

THE WELLNESS COMMUNITY
NUTRITION HANDBOOK

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TABLE OF CONTENTS

Introduction	2
Nutrition and Cancer - Guidelines	3
The Three Different Stages in a Cycle of Nutrition and Cancer	4
Nutrition During Treatment	5
Specific Chemotherapy Agents and Nutrition	6
Radiation Treatment and Nutrition	8
Other Nutritional Ideas	9
Some Important Reminders	10
Herbs and Surgery Warnings	10
Natural Energy Drinks	11
Immuno-Soup	12
Suggestions for Handling Problems During Treatment for Cancer; chewing and swallowing; diarrhea; nausea and/or vomiting; loss of appetite	13
Suggestions for Eating to Provide Maximum Immunity	15
Dietary Fat/Omega-3 Fatty acids and Cancer	17
Fat Content of Various Foods	18
Digestive Enzymes Explained	19
Resource Addresses	20

INTRODUCTION FROM CAROLYN KATZIN, MSPH, CNS
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I have had the privilege of counseling participants at The Wellness Community, Westside since 1986, when we were in the little yellow house in Santa Monica. In the following pages I will share with you some of the things I have learned. It would be impossible to write it all down. An earlier version of this handbook is available as the supplement to ***The Wellness Community Guide to Fighting for Recovery from Cancer*** by Harold Benjamin, the founder of TWC. If you have any comments or suggestions I would love to hear from you as I am continually updating the book as new information becomes available. My educational background began with an advanced diploma in home economics followed by a Bachelor of Science degree in nutrition and physiology from London University in my native Britain. I came to California in 1984 to study for my doctorate at UCLA in the field of nutritional science. In 1985, I interned in a holistically oriented medical practice and met Louise Munch who was a participant of The Wellness Community. Soon afterwards I graduated from UCLA's School of Public Health with a Master's degree of science having decided that working with people was more satisfying than pure research. However, I still maintain an active interest in nutritional research. As a volunteer with the American Cancer Society, I serve on the National Nutrition & Physical Activity group and I Chair the California Division's Nutrition and Physical Activity Initiative Team. In addition, I serve as Chair of the Dean's Advisory Board of UCLA's School of Public Health and consult in the medical center as part of UCLA's Executive Physical Program. I have a private nutrition practice in Brentwood and consult to the food and supplement industry. I also enjoy speaking to both professional and public groups about nutrition and its relationship to health. This is just a preview of "the Cancer Nutrition Center Handbook" available from my website at www.cancernutrition.com. Be well!

NUTRITION AND CANCER - GUIDELINES

The National Cancer Institute estimates at least 35% of all cancers are linked to diet. For women, this is as high as ONE HALF of all cancers. Good nutrition is vital for a healthy immune system, which protects us from, and provides resistance to cancer. Here is a summary of American Cancer Society's guidelines for individual choices.

- 1. Eat a variety of healthful foods, with an emphasis on plant sources.**
 - eat five or more servings of a variety of vegetables and fruits each day.
 - choose whole grains in preference to processed (refined) grains and sugars.
 - limit consumption of red meats, especially those high in fat and processed.
 - choose foods that help maintain a healthful weight.

- 2. Adopt a physically active lifestyle.**
 - Adults: engage in at least moderate activity for 30 minutes or more on 5 or more days of the week; 45 minutes or more of moderate to vigorous activity on 5 or more days per week may further enhance reductions in the risk of colon cancer.
 - Children and adolescents: engage in at least 60 minutes per day of moderate to vigorous physical activity at least 5 days per week.

- 3. Maintain a healthful weight throughout life.**
 - balance caloric intake with physical activity.
 - lose weight if currently overweight or obese.

