerve cells, bone, skin and glandular tissue. Every single system of your body from the brain, to muscles, nervous system, vascular system, cell reproduction, growth, immunity, antioxidant defense system and digestive system depends upon enzymes. All of us have a limited capacity to produce enzymes. As we age, our body is able to produce less and less enzymes. It is the general decline in enzyme activity in our body that is a fundamental cause of aging.

Enzymes can be broken down into three groups: metabolic, digestive and food enzymes. Metabolic enzymes run our body taking fat, proteins and carbohydrates to continuously make repairs. A shortage of metabolic enzymes could jeopardize our health. Digestive enzymes help the digestive process to assimilate proteins, carbohydrates and fat. The rich enzyme concentration in sprouts can lead to heightened enzyme activity in your metabolism, leading to regeneration of the bloodstream.

If enzymes to aid digestion are not available in the food we eat, our body's digestive enzymes will carry the complete load, depleting the limited resources of enzymes. If we get external digestive enzymes from our food, as they appear in nature, more of our body's metabolic enzymes are available to prevent and maintain health. Enzymes are often destroyed in food that has been subjected to high heat or that has been processed.

There are 10 to 100 times more enzymes in sprouted seeds than in vegetables or fruits, depending on the enzyme and the seed that is being sprouted. There is no food on the planet higher in enzymes than sprouted seeds.

Sprouted Flax is an excellent enzyme source. Our patented growing and drying process ensures all of the enzymes remain intact, providing a rich concentration that will help your body make better use of flax's Omega-3s, lignans, fiber, proteins and vitamins.

Another important factor in maximizing our long-term health and well-being is maintaining our body's natural balance of

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intestinal microorganisms. Some of the causes of depleted beneficial microorganisms in our bodies are antibiotics, drugs such as steroids and synthetic hormones, caffeine and alcohol. Even chlorinated or fluoridated water can destroy friendly

NUTRICAN products contain millions of natural microorganisms that can be traced back to the soil the seed originally came from. Later, in the sprouting process, these microorganisms multiply to populate the free surface of the plant. These non-pathogenic, soil-based microorganisms are "friendly bacteria" or probiotics, meaning "for life". The probiotics in NUTRICAN products migrate with food to the intestinal tract and compensate for the missing bacteria in our digestive systems, fighting against "bad" bacteria such as Salmonella, E.coli and Shigella.

Flax is a small seed that can have a huge impact on your health. It is a nutritional powerhouse - a rich source of phytoestrogens, essential fatty acids, enzymes, protein, lignans, vitamins and minerals.

Flax protein is similar in composition to the protein found in soybeans. For individuals who want to reduce the amount of meat in their diet, Sprouted Flax is an excellent plant protein alternative.

Accumulated toxicity in the body is one of the causes of deficient immune systems, which has been cited as the reason we have such an increase in degenerative disease in the richest country in the world. Because flaxseed is very alkaline, it helps to prevent heartburn and should be included in all detoxification programs to restore the body's proper alkaline balance.(3)

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1 Position of the American Dietetic Association: Total Diet Approach to Communicating Food and Nutrition Information. (ADA Reports). January, 2002

2 SAUNDERS Terri L. Probiotics - Friendly Bacteria Essential To Health. Canada's Healthy Living. January, 2000

3 GURSCHE Siegfried. Fantastic Flax. Alive Books 1999

Lifestyle & Health

As a society we are overworked, overfed, overtired and overstressed. Is it any wonder our health, both physically and emotionally, is paying the ultimate price?

According to the American Dietetic Association, 60% of American women try to juggle work with families. With the need to spend less time preparing meals, there has been a virtual explosion of convenience foods, take-out, value-added (precut, pre-washed) and ready-made foods. Instead of "Mom in the kitchen preparing chicken with a broccoli / rice casserole and homemade bran muffins", parents are now more likely to be transferring take-out fried or rotisserie chicken onto a platter to be served with delicatessen salads and bakery breads.(1)

While it is easy for all of us to rationalize these dietetic choices, the results are quite literally killing us. The prevalence of obesity in the United States increased 57% from 1991 to 1999 according to CDC data from the Behavioral Risk Factor Surveillance System. Diabetes rose a startling 6% in the one year period from 1998 to 1999. According to the CDC, about \$98 billion was spent on health care associated with diabetes in 1997. It is estimated that 85% of those with diabetes are either overweight or obese. The increases in diabetes were in every category, including sex, age, race, education, weight and smoking status. **We are digging our graves with our forks.**

Every year, half a million Americans die of heart disease. Every year, more than a million undergo coronary bypass surgery or angioplasty to enlarge the opening in clogged arteries. A shocking 10.3 million new cases of cancer are diagnosed each year worldwide.

