Recovery!
Westwind eating disorder recovery centre
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Vegetarianism and Your Health

For centuries, people have practiced vegetarianism for religious and ethical reasons. Some studies have found that a well planned vegetarian diet can reduce the risk of death caused by chronic diseases such as cancer, heart disease and diabetes. There are many different types of vegetarians. **Vegans** are strict vegetarians who only eat plant foods whereas **lacto-vegetarians** include both dairy products and plant foods in their diet. **Lacto-ovo-vegetarians** include dairy products, plant foods and eggs in their diet.

Research has shown that vegetarians often adopt healthier lifestyles than those who eat meat. For instance, vegetarians generally do not smoke, drink alcohol in moderation and tend to be more physically active than other people.

Nutrients and Vegetarian Diets

Well planned vegetarian diets can be safe for infants, children, adolescents and adults. A person who chooses to lead a vegetarian lifestyle needs to ensure that he or she is obtaining nutrients which may be limited in a vegetarian diet such as calcium, riboflavin,

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Greetings!!

When a person with an eating disorder claims to be a vegetarian, it is often addressed as a symptom of the disorder, rather than a legitimate ethical choice that person has made. We have heard of many treatment programs where vegetarianism was not allowed unless it was for religious reasons. This policy might well be considered discriminatory if applied on a medical unit in a hospital, but not so when applied to someone suffering from anorexia.

Certainly, there is some merit to that argument, and much of what many people present does reflect their food fears rather than a legitimate conscious choice to stop killing and consuming animals as food. Nevertheless, there are many people who make that choice, and it is impossible to determine who does and who does not have food fears determining their choice. The presence of an eating disorder does not disqualify one from making lifestyle choices such as becoming vegetarian. A gentler approach is to accept the individual's choice, and work with her to help her eat in a healthy manner while still respecting her personal lifestyle choice. This both validates the individual as having an opinion worthy of merit, and avoids unnecessary clashes over food choices during treatment.

With this in mind, we have presented some information as our cover story this issue.

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Food and the Media

The International Food Information Council Foundation issued a new report that has totalled the number of media reports on food for 1999 and compared this with 1997 and 1995.

While fat intake was the number one topic in 1995, garnering 18% of stories, it dropped to second place (10%) in 1997 and fourth (6%) in 1999. Disease prevention was the number one topic in 1999 with 13% of stories. For the first time, stories on benefits of foods outnumbered those listing harm from them. The only category where that was different was on biotechnology.

This newsletter is a publication of the Westwind eating disorder recovery centre, and is intended for general information only. It is not intended to provide personal medical or psychological advice, which should be obtained from a qualified health professional.

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iron and vitamins B12 and D. Deficiencies in these nutrients may occur if the vegetarian diet is not well planned. Why do we need these nutrients? What can happen if a deficiency develops in one or more of these nutrients?

Staying Healthy With Vegetables

Calcium and Vitamin D - During childhood and adolescence calcium is need for bone development. Later in life calcium is needed to help preserve bone mass and lower the risk of fractures (The Osteoporosis Society, 1997). Vitamin D aids in calcium absorption and helps maintain a balance between calcium levels in the bone and calcium levels in the blood. Deficiencies in these nutrients can cause a number of bone diseases, such as osteoporosis or osteomalacia both of which weaken bones and increase the risk of fractures. For vegetarians, good sources of vitamin D are fortified milk, some fortified breakfast cereals and fortified margarine. Vitamin D can also be obtained from 10-15 minutes of exposure to the sun. Good sources of calcium include dairy products (for lacto-vegetarians and lacto-ovo-vegetarians), fortified soy milk (alternative for vegans), tofu, almonds, dry beans, leafy vegetables, some fortified cereals, flour and certain brands of fortified orange juice.