- 4. If you drink alcoholic beverages, limit consumption.**

THE THREE STAGES OF CHANGE IN A CYCLE OF NUTRITION AND CANCER

1. Preventive Nutrition (when you are well)

- ** High in unrefined carbohydrates such as beans, pasta, whole grain breads and root vegetables. Low in simple sugars.
- ** Reasonable in protein, i.e. 3-4 oz servings (about the size of a deck of cards) of fish, lean meat, poultry or larger 6-8 oz servings (1 cup) of mixed beans and rice at lunch and dinner.
- ** Oils and fats from olives, tree nuts (almonds, walnuts, etc.), avocado, oily fish in preference to fatty meats, cheese or other saturated animal fat food sources.
- ** Plenty of antioxidants and botanical factors found in whole grains, beans, vegetables and many fruits, e.g. beta carotene, vitamins C and E. Dark colored items are richest.
- ** Moderate quantities overall - eat to maintain steady weight.
- ** Wide variety of foods, especially seasonal fruits and vegetables. At least 5 servings each day - more is better.

2. During Treatment (Expedient Diet)

- ** Sufficient small, frequent meals to maintain body weight.
- ** A little more protein, e.g. more egg whites, fish and poultry.
- ** Choose lactose free dairy products to avoid possible lactose intolerance resulting from the treatment.
- ** Avoid gas-producing foods such as incompletely cooked beans, excessive amounts of the cabbage family, melons. Use "Beano" or other digestive enzymes with these foods.
- ** Avoid highly spiced foods, unless they agree with you.
- *** Avoid more than RDA levels of antioxidant supplements.

3. Regenerating Nutrition (as you Recover)

- ** As for **Prevention** but with special focus on the foods rich in nutrients needed for regenerating the immune system, e.g. vitamins B complex, C, E, selenium and zinc. Some of these are found in wheat germ - add 1-2 tablespoons to morning cereal.
- ** 8 - 10 servings of fruits and vegetables each day, especially those rich in beneficial phytonutrients such as blueberries, dark green leafy vegetables and garlic.
- ** Include a daily multivitamin and mineral supplement.

NUTRITION DURING TREATMENT

If you have been diagnosed with cancer, nutrition is one of the most important things for you to consider as part of your whole treatment regimen. Eating a healthy diet can make a big difference in the success of your treatment. A simple rule of thumb is to **maintain a steady body weight** throughout treatment as much as possible. This means neither gaining too much, nor losing too much weight (fluctuations of more than, say, 5lbs per week for an average sized adult). Balance your intake with physical activity to your own individual capacity.

Before Treatment:

- Surgery** Eat a low fat (less than 25% calories), high protein (8-10oz lean meat, fish, chicken or turkey) diet the day before surgery. Supplement with a broad spectrum multi-vitamin and mineral with 100% RDA. Additionally, 500 mg vitamin C with bioflavonoids every 8 hours may be beneficial to healing. Stop supplements of vitamin E, vitamin K, evening primrose, borage or fish oils supplements one week before surgery as these can cause thinning of the blood. See page 10 for more herbs to avoid prior to surgery.
- Radiation** No special diet.
- Chemo** Eat low fat, high carbohydrate diet the day before chemotherapy. No supplements on day of treatment.

During Treatment:

- Surgery** As per surgeon's protocol.
- Radiation** Extra carbohydrate calories for energy
- Chemo** Avoid eating your favorite foods within 24 hrs of treatment to avoid negative associations with them at a later time. Eat a low fat (less than 3 tablespoons or 40 grams fat/oil per day), high carbohydrate (mainly complex carbohydrate (starch) from grains, fruits and vegetables) diet with small quantities of good quality protein. White meat chicken, fish and eggs are easy to digest. Protein powder based smoothies are also good. Avoid more than RDA amounts of antioxidant supplements.

After Treatment:

- Surgery** High protein diet (8-10 oz lean meat, poultry, fish or 2-3 eggs) Regular supplements as above. Antioxidant supplement including 400 IU vitamin E and 1,000 mg vitamin C per day.
- Radiation** High protein and energy diet. Lactose-free and relatively low in simple sugars (sucrose, honey) to avoid intestinal discomfort.
- Chemo** Small, frequent meals of easy to digest foods such as fish, chicken, rice, baked potato, banana, apple sauce. Stimulate appetite with ginger ale. If weight drops rapidly add a smoothie (see recipes on page 11) and/or meal replacement type products. Avoid lactose as above.