Motivated by mounting scientific evidence, national health organizations have retooled their dietary advice by putting fruits and vegetables front and center, where they belong.

Melanie Polk, AICR Director of Nutrition Education, states "We have reached an important milestone. Today, for the first time, those wishing to lower their risk for the world's three most pervasive and deadly diseases - heart disease, stroke and cancer - are hearing a single, clear message. The crux of that message is the

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tremendous disease-fighting potential of diets high in fruits and vegetables."

Expert reports indicate that diet changes alone may prevent 30 to 40 percent, or 3 to 4 million cases of cancer each year. In addition, a diet rich in fruits and vegetables offers the possibility of health benefits beyond that of a protective role against cancer. Large-scale adoption of a diet rich in fruits, vegetables and low-fat dairy products, combined with reduced intake of saturated and total fat is estimated to reduce coronary heart disease by approximately 15% and stroke by approximately 27%.⁽²⁾ A diet rich in fruits and vegetables may be a low-cost and practical means to delay cataracts,⁽³⁾ prevent asthma and bronchitis, particularly among children, and may provide an additional approach for the prevention and treatment of hypertension.

Research also identifies fiber, of which fruits and vegetables are a rich source, as potentially helping to control high serum cholesterol levels and protecting against diverticulosis. Folic acid found in most fruits and vegetables, particularly in green leafy vegetables and some citrus fruits, may have a protective role in heart disease and hypertension, as well as in cancer. The potassium found in a variety of vegetables and fruits may also help control hypertension.⁽⁵⁾

NUTRICAN Powdered Products are a quick and inexpensive way to supplement your family's diet. They are a balanced whole-food source of vitamins, minerals, protein, enzymes, fiber and essential fatty acids.

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1 Position of the American Dietetic Association: *Total Diet Approach to Communicating Food and Nutrition Information. (ADA Reports). January, 2002*

2 APPEL LJ, MOORE TJ, OBARZANEK E, VOLLMER WM, SVETKEY LP, SACKS FM, BRAY GA, VOGT TM, CUTLER JA, WINDHAUSER MM, LIN PH, KARNAJA N., for the DASH Collaborative Research Group. *A Clinical Trial of the Effects of Dietary Patterns On Blood Pressure. N Engl J Med. 1997, 136:1117-1124*

3 TAYLOR A, JACQUES PF, EPSTEIN EM, *Relations Among Aging, Antioxidant Status and Cataracts. AM J Clin Nutr.*

4 KLERK M, JANSEN MCJF, VAN'T VEER P, *Fruits and Vegetables in Chronic Disease Prevention. Wageningen, The Netherlands. Grafisch Bedrijf Ponsen and Looijen BV, 1998*

5 APPEL LJ, MOORE TJ, OBARZANEK E, VOLLMER WM, SVETKEY LP, SACKS FM, BRAY GA, VOGT TM, CUTLER JA, WINDHAUSER MMLIN PH, KARNAJA N., for the DASH Collaborative Research Group. *A Clinical Trial of the Effects of Dietary Patterns On Blood Pressure. N Engl J Med. 1997, 136:1117-1124*

Autoimmune Disorders

Autoimmune disorders develop when the immune system destroys normal body tissues. This is caused by a hypersensitivity reaction similar to allergies, where the immune system reacts to a substance that it normally would ignore. In allergies, the immune system reacts to an external substance that would normally be harmless.

Autoimmune disorders result in destruction of one or more types of body tissues, abnormal growth of an organ, or changes in organ function. The disorder may affect only one organ or tissue type or may affect multiple organs and tissues.