Riboflavin - Riboflavin is a B vitamin and is necessary for the metabolism of carbohydrate, protein and fat in the body. This vitamin also supports antioxidant protection in the body. Antioxidants help protect healthy cells from oxidative damaged. A riboflavin deficiency can cause inflammation of the skin, tongue and mouth, as well as, eye disorders. Good dietary sources of riboflavin are whole and enriched grains, leafy vegetables, mushrooms, beans, seeds and nuts.

Iron - Iron forms part of hemoglobin in red blood cells. **Hemoglobin** is a iron-protein compound which carries oxygen from the lungs to cells of the body and then carries carbon dioxide away from cells to the lungs. Iron is also needed in order for the immune system to function properly. A diet low in iron can lead to iron deficiency anemia. **Iron deficiency anemia** occurs when there is not enough iron for hemoglobin synthesis and therefore there is a reduction in red blood cells being produced. As a result there is a decreased amount of oxygen being transported to the cells. Good sources of iron include whole grains, prune juice, dried fruits, beans, nuts, seeds and leafy vegetables. Iron absorption can be enhanced if foods rich in vitamin C are consumed along with iron rich food products.

Vitamin B12 - Vitamin B12 has many functions. For instance, vitamin B12 is essential for folate metabolism. In the absence of vitamin B12, a secondary folate deficiency can occur. Without folate, cells can not divide properly and as a result the cells can not carry oxygen to the tissues of the body. A B12 deficiency can also lead to pernicious anemia which can cause weakness, red painful tongue, weight loss, indigestion, diarrhea, paresthesia in extremities (abnormal, spontaneous prickling and numbness in extremities), irreparable nerve damage and eventually paralysis. Vitamin B12 can only be found in animal products and therefore this vitamin is particularly important for vegans. After animal products are removed from a person's diet it can take up to four years to deplete the body's vitamin B12 stores.

However, considering the seriousness of the effects of a deficiency, it is important for a vegetarian to ensure adequate intake of this vitamin from products such as fortified breakfast cereal and fortified soy milk.

The Importance of Protein in the Vegetarian Diet

It is essential that vegetarians consume an adequate amount of protein to make up for the absence of meat in their diet. Protein plays an important role in cell growth and repair, vision, blood clotting and the production of hormones. A vegetarian can obtain protein from legumes, grains, nuts and seeds. Dairy products are also a good source of protein for lacto-vegetarians.

Protein is composed of long strands of elements called **amino acids**. **Nonessential amino acids** are those that our body is able to produce. There are nine **essential amino acids** which must be provided in the diet. Animal proteins, from foods such as dairy and meat products, contain all nine essential amino acids. Plant proteins generally lack one or more of the essential amino acids. Thus, plant proteins are often referred to as **incomplete proteins**. These proteins can be made **complete** by combining foods with different amino acid spectrums. For instance, grains and legumes can be combined to form a complete protein because the essential amino acids which grains are low in can be found in high concentrations in legumes.

The Smart Vegetarian Shopper

Today, there is a wide variety of vegetarian products available to shoppers in the local grocery store. **Textured vegetable protein** products are more popular than ever. These products contain soy protein and are processed to look and taste like meat, fish or poultry. Some examples of these products are veggie hot dogs, hamburgers and pepperoni. A smart vegetarian shopper should not rely on these products alone to be a substitute for animal products. Reading labels checking for vitamin B12, iron and zinc content, and using other plant food combinations are still good ideas to ensure nutrient intake will be sufficient.

How To Figure Out Your Recommended Nutrient Intake (RNI) Of Protein

1) Find your body weight.

2) Convert pounds to kilograms (pounds divided by 2.2 lb/kg equals kilograms).

3) Multiply by 0.9 g/Kg to get your RNI in grams per day.