NUTRITION AND CHEMOTHERAPY

General

Drink plenty of fluids - at least two liters total with most of it coming from clear liquids such as water, apple juice, clear broths or jello. Avoid caffeine containing liquids such as tea, coffee and colas as these are dehydrating.

Eat small quantities of food rather than large meals for easier digestion.

Eat crackers, Melba toast, pasta and baked potato if you feel nauseous.

Use the concept of the “**Expedient Diet**” and make up for eating less healthily, if needed, when you have more strength.

Eat avocado often as it is an excellent source of calories, essential fatty acids, potassium and glutathione, unless contraindicated (if on Procarbazine or other medication requiring a low tyramine diet)

Some Drug-Specific Nutritional Advice

Asparaginase, <i>Elspar</i>	Drink extra fluids. Consume extra calories.
Bleomycin, <i>Blenoxane</i>	Bland foods.
Busulfan, <i>Myleran</i>	Drink extra fluids. Eat foods rich in B vitamins.
Carmustine, <i>BICNU</i>	Bland foods, avocado.
Chlorambucil, <i>Leukeran</i>	Drink extra fluids. Bland foods, avocado.
Cisplatin and carboplatin	Avoid purine rich foods (liver, caviar, sardines, anchovies). Eat plenty of magnesium, potassium and zinc rich foods (whole grains and nuts). Drink extra fluids.
Cladribine, <i>2-CdA, Leustatin</i>	No special diet.
Cyclophosphamide, <i>Cytoxan</i>	Drink extra fluids. Don't cut back on salt or sodium containing foods. Avoid alcohol. Eat bland and low fat foods.
Cytarabine, <i>Ara-C, Cytosar-U</i>	Drink extra fluids. Bland foods, avocado.
Dacarbazine, <i>DITC-Dome</i>	Drink extra fluids. Bland foods, avocado.
Daunorubicin, <i>Cerubine</i>	Drink extra fluids. Eat foods rich in B vitamins, particularly riboflavin (milk, lean meat, egg yolks, wheat germ).
Doxorubicin, <i>Adriamycin</i>	Drink extra fluids. Eat foods rich in B vitamins particularly riboflavin (see above).
Etoposide, <i>VePesid, VP-16</i>	Bland foods, avocado.
5-Fluorouracil, <i>Adrucil</i>	Drink extra fluids. Eat foods rich in B vitamins.
Fludarabine, <i>Fludara-IV</i>	Drink extra fluids.
Hydroxyurea, <i>Hydrea</i>	Drink extra fluids.
Idarubicin, <i>Idamycin</i>	Drink extra fluids.
Ifosfamide, <i>Ifex</i>	Drink extra fluids.
Lomustine, <i>CeeNU</i>	Bland foods, avocado.
Mechlorethamine, <i>Mustargen</i>	Drink extra fluids. Restrict simple sugars.
Melphalan, <i>Alkeran</i>	Drink extra fluids.
Mercaptopurine, <i>Purinethol</i>	Drink extra fluids, avoid alcohol. Avoid foods rich in purines (anchovies, kidneys, liver, meat extracts, sardines, beans and lentils). Eat foods rich in B vitamins like wheat germ.
Methotrexate, <i>Mexate</i>	Drink extra fluids, avoid alcohol, bland diet. Eat foods that