Organs and tissues commonly affected by autoimmune disorders include blood components such as red blood cells, blood vessels, connective tissues, endocrine glands such as the thyroid or pancreas, muscles, joints and skin. Examples of autoimmune (or autoimmune-related) disorders include rheumatoid arthritis, ankylosing spondylitis, multiple sclerosis, insulin dependant diabetes mellitus, psoriasis, Crohn's disease and lupus erythematosus. Five percent of our adult population is afflicted with one or more autoimmune disease and over two thirds of those afflicted are women.⁽¹⁾

Our body is designed to protect us. Only in the face of complete confusion will the immune system turn on the body. Good nutrition can play an important role in keeping our immune systems functioning. Phyto-nutrients (nutrients found in plants) offer powerful immune-enhancing properties. Sterols and sterolins, a combination of plant fats, are extremely effective in balancing the immune system.

Incorporating NUTRICAN Powdered Products into your daily diet may play an important role in the prevention and treatment of autoimmune disorders, inflammatory tissue conditions

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and allergies.

Flaxseed has proven useful in the nutritional management of patients with lupus nephritis, an inflammation of the kidney that occurs in people with synthetic lupus erythematosus. Studies show that flaxseed consumption blocks the formation of thromboxane [A.sub.2] and the pro-inflammatory cytokines, reduces kidney inflammation and improves kidney function. (2)

Ulcerative colitis, an inflammation of the colon resulting in chronic abdominal pain and bloody diarrhea, and the related disorder, Crohn's disease, which produces similar inflammation in the small intestine, are together known as inflammatory bowel disease (IBD). A diet rich in Omega-3 fatty acids reduced symptoms of a colitis-like condition in rats, according to new research. The findings suggest that a proper dietary balance of beneficial fats may be an effective component of therapy in similarly affected people.(3)

It is also becoming apparent that dietary polyunsaturated fatty acids (PUFAs) contribute to the inflammatory reactions involved in allergies. Omega-3 and Omega-6 fatty acids have profound effects on the balance between cell-mediated and antibody immune responses. Evidence suggests that supplementation of correctly balanced Omega-3 and Omega-6 fatty acids may help to relieve allergic symptoms.(4)

Healthy intestinal microflora enhances the activity of cell-mediated and tolerogenic immunity, thereby contributing to a balanced immune status. The intestinal microflora also contributes to the processing of food antigens in the gut. There is evidence of the reduction of allergic symptoms in older children and adults by dietary supplementation of beneficial intestinal microorganisms (probiotics) (5) It has become abundantly clear that maintaining our body's natural balance of intestinal microorganisms is one of the primary keys to maximizing our long-term health and well-being.

NUTRICAN Powdered Products are a rich, natural source of probiotics, in addition to an enhanced balance of Omega-3s and Omega-6s, fiber, vitamins, minerals and enzymes.

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1 VANDERHAEGE, Lorna. *Autoimmunity: When The Body Turns On Itself. Canada's Healthy Living (Article) February, 1999*

2 CLARK WF, PARBTANI A, HUFF MW, et al. *Flaxseed: A Potential Treatment For Lupus Nephritis. Kidney Int. 1995: 48:475-480*

3 PLUMMER, Nigel. *The Neonatal Immune System and Risk of Allergy: A Delicate Balancing Act, Positively Influenced by Probiotics and Fatty Acids. Townshend Letter for Doctors and Patients. February-March, 2002 p.1*

4 PLUMMER, Nigel. *The Neonatal Immune System and Risk of Allergy: A Delicate Balancing Act, Positively Influenced by Probiotics and Fatty Acids. Townshend Letter for Doctors and Patients. February-March, 2002 p.1*

5 PLUMMER, Nigel. *The Neonatal Immune System and Risk of Allergy: A Delicate Balancing Act, Positively Influenced by Probiotics and Fatty Acids. Townshend Letter for Doctors and Patients. February-March, 2002 p.5*

Cancer

A staggering 10.3 million new cases of cancer are diagnosed each year worldwide, making cancer a top public health priority. The right diet can be a powerful weapon against the development of this potentially deadly disease. Expert reports indicate that diet changes alone may prevent 30 to 40%, or 3 to 4 million cases a year.

Incorporating NUTRICAN Powdered Products into your daily diet may play an important role in the prevention and treatment of cancer.