For Example:

1) Weight = 110 lb
2) 110 divided by 2.2 lb/kg = 50 kg
3) 50 kg X 0.9 g/kg = 40 g of protein/ day

Adapted from: Sizer, F. & Whitney, E. (1994,) *Nutrition Concepts and Controversies*. St. Paul, MN: West Publishing Co.,

What's on the Web

The Vegetarian Resource Group (VRG) is a non-profit organization dedicated to promoting vegetarianism and related issues. Their site is at http://www.vrg.org

The American Dietetic Association also has some information on vegtarianism at http://www.eatright.org/adap1197.html

Excellent Combinations Used To Form Complete Proteins

Combinations	Examples
Grains and Legumes	rice/beans, pea soup/toast, lentil curry/rice
Grains and Dairy	pasta/cheese, rice pudding, cheese & bun
Legumes and Seeds	garbanzo beans/ sesame seeds as dip (tahini), or soup

Adapted From: Mahan, L.K. & Escott-Stump, S. (Eds.) (2000). *Krause's Food, Nutrition, and Diet Therapy.* Philadelphia, PA: W.B Saunders Company.

Nutrition Tip:

Soy; the new wonder-food of the millenium! Foods made from soybeans are a rich source of phytochemicals. Phytochemicals protect plants from infection and stresses of the weather. Recently, researchers have found that not only do the phytochemicals in soybeans protect plants but they also may help maintain better health and prevent certain diseases in humans.

Soybeans differ from other beans because they are the only vegetable food that contains a complete protein. In other words these beans contain all nine essential amino acids which must be provided in our diet. Another advantage that soybeans have is that they contain both insoluble and soluble fiber. While soybeans are the only beans that contain some fat, the fat is mostly unsaturated and may help to lower blood cholesterol levels.

An easy way to add soy to your diet is to try the latest meat replacement products or soy beverages. You might be surprised to taste and see how good they really are!

Adapted From: Josephson, R. (1997). *The Heart Smart Shopper*: *Nutrition on the Run*. Vancouver, BC: Douglas & McIntyre

The Relationship Between Eating Disorders and Mood

Many studies have found that individuals with eating disorders suffer from depression, increased irritability and stress. These mood disturbances are often the result of one or more nutritional deficiencies.

Why Do Nutritional Deficiencies Cause Mood Disturbances?

Lipids, amino acids, vitamins and minerals are needed in order for the brain to function properly. For instance, some dietary fats are use by the brain as structural components of brain cells. The brain also needs amino acids, vitamins and minerals in order to form and transmit messenger molecules called **neurotransmitters** .

Neurotransmitters act as chemical messages in the body that are released at the end of one nerve cell and diffuse across a small gap to a different nerve cell to generate a nerve impulse. This is how messages travel throughout the body's nervous system. Changes in the levels of neurotransmitters can affect brain chemistry which as a result has many effects on mood, appetite, sensitivity to pain, mental alertness, stress, emotional response, fatigue and sleepiness. Diet is one factor that can have a significant effect on these neurotransmitters, which in turn can also affect our cravings and food choices. Much research has focused on the effects of various vitamin, minerals and amino acids on neurotransmitter functioning.

Amino Acids And Food Choices

Tryptophan is an essential amino acid, which means that it can not be synthesized in the body and as a result must be provided in the diet. Tryptophan has an effect on a person's mood and cravings for food because it is converted in the body to the neurotransmitter serotonin. Higher serotonin levels, in turn, decrease the desire for carbohydrates.

The amount of tryptophan which enters the brain is partially dependent on the amount of carbohydrate and protein in the diet. A high carbohydrate diet increases the absorption of tryptophan into the brain, thus increasing the production of serotonin. A high protein intake will decrease the amount of tryptophan entering the brain because the other amino acids from the protein in the meal compete with tryptophan for entrance across the blood brain barrier. Thus the consequences on appetite are as follows: eating carbohydrates will cause an increase in serotonin production, decreasing the urge to eat further carbohydrate foods. A high protein, low carbohydrate diet will result in a relatively low serotonin level and cause a person to crave carbohydrates.

Tyrosine, another amino acid, may also have a role in directing food choices. Research is not conclusive, but does suggest a high protein diet (thus high in tyrosine)

increases the production of a group of neurotransmitters called catecholamines: epinephrine, dopamine and norepinephrine. Norepinephrine is suspected of stimulating the appetite for carbohydrate at the next meal.