	produce an alkaline urine to assist excretion (almonds, milk, fruits and vegetables except cranberries, plums, corn and lentils).
Mitomycin, <i>Mutamycin</i>	Drink extra fluids, bland diet, avocado. Eat foods rich in folate (green, leafy vegetables, citrus fruits) and foods rich in calcium (dairy foods, broccoli).
Mitoxantrone, <i>Novantrone</i>	Drink extra fluids (discolored urine)
Pentostatin, <i>Nipent</i>	Bland foods, avocado.
Procarbazine, <i>Matulane</i>	Avoid tyramine containing foods (aged cheeses, yogurt, raisins, eggplant, canned figs, salami, sour cream, avocados, bananas, soy sauce, lima beans, tenderized meats, etc. - ask for a list from doctor). Maintain tyramine free diet for 14 days after treatment ceases. No alcohol.
Tamoxifen, <i>Nolvadex</i>	Avoid high fat foods. Exercise regularly to minimize possible weight gain side effect. Eat foods rich in calcium and magnesium (dairy foods, broccoli, nuts and seeds).
Taxol	Drink extra fluids.
6-Thioguanine, <i>Tabloid</i>	High fiber diet.
Vinblastine, <i>Velban</i>	Drink extra fluids.
Vincristine, <i>Oncovin</i>	Drink extra fluids, bland diet, avocado.
New Anti-Cancer Agents	
Interferon- recombinant	
<i>Intron, Roferon</i>	Drink extra fluids, bland diet, avocado.
Other cytokines	Eat plenty of protein.
Drugs used with Chemotherapy	
Dexamethasone, <i>Decadron</i>	Low salt, high potassium diet (avocado, bananas, citrus fruits, most vegetables). Adequate chromium in diet (whole grains, brewer's yeast)
Prednisone, <i>Deltasone</i> ,	Low sugar diet. No alcohol.
<i>Meticorten, Orasen</i>	Low salt, high potassium diet. No alcohol.
	Adequate chromium in diet (see above).
Mesna, <i>Mesnex</i>	Plenty of fluids.

If your oncologist is using combinations of the above medications modify the advice so that you retain the most important parts, e.g. Remember to speak with him about nutrition. Ask for a dietary consult with a Registered Dietitian or Certified Nutrition Specialist.

Here is an example of dietary advice for a combination regimen:

CMF___ Avoid fatty foods. Eat small quantities of bland flavors. Avoid alcohol, highly spiced foods or very acidic foods (cranberries, pineapple, lemons, etc.). Focus on vegetables, lean meats moistened in liquids, e.g. as stews or in soups, and on whole grain cereals.

Many chemotherapy regimens affect your blood cell count. If not contraindicated, a hematinic (blood building) supplement may be recommended. Check with your oncologist.

RADIATION TREATMENT AND NUTRITION

Radiation may affect your taste buds so that food may taste bitter or you may have a metallic taste in your mouth. Try marinating meats for better flavor. Cold foods may be more palatable than hot. Use herbs such as thyme, tarragon, mint, basil for added flavor. Try adding sauces such as apple sauce, yoghurt dressings, salad dressings to make food more easy to chew. Snack on whey or soy protein powder milk shakes. *Ensure* or other canned elemental diets are also useful standby's - look for the newer versions suitable for radiation enteritis or other chronic diarrhea situations, e.g. *Boost* or *Resolve*. For maximum effects radiation treatment should not be combined with high dose supplements of anti-oxidants (beta carotene, vitamins C and E or glutathione). The amounts found in a normal mixed diet will not interfere with treatment.

To counteract gastrointestinal problems, take additional B complex vitamins as 9 tablets of brewer's yeast per day, or in a supplement. 4 fl oz of Aloe Vera juice can also be a soothing drink. Avoid milk and milk products as lactose intolerance may develop. Yogurt made from a live culture may be tolerated well. Use lactose free milk or whey products to minimize discomfort with dairy products. *Ensure* and similar meal replacement drinks are lactose free.

OTHER NUTRITIONAL IDEAS

Garlic Allicin (allythio sulfinic allyl ester) is a weak anti-cancer agent found in garlic. Recognized as early as 1550 BC as a treatment for cancer.

Pycnogenol This powerful antioxidant is found in grape seeds and from an extract of pine trees. Anyone with alcohol related liver damage should not take this or megadoses of beta carotene for the same reasons.

Milk Thistle (Silymarin) This herb may assist in detoxification and general support of the liver detoxification enzyme systems. Useful after chemotherapy.

Coenzyme Q10 This is another antioxidant that can be beneficial during treatment. Take 50-150 mg per day, or as directed by your nutrition professional.

Green Papaya, Pineapple Many tropical fruits contain natural enzymes that may be beneficial during treatment and preventively.