Studies conducted by Dr. Stephen Cunnane of the University of Toronto showed that flax prevents the growth of new cancer cells. According to Dr. James Duke of the U.S. Department of Agriculture, flaxseed contains 27 identifiable cancer preventive compounds.

Recent studies show that Omega-3 oils found in flax (linolenic acid) may kill human cancer cells in tissue culture without harming the normal cells. Breast, lung and prostate cancer cell lines were studied.

Lignans are plant compounds called phytoestrogens that act like a weak form of estrogen in humans. It has been well established that populations with high fiber diets and high intakes of



phytoestrogens such as lignans, tend to have lower rates of hormone-dependant cancers, such as breast, endometrial and prostate cancers.(1)

Research evidence suggests that lignans may fight off chemicals responsible for initiating tumors and block estrogen receptors, which may reduce colon cancer risk. According to the research of Dr. Lillian Thompson of the University of Toronto, flaxseeds are the richest source of plant lignans and contain 75 to 800 times more than wheat bran, oats, millet, rye, legumes, soybeans and 66 other plant foods tested.(2)

At the December 2000 San Antonio Breast Cancer Symposium, Professors Lillian Thompson, from the University of Toronto, and Paul Goss, from Princess Margaret Hospital in Toronto, stated "for the first time, it has been shown that flaxseed has considerable potential in reducing tumor growth in humans with breast cancer comparable to the effects seen with preoperative Tamoxifen."(3)

There is an ongoing debate within the scientific community regarding flax and prostate cancer. While some studies have found flax to be beneficial in the treatment and prevention of this form of cancer, other studies have shown that flax may actually increase the size of prostate tumors. When faced with conflicting opinions, we would suggest you carefully consider all of the data prior to making a decision.

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1 ROSE DP, *Annu Publ Health* 14:1-7, 1993

2 VAISEY-GENSER Marion, Msc. RD, and MORRIS, Diane H., PhD (1997) - *Flaxseed: Health, Nutrition and Functionality*. Flax Council of Canada

3 REINHARDT-MARTIN Jane, *Flax Your Way To Better Health*. p.25 TSA Press 2001

Diabetes

There are two main types of diabetes. Type I most often appears during childhood or adolescence. Type II affects 90 to 95% of people with diabetes and most often appears after age 40. However, it is no longer considered an adult-only disease. It is now being found at younger ages and is even being diagnosed among children and teens.

Type II diabetes has been linked to obesity and physical inactivity.

Late onset adult diabetes II is suspected to originate partially from a deficiency of Omega-3s and an excess of saturated and trans-fats in the diet. A concurrent lack of vitamins and minerals makes the disease worse. Researchers predict that diabetes will continue to increase as an increasing portion of the population struggles with obesity. A recent study by the Centers for Disease Control and Prevention showed that the risk of diabetes increases by 4% for every excess pound of weight. Although this syndrome can take as long as 30 years to emerge as a full blown disease, reversal of symptoms can occur with positive changes in the diet and lifestyle.

For people with diabetes, a healthy diet is key to a healthy life. Incorporating New Road Farms Powdered Products into your daily diet may play an important role in the prevention and treatment of Type II diabetes.

It is important for individuals with both forms of diabetes to bring their blood sugar levels under control. Studies chronicled in the *British Journal of Nutrition* confirmed that the blood glucose levels of people in the study group who consumed flax daily for four weeks were reduced by 27%. Omega-3s may also lower the insulin requirement of diabetics.

Research shows that incorporating flax into your daily diet helps to manage blood sugar levels. However, because flax oil lacks the fiber found in flaxseed, it appears to have no effect on blood sugar.(1)

NUTRICAN Powdered Products are also an excellent source of plant-based protein. Selecting proteins that are low in fat is very important for individuals with diabetes.

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1 REINHARDT-MARTIN Jane, *Flax Your Way To Better Health*. p.44 TSA Press 2001

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Heart Disease

Heart disease is North America's number one killer. Obesity, inactivity and poor nutrition are major contributing factors to this epidemic. Technological developments over the last century, along with lifestyle changes have contributed to a shift in fat consumption. Our diets have evolved to contain higher levels of "bad fats", namely saturated fats and trans-fatty acids. A diet high in these fats has been linked to increased blood cholesterol and increased risk factor for heart disease.(1)

Incorporating NUTRICAN Powdered Products into your daily diet may play an important role in the prevention and treatment of high blood pressure, high cholesterol, heart disease and stroke.