The research in general seems to indicate that it is not just a psychological craving, but in fact there is a physiological mechanism for those cravings as a way of our body communicating to us what it needs.

Tryptophan and Mood

Tryptophan seems to have the effect of reducing anxiety and tension, and promoting a sense of peacefulness. Another effect is to induce fatigue or sleepiness.

Other studies have found that when subjects were placed on a low tryptophan diet they were more likely to be depressed. However, when tryptophan was added back into their diets their depression lessened. Again, this is likely due to the fact that the tryptophan added back into the diet was converted into serotonin, which in turn, alleviated the depression.

Vitamin, Minerals And Mood

Deficiencies in **B vitamins** such as **thiamine, riboflavin, niacin, vitamin B6, folate, B12** often have similar deficiency symptoms. Most B vitamins deficiencies cause depression, irritability or both. Why? Vitamins such as vitamin B6 and riboflavin are involved in the later steps of neurotransmitters synthesis. Great dietary sources of B vitamins include breads and cereals made from enriched grains. Other sources are dairy and meat products, as well as fruits and vegetables.

Iron is also needed for neurotransmitter synthesis. In fact, iron is involved in one of the first steps of neurotransmitter synthesis. Fatigue or depressed mood may be among the first symptoms of a developing iron deficiency. The most bioavailable form of iron is found in meat. This means that more iron is absorbed and made available to the body when it comes from a meat source. Other good sources of iron include dried beans and vegetables. Dairy products tend to be a very poor source of iron.

> Without food, the level of neurotransmitters in the brain is altered...

Similarly, deficiencies in protein, energy intake, vitamin A, magnesium, copper and zinc are related to irritability, depression, lethargy and apathy.

People suffering from eating disorders often experience mood changes which can be the simple result of basic nutrient deficiencies. In order for our bodies to function properly we need to nourish them adequately. Without food, the level of neurotransmitters in the brain is altered, and mood disturbances can result. Many girls are surprised to see how much better they feel, think and are able to function, once they actually allow themselves to start eating a reasonable amount of nutritious food. Not all mood disturbances go away with eating, but it can be a powerful first step of learning to cope with negative emotions in the process of recovery.

References

Sizer,F. & Whitney, E. (1994,) *Nutrition Concepts and Controversies*, St. Paul, MN: West Publishing Co.,

St. John's Wort Warning

Three reports in the February 11, 2000 issue of the Lancet describe interactions between St. John's wort and prescription medications. One study showed that St. John's wort decreased the blood levels of a drug used to treat HIV infections; the second report described rejections of two heart transplants because the supplement decreased levels of the medicine used to suppress the immune system; and the third was a summary of seven cases of people taking the blood thinner, warfarin.

It appears that St. John's wort activates an enzyme in the liver which metabolizes many drugs. This, in turn, decreases their blood levels. One of the largest pharmacy chains in the U.S. has started asking its customers about herbal supplement use, in addition to prescription drug use, to avoid serious interactions. The Swedish government just began requiring labeling on the supplement not to take it with any prescription medications.

Although St. John's wort may be safe in otherwise healthy people, there are so many drugs being used it is impossible to predict which may be affected by this supplement. Self-diagnosis and medication can lead to serious problems in people being treated for other conditions. The U.S. Food and Drug Administration (FDA) issued a warning letter to health-care providers on February 10 warning about combining St. John's wort with other medications, including oral contraceptives.

adapted from *Nutrition News Focus*, Feb 17/00 (newsletter)

Iron Absorption

Some tips on increasing iron absorption are to:

- consume a vitamin C- containing food (i.e. orange juice, tomatoes, potatoes) with the dietary source of iron to enhance iron absorption.
- cook in iron pots- some of the iron from the pots will be incorporated into the food you are cooking.
- avoid drinking black or green tea with your meal- natural occurring ingredients such as tannins can inhibit iron absorption. It may be better to drink tea in between meals to minimize this negative effect.