Green Tea contains protective botanical factors. Drink some daily.

Some Important Reminders

1. Do not take any additional antioxidants for one day before and at least two days after any treatment. This will optimize your treatment and enhance the detoxification process.
2. Eat small amounts of food frequently (every couple of hours), rather than fewer, larger meals. You may find your appetite is best in the morning so have a good breakfast.
3. Drink plenty of fluids (about 10-12 cups per day) use water, clear soups and juices.
4. Imagine your digestion is like that of a young child. You'll need small quantities at one time of easily digested foods. Small jars of weaning baby food may be helpful as ready-to-eat supplemental snack meals. Protein shakes are good too (see Energy Shakes recipe on page 10)
5. Micro waving or moist cooking fruits and vegetables improves digestibility.
6. If fruits upset your stomach, use juices instead - dilute 1:3 with water.
7. Experiment with different foods in small amounts - every one's digestion is unique. Some people find spicy foods helpful while others do not.
8. Please share any other ideas you have found helpful so I can pass them on.

HERBS AND SURGERY WARNINGS

The American Medical Association recently issued the following warnings about herbs that should be discontinued prior to surgery:

<i>Herb</i>	<i>Discontinue before surgery</i>
Ephedra	At least 24 hours before surgery
Garlic	At least 7 days before surgery
Ginkgo	At least 36 hours before surgery
Ginseng	At least 7 days before surgery
Kava	At least 24 hours before surgery
St. John's Wort	At least 5 days before surgery
Valerian	Taper off weeks before surgery. Suddenly stopping can cause withdrawal problems.

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NATURAL ENERGY DRINKS

Many treatments for cancer can leave you feeling depleted of energy. Food may taste bland and uninteresting. Here are some recipes to stimulate your appetite and lift your spirits in a natural way. A garnish of fresh fruit or mint adds appeal.

Fruit Shake

- 1 cup plain low fat yogurt
- 1 ripe banana
- a few drops vanilla extract
- 1 teaspoon honey
- 1 teaspoon coconut (optional)

Blend a few ice cubes for a few minutes in a blender then add the ingredients and blend until smooth. The banana may be replaced with frozen strawberries, raspberries, half a papaya or mango, or a few chunks of pineapple.

Fruit Juice Smoothie

- 2 cups apple juice
- 1 ripe banana
- _ cup fresh or frozen strawberries or blueberries
- _ cup pineapple juice

Combine the ingredients in a blender. Serve chilled.

Energy Drink

- Dry Mix:**
- 1 cup peeled almonds
 - 1 cup sesame seeds
 - 2 tablespoons protein powder (protein sources are from soy isolate (from soybeans), whey or casein (milk protein) and/or albumin (egg white)).

Combine ingredients in a blender and blend until fine. This mix can be refrigerated for up to two weeks in a sealed jar. Blend with 8 fl oz of chilled Fresh Mix and drink as a meal enhancer or replacement. Use protein powder alone if other ingredients not available.

- Fresh Mix:**
- 1 ripe banana
 - 1 cup fruit juice (apple, cranberry, or similar)
 - _ cup mineral water
 - honey to taste (optional)

Combine ingredients with 1 tablespoon of the dry mix in a blender. Sip slowly.
You can add fresh berries to enhance canned products (Boost, Ensure, etc.).

IMMUNO-SOUP

This vegetable-based soup is high in immune building nutrients. It is easily digested and makes a filling meal despite being low in calories. It is also high in dietary fiber which is supportive of colon health. A diet consisting of 25-30 grams of fiber each day improves the internal regulation of hormones. More than 35 grams may interfere with mineral metabolism and is not recommended.