Recent studies suggest that the Omega-3 fatty acids in flaxseed reduce risk factors for coronary heart disease by reducing serum triglycerides and blood pressure. They also appear to protect against stroke by regulating blood clotting and platelet aggregation.(2) The blood regulating capabilities of Omega-3s (linolenic acid) prevent spontaneous blood clots caused by an excess of fatty acids derived from refined polyunsaturated oils. This has implications for preventing strokes if used at an early enough stage in a remedial lifestyle change using both exercise and improved diet.

A study of more than 125,000 healthcare workers found that just one additional daily serving of fruit or vegetables lowered the risk of heart disease by 4%. The data supports a protective effect of greater consumption of fruits and vegetables, against risk of coronary heart disease.(3) Fruits and vegetables contain a multitude of compounds that have been linked with improved health, including fiber, potassium, folic acid and antioxidants, and have been shown to lower the risk of heart disease.

Flax, like any other seed, contains vitamins and minerals that are essential to good nutrition. However, it is important to note the increased amount of these important elements in flax, when compared with other food sources. Additionally, the overall increase of

vitamins and enzymes in the seed during the sprouting process make NUTRICAN Sprouted Flax an obvious choice in a "heart smart" diet.

Fiber also plays a role in reducing the risk of heart disease. Unfortunately, fiber is often a deficient component in our diets. Flax contains a unique mix of both soluble and insoluble fibers.

Soluble fiber forms a gel-like material that lowers cholesterol levels by blocking LDL cholesterol absorption. Insoluble fiber aids in bowel regularity by softening the stool, allowing it to pass through the colon more quickly. Because NUTRICAN Sprouted Flax has a 49% reduction in insoluble fiber over traditional milled flaxseed the body has more time to assimilate all of the health benefits found in flax. In addition, sprouting improved the ratio of soluble / insoluble fiber from 0.5 in seed to 0.8 in flax sprouts (Maxxam Analytical Laboratories, 2002).

Sprouted Flax Powdered Products contain high levels of antioxidants. Antioxidants help decrease the risk of heart attack and stroke. The antioxidants such as vitamin E and beta-carotene (a form of vitamin A) are thought to block the tendency of LDL cholesterol to stick to artery walls.

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1 EATON SB, et al. *N. Engl J Med* 312:283-289, 1985; LEAF A, et al. *Am J Clin Nutr* 45:1048-1053, 1987

2 ASCHERIO A et al. *Br. Med J* 313:84-90, 1996; SIMON JA, et al. *Stroke* 26:778-782, 1995

3 *Annals of Internal Medicine*, June 19, 2001. 134 11061114

Mood & Behaviour Disorders

Mood and behavioral disorders can cover a wide and varied range of illnesses - bi-polar disorder, schizophrenia, chronic depression, Alzheimer's disease, attention deficit disorder (ADD) and hyperactivity (ADHD) to name a few.

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Although further studies still need to be done, the benefit of Omega-3s in balancing the mood swings that occur in people with bipolar disorder and depression, among other mental conditions, looks promising. Study after study suggests the potential mood-stabilizing benefits of Omega-3 fatty acids.

Among about a dozen other mechanisms, one very important one occurs with prostaglandins and similar molecules called eicosanoids, which are mediators of inflammation in the body and important in neurotransmission and brain chemistry. Levels of these compounds have been shown to be abnormal in individuals with depression and other psychiatric disorders. Omega-3s have a significant effect on eicosanoid activity.(1)

In the first decade of the 20th century, the incidents of depression rose, and the age of onset went down. The exact cause of these changes is still unproven, but the increase in depression correlates well with the progressive depletion of Omega-3s in our diet throughout the 20th century.

Research indicates that in a diet with high levels of Omega-3s, membranes become very fluid. In a diet high in saturated fats, membranes become quite stiff. Studies show that even low doses of foods rich in Omega-3s cause membranes to become more fluid. Since receptors sit in the membrane and are proteins, the protein will change its shape and, therefore, its function depending on how fluid that membrane is.

This effect can be seen with serotonin and dopamine receptors (neurotransmitters in the brain), for instance, in that the binding is probably more normalized with a high consumption of Omega-3s. The dopamine and serotonin receptors implicated in both mood disorders and ADHD are composed of an Omega-3 fatty acid called DHA. If you don't have enough DHA in your blood, man-made trans-fat molecules may be used as a construction material instead. But trans-fats (hydrogenated oils) are shaped differently than DHA; they are straight while DHA is curved. The dopamine receptor becomes deformed and doesn't

work very well. Long term excess of trans-fats in the diet may very well result in problems like depression and difficulty concentrating. This problem can be most serious for a child whose brain is still developing.

ADHD is the most common behavioral disorder in children. It affects between 3% and 5% of school age youngsters. ADHD is more often diagnosed in boys than girls. ADHD children have problems paying attention, listening to instructions and completing tasks. They are also prone to fidgeting and squirming, hyperactivity, blurting out answers and interrupting others. Approximately 20 to 25% of children with ADHD show one or more specific learning disabilities in math, reading and spelling.

Studies indicate a link between blood levels of essential fats (particularly Omega-3s) and childhood learning and behavioral problems. One such study, carried out at Purdue University (April / May 1996 issue of Physiology and Behavior) specifically found that children with higher levels of behavioral, learning and health problems also had lower Omega-3 fat levels.(2)

Studies have also indicated that another cause of ADD and hyperactivity in children may be candida (yeast) overgrowth. This results in a perforation of the intestinal wall known as "leaky gut syndrome". Undigested food particles and harmful microbes enter the bloodstream, causing allergies, as the body attempts to rid itself of these foreign proteins. Many children with ADD have a history of overuse of antibiotics due to chronic colds and ear infections, reducing the body's good bacteria and severely depleting the immune system.(3)

Research led by University of Guelph professor Julie Conquer found that Alzheimer's sufferers, and other elderly patients with cognitive impairments, had lower blood levels of DHA, than people with normal cognitive functioning.

A growing body of evidence points to damage from free radicals as another cause of Alzheimer's disease. A study that appeared in the June 26, 2002 issue of The Journal of the American Medical Association concluded that antioxidant

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nutrients such as vitamin E, vitamin C and beta-carotene are among the body's natural defense mechanisms against the damage of free radicals.

Incorporating NUTRICAN

Powdered Products into your daily diet may play an important role in the prevention and treatment of several mood and behavioral disorders. They are a rich, natural source of Omega-3s, antioxidants, probiotics, enzymes, vitamins and minerals.

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1 PERRY Patrick. *Omega-3 for Bipolar Disorder: Restoring the Balance. Townshend Letter for Doctors and Patients. September, 2001*

2 REINHARDT-MARTIN Jane, *Flax Your Way To Better Health. p.47 TSA Press 2001*

3 SAUNDERS Terri L. *Probiotics: Friendly Bacteria Essential to Health. Canada's Healthy Living. January 2000*

Menopause

There are few topics these days getting as much attention as menopause and hormone replacement therapy (HRT).

Menopause is a mid-life transition that marks the end of fertility - a "pause" or stop of menstruation. Although enlightened thinking reminds us that this is a life change which should be embraced as another step in life's natural stages, some women's experiences during this time in their lives are less than positive.

Perimenopause starts on average six years "prior" to menopause (when you finish your last period) and ends one year after menopause. If you do the math, this represents a lot of years in a woman's life that can manifest some rather unpleasant symptoms; most notably hot flashes and irritability. Thankfully, the right diet can help you cope.

Since the 1960s, physicians have prescribed estrogen supplements to reduce hot flashes and other menopausal problems. However, as with most drugs, hormone replacement therapy is not without risk. There is an increased chance of developing estrogen-related cancers, increased risk

of stroke or heart attack, increased incidence of migraine headaches and effects such as facial hair, oily skin and voice-deepening.

Scientific research and observations indicate many women get as much relief from dietary means as they do from hormonal drugs. According to Jane Reinhardt-Martin, Registered Dietician and author of *Flax Your Way To Better Health* (TSA Press, 2002), as many as two thirds of menopausal women may benefit from a diet containing high levels of phytoestrogens.