Ingredients:

- 1 head of celery**
- 1 bunch parsley**
- _ lb green beans**
- 4 zucchini**
- 1 lb fresh spinach, beet greens or chard**
- _ green bell pepper**
- _ red pepper**
- 1 bunch scallions**
- 1 large potato (Yukon gold are good)**
- 3 medium carrots**
- _ head cauliflower or 1 head of broccoli**
- 1 turnip/rutabaga**
- 1 parsnip**
- 2 cloves minced fresh garlic**
- herbs to taste (thyme, rosemary, oregano, marjoram, etc.)**

Any other vegetables are possible - experiment with seasonal and favorite varieties. Wash, slice, chop or grate all the vegetables into even sized pieces. Place root vegetables (carrots, potatoes, turnip, rutabaga or parsnip) into a large pot. Half fill with water and bring to the boil. Cover and simmer for 10 minutes.

Add all of the other ingredients and season to taste. Return to the boil and cook for a further 1-2 minutes uncovered. Cover and simmer for a further 40 minutes. Adjust seasoning and serve hot or cold. This soup improves with age. Cool rapidly and keep refrigerated or freeze serving sized portions for a quick meal. Make sure you reheat thoroughly and boil for at least 2 minutes when reheating. There are many anti-carcinogenic botanical factors or phytochemicals in vegetables which help your immune system.

This soup is a good way of getting your daily protection of plant based nutrients. The soup contains less than 3 grams of fat (beneficial type).

Tamari, soy sauce or Bragg's liquid aminos improve the flavoring.

You can add more carbohydrate energy by adding brown rice, barley, noodles, canned beans or corn.

Serve with hot bread. Serves 3-4 bowls.

SUGGESTIONS FOR HANDLING PROBLEMS DURING TREATMENT FOR CANCER

Eating well is vital to give you that extra edge as you participate in your own recovery. Choose healthy foods to empower yourself for this important time in your life. Each time you choose a fruit, vegetable or protein rich food you are giving your body what it needs to fight the cancer. Improved nutrition can also help you withstand the side effects of chemotherapy, radiation and surgery. Some treatments may make eating difficult or distasteful. Here are some specific suggestions to help you with some of the most common treatment-related problems. Even if some of these suggestions are in conflict with the basic high fiber/low saturated fat concepts you are familiar with, maintaining a reasonably constant body weight is your overriding priority at this time. Fats or oils from sources that contain more of the beneficial fatty acids are useful to boost calories and still support your immunity. Examples include olives (and olive oil), avocados, nuts (almonds, walnuts and Brazil nuts are particularly good - nut butters are valuable ways of consuming them) and seeds (sunflower or pumpkin).

Suggestions for chewing and swallowing difficulties:

1. Eat foods prepared with moist heat, e.g. soups, stews, eggs, pastas, quiches, casseroles.
2. Add gravy, sauces, butter, mayonnaise or salad dressings to make food easier to swallow.
3. Avoid highly seasoned, spicy, tart or acidic foods (no citrus fruits, tomatoes, chilies)
4. Avoid alcohol and smoking.
5. Cold foods may be soothing if there are sores in the mouth. Use a straw.
6. Keep your caloric intake high by using meal replacement type drinks, e.g. Ensure.
7. If you have trouble swallowing soups, try using a cup or glass instead of a spoon.
8. Carbonated drinks may be easier to swallow.

Suggestions for dealing with diarrhea:

1. Avoid high fiber foods that contain a great deal of roughage, e.g. whole wheat breads or cereals, raw fruits and vegetables except bananas, cooked vegetables with seeds or skins, dried beans and nuts, popcorn. Cucumber and lettuce may be difficult to digest.
2. Eat water soluble, fiber-rich foods, e.g. apple sauce or puree, psyllium, e.g. Metamucil.
3. Don't drink with your meals, but drink plenty of water in between.
4. Eat frequent, small snack type meals, rather than three large ones.
5. Food and liquids should be warm or a room temperature, rather than very hot or ice cold.
6. For severe diarrhea restrict your diet to clear, warm liquids such as broth, flat ginger ale, tea or apple juice for one day. Check with your doctor if it persists more than one day.

Suggestions for dealing with nausea and/or vomiting:

1. Eat and drink slowly.
2. Eat small, frequent meals.
3. Avoid greasy, fatty and fried foods.
4. Rest after meals.

5. For early morning or pre-meal nausea, try a cracker or dry toast.
6. Make up for lost calories when you feel more comfortable.
7. If cooking odors make you feel nauseated, try micro waving. Use a strong venting fan while you are cooking or eat outside if the weather permits. Try frozen or chilled foods as they give off less odor.