According to Elaine Magee, M.P.H., R.D., a dietician in Walnut Creek, California, and author of *Eating Well for a Healthy Menopause* (John Wiley, 1996), phytoestrogens have been found to relieve menopausal symptoms such as hot flashes and vaginal dryness. However, if you have or have had estrogen-dependant cancer (like breast cancer), Magee says you should proceed cautiously before consuming phytoestrogen-rich foods in excessive amounts; consult your health-care practitioner.

Plant "estrogens" are unique in that they bind to estrogen-receptor binding sites in tissue (breast, ovarian, etc.), therefore preventing too much estrogen from binding to tissue, and helping to reduce excess levels of blood estrogen.

It has been suggested that the phytoestrogenic properties of lignans may help alleviate menopausal symptoms.

With the onset of menopause comes the increased risk of developing osteoporosis. Researchers from the University of Illinois and Oklahoma State University conducted a 12 week study of the effects of flaxseed on bone metabolism in post-menopausal women.

The women in the study were not using traditional HRT. They were divided into two groups. One group supplemented their diet with about 38g of flaxseed daily. The other group got the same amount of sunflower seed baked into bread and muffins. At the end of the clinical trial, bone formation and bone loss measurements were taken. The women who ate the flaxseed showed greater bone formation and less bone loss than the group who ate the sunflower seeds.



NUTRICAN Powdered Products contain phytoestrogens (plant estrogens), essential fatty acids and vitamins and minerals that may lessen the severity of menopausal symptoms. They also protect against osteoporosis and heart disease, two conditions whose incidence increases with menopause. The right diet may eliminate the need for hormone replacement therapy, or lessen HRT-related symptoms, such as bloating, nausea and weight gain.

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Weight Management

If there's one thing that experts can agree on, it's that diets without proper nutrition and exercise don't work. And the statistics are proving it. One in every two Americans is over-weight, and one in every three obese. In the United Kingdom, 40% of adults are overweight, 18% are considered obese.

Subjecting yourself to the dieting merry-go-round not only slows down your metabolism, making it more and more difficult to shed those unwanted pounds, but can also be psychologically devastating.

Good nutrition and exercise are the keys to a healthy lifestyle. Being overweight is not just about how you look, it's about the impact those extra pounds are having on your body. You are more susceptible to heart disease, diabetes, high cholesterol, high blood pressure, stroke, cancers, gall bladder disease, immune dysfunction, gallstones, respiratory problems, infertility, menstrual irregularities, complications of pregnancy, osteoarthritis and psychological complications.

Incorporating NUTRICAN Powdered products into your well-balanced eating program may play an important role in your journey to a healthier body weight.

Essential fatty acids (EFAs) are dietary fats that differ from other fats in that they are required in the human diet, because the body cannot manufacture them from any other substance. Fatty acids are required for maintaining the structure of cell membranes and permeability of the skin, they are the raw ingredients in the structure of the eyes, ears, brain, adrenals and sex glands and are required for proper infant growth and development.

Without an adequate supply of EFAs, our fat-burning potential stops. These fatty acids work together to increase the overall amount of oxygen utilized by the cells to produce energy. The more oxygen we transport to our cells, the faster we burn body fat. EFAs increase the body's metabolic rate and insulin efficiency.(1) Unwanted fat stores can be greatly reduced by making EFAs our main dietary source of fat.

The North American diet has shown a dramatic decrease in the consumption of Omega-3 fatty acids, while the consumption of Omega-6s have increased. Researchers believe that too much of one EFA can interfere with the action of the other, reducing the beneficial effects of both.(2) Flax has a much better ratio of Omega-3s to Omega-6s, improving the efficiency with which your body can use both.

NUTRICAN Powdered Products are an excellent source of essential fatty acids, and the ratio of Omega-3 to Omega-6 is even better due to the sprouting process (Maxxam Analytical Laboratories, 2002). Because of the remarkable increase in enzymes, NUTRICAN products are much more bio-available, meaning all of the nutritional benefits are digested and absorbed more efficiently.

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1 KING, Brad J. *Fat Wars: 45 Days To Transform Your Body.* MacMillan Canada 2002 p. 88

2 REINHARDT-MARTIN Jane, *Flax Your Way To Better Health.* p.25 TSA Press 2001