Suggestions for loss of appetite:

1. If you aren't hungry at dinner time, make breakfast or lunch your main meal. Similarly, if you aren't hungry first thing in the morning, eat more later in the day.
2. Eat more frequently, but smaller amounts of food.
3. Keep snacks readily available, e.g. in your purse or in the car.
4. Always make food look attractive with garnishes or with place settings.
5. Experiment with tastes - you may find things you didn't like before you like now.
6. Cold or room temperature foods may be more appealing.
7. A glass of wine or beer may increase your appetite (check with your doctor first in case alcohol doesn't mix with a medication).
8. Increase the caloric intake of the foods that you do eat with a small amount of "light" (less strongly flavored, not fewer calories) olive oil.
9. Try some of the commercially prepared food supplements, e.g. Ensure, Boost, Sustacal or Polycose (powdered, unflavored starch), available from most good pharmacies or drug stores. Add fresh berries or juice for variety and additional botanical factors.

SUGGESTIONS FOR EATING TO PROVIDE MAXIMUM IMMUNITY

When you make wise eating choices you may be able to fortify your natural defenses as well as help you better handle treatments. Remember, also, to take extra care with personal and foot hygiene at this time. Listen to your body's needs for rest and sleep. You will benefit from being in natural surroundings and by keeping company with those who don't drain you of energy.

As each person's nutritional needs are very individual, I suggest that you see a nutritionist or dietitian at this time to assist you in making healthy food choices. Make a weekly food and exercise diary and place it on the refrigerator. This way you can monitor your changes in a way that is valuable for you, your family and your health practitioners.

The following essential nutrients maintain healthy immunity:

Nutrient	Food Source
Vitamin A	Fish liver oils, liver
Beta Carotene (provitamin A)	Orange, yellow and dark green leafy vegetables including carrots, cantaloupe, apricots, spinach
Vitamin B2 (Riboflavin)	Whole and enriched cereals and breads. Lean meat, milk, eggs, liver, dried yeast
Vitamin B6 (Pyridoxine)	As for B2, and bananas
Folic Acid	Leafy green vegetables, meats
Pantothenic Acid	Brewer's yeast, legumes, salmon, whole grains
Vitamin C	Citrus; fruits, berries, broccoli, bell peppers
Vitamin E	Leafy green vegetables, egg yolk, liver, wheat germ
Selenium	Garlic, legumes, fish, asparagus
Iron	Liver, peas, egg yolk, asparagus
Zinc	Liver, oysters, soybeans, sunflower seeds

Magnesium	Green leafy vegetables, nuts, seafood
Manganese	Bananas, bran, pineapple, nuts
Protein	Lean meat, poultry, fish, shellfish, eggs, legumes, broccoli, sunflower seeds
Antioxidants	Citrus fruits, legumes, whole grains
Botanical Factors (Phytonutrients)	All plant sources of food, especially dark and brightly colored fruits and vegetables.

DIETARY FAT/OMEGA-3 FATTY ACIDS AND CANCER

Recent studies indicate that many of the hormone related cancers (breast, colorectal and prostate) are linked to a high intake of animal protein and fat. It is prudent for those diagnosed with one of these types of cancer to cut back on dietary fat to about 20% of your calories from fat (about 40 grams or about 4 tablespoons) with only 5% coming from animal sources (butter, milk, yogurt, meat, etc.) and 10% or more from fish or the plant kingdom (vegetables, nuts, seeds and fruits like avocados and olives). Remember that too little fat is also harmful and if you go lower than 15% of your calories from fat (about 1-2 T oil per day) then use a supplement of borage or flax seed oil for essential fatty acids. Essential fatty acids are needed for proper brain and nervous function and a healthy skin texture. A panel of nutritionists and scientists at the National Institutes of Health recently recommended that the ratio of omega-6:omega-3 fatty acids should be 4 or less. Usual dietary intakes in the United States are much higher at 10-20:1. We can improve the ratio by cutting down on omega-6 and adding omega-3. Supplements of fish oil can help especially if you don't enjoy eating fish.

If you have been diagnosed with another type of cancer (or just want to eat a healthy diet) it is prudent to eat about 25% of your calories from fat predominantly from fish or plant sources.

Omega-3 fatty acids are found in oily fish and some nuts, seeds and vegetables. We eat fewer of these essential fatty acids in a typical modern diet and recent studies indicate that we would benefit with supplementation. Evening primrose, flaxseed and borage are good sources of GLA (gamma linoleic acid) which is also important in regulating hormones and prostaglandins (short acting local hormones).

Choose oily fish, nuts and seeds often.

Watch your intake of full fat butter, cheese and butter.

Use cold pressed virgin olive oil for salad dressings.

FAT CONTENT OF VARIOUS FOODS

Remember it is the type of fat that is most important - choose vegetable or fish sources most often - avoid *trans fatty acids* from hydrogenated oils

HIGH (50 - 100% calories derived from fat)

100%	Butter, margarine, vegetable oils (olive, canola etc.), mayonnaise
95%	Whipping cream, olives, pecans
90%	Cream cheese, Italian dressing, avocado
85%	Hot dog, pork sausage, sour cream, walnuts
80%	Bacon, spare ribs, half & half
75%	Cashews, cheddar cheese, lamb chops, peanut butter, salami sunflower seeds, T-bone steak (untrimmed)
70%	Ham, pork chops (including edge), Swiss cheese
65%	Eggs (whole), ice cream, potato salad
60%	Chicken McNuggets, chocolate (sweet German)
_____55%	Granola, Big Mac, T-bone steak (trimmed)

MEDIUM (Between 30 and 50% of calories from fat)

45%	Milk (3.5%), Donuts, custard, french fries, oil-packed tuna, granola cereals, tofu, chocolate chip cookies, Snickers, peanut M & M's
40%	Creamed cottage cheese, skinless poultry, commercial taco shells, pork chop (trimmed), salmon
35%	Low fat (2%) milk, Swiss and American cheese slices, flank steak, lamb (trimmed), cheese pizza (thin crust)
_____30%	Beef bouillon, ice milk, cornbread, low fat muffins

LOW (Below 30% of calories from fat)

25%	Raw oysters, saltine crackers, low fat chocolate milk, medium fat yoghurt (2-5g fat per serving), low fat (1%) milk
20%	Graham crackers and most low fat crackers, low fat (2%) cottage cheese, low fat yogurt
15%	Corn and flour tortillas, most bread, water-packed tuna, fresh white fish
<10%	Fruit and vegetables, cereals, low fat yoghurt, low calorie salad dressings, Non fat (skim) milk, shrimp, crab, lobster, chocolate syrup.

NON FAT

Sherbet, rice, most pastas, hard candy, egg white, most fruits and vegetables.

Digestive Enzymes Explained

What are digestive enzymes?

Digestive enzymes are proteins that assist in the breakdown of food components such as protein, carbohydrate and fats. Most of them end in -ase.

Proteases break down proteins

Amylases break down carbohydrates

Lipases break down fats

The smaller fragments are made digestible or able to be absorbed into the body from the intestinal tract.

Why do we need to take enzyme supplements?

Life today is so stressful that most of us don't secrete sufficient digestive enzymes. This results in intestinal discomfort and gas. Supplemental digestive enzymes can be helpful in reducing these symptoms.

Where are digestive enzymes found in foods?

Bromelain is found in fresh pineapple and papain comes from fresh papaya. Because enzymes are proteins they are easily denatured by heat. This means they no longer do their work effectively because their shape is altered.

What other benefits of enzymes?

Bromelain and papain and other proteases have been found to be beneficial to the immune system. Studies indicate increased numbers of white cells and activity of white cells when supplements of 250 mg or more are taken daily. Many people find that supplements of enzymes assist during chemotherapy possibly helping to induce programmed cell death or apoptosis.

