

High Protein/High Calorie Diet

With a focus on Cancer patients

Purpose:

Individuals suffering from cancer, AIDS, burn patients, and those prepping for severe surgery are just a few of the many different types of patients that will require high protein/high calorie diet. I am going to focus on children cancer patients. Good nutrition is vital for children being treated for cancer. Many cancer patients, and especially children, have poor appetites due to chemotherapy and radiation therapies. Side effects from medication may make the body not tolerate foods well. Children who maintain adequate nutrition under cancer conditions grow, develop, maximize quality of life, and are able to tolerate chemotherapy or radiation better.

(Diet Rational)

High Energy/High Protein diets allow for faster healing, resist infection, recover faster from surgery/illness and aid in the loss or gain of weight.

Any cancer patient will have an increased calorie and protein need. Protein is needed for growth and to help the body repair itself. Getting enough calories can help the body grow, heal or prevent weight loss.

Nutrition indicators: Abnormal lab values in the following: Albumin, Total Protein, Prealbumin, Transferrin, Low TG, WBC, RBC, LYMPHS, & MONOS.

Criteria to assign the diet: Severe weight loss, muscle wasting, dehydration, low levels or prealbumin and albumin.

Population: Anyone can require this type of diet. As I stated previously, patients with AIDS, cancer, burn victims, and those prepping for surgery are just a few of the types of patients that will need to endure this type of diet. The population ranges from any age. I am focusing on children cancer. The especially need high protein/high kcal diets when undergoing any type of medical condition because their bodies are also growing and developing while suffering through a deadly disease.

Disease Process: (Cancer in Children) Consuming sufficiency calories and protein is more important for children with cancer since the disease typically increased their nutritional needs. Cancer directly affects your nutritional status by changing the body's metabolism and causing you to lose your appetite. Cancer causes individual changes in the body's ability to break down carbohydrates, protein, and fat. These changes lead to the loss of muscle and fat.

Biochemical and Nutrient Needs: High protein and energy dense foods with adequate amounts of Vitamin A, Vitamins C, Vitamin E, Calcium, Vitamin D etc.

General Guidelines:

Eat a balanced diet including a variety of foods. Eat small frequent meals to increase your calorie and protein intake. The following are general guidelines:

_ Drink at least 2 cups or more of milk, if tolerated. Use lactose free milk if you have difficulty digesting regular milk products

-Use whole milk to get the most calories. Also include other milk products such as cheese, ice cream, pudding or yogurt.

_ Eat 2 or more 3-ounce servings of meat, poultry or fish, or meat substitute such as eggs, beans, peas, lentils, cheese or peanut butter. Tofu and other soy products may also be used.

_ Eat 2 or more servings of fruit or fruit juice each day.

_ Eat 3 or more servings of vegetables each day. One choice should be a dark green, leafy or deep yellow-orange vegetable.

_ Eat 6 or more servings of bread, grains, cereals or other starchy foods each day.

(Minimum intakes)

Nutrition Rx:

- **Determining Nutrient Requirements**
 - **Individualized**
 - **Determine Kcal to maintain weight and prevent loss**
 - **Determine Protein need to prevent negative nitrogen balance and meet synthesis needs**
 - **Fluid needs - 30-35 mL/kg**
 - **Multivitamin mineral supplement < 150% DRI**
- Increase protein and calories in the diet.
- Eat smaller, but more frequent meals.
- Add powdered milk to foods and beverages.
- Drink mainly calorie-containing beverages such as juices, milk, or sweetened drinks.
- Add extra eggs or egg whites to foods. Never use raw eggs. They may be contaminated with salmonella, which is dangerous for everyone but especially those who are immune-suppressed. Raw eggs also contain a vitamin binder.
- Add diced meat or cheese to sauces, vegetables, soups, and casseroles.

- Snack throughout the day on calorie-dense foods such as nuts, hard candy, and dried fruits.
- Consider using commercially available nutrition supplements. Make your own high-calorie shake by using an instant breakfast drink mix with milk, fruit, cookies, peanut butter, or other favorite mixers.
- Increasing fats in the diet is an excellent way to increase energy consumption, if you are tolerating fats. Add margarine or butter to breads and vegetables. Add gravies and sauces to foods in liberal amounts.
- If you are unable to digest fat, consult with your health care provider for alternative fat sources. Supplements containing medium-chain triglycerides are often recommended for this purpose

Goals:

Objectives for a high calorie/high protein (cancer) diet:

- To achieve or maintain optimal nutrition status
- To make the best of the benefits of therapy the patient is receiving
- To reduce symptoms caused by treatment
- To prevent or reverse loss of fat
- To prevent any serious abnormalities in weight loss

Meet DRI:

Of course a diet high in calories and protein will meet the DRI's recommendations for protein, fat, and carbohydrates. Children are supposed to receive around 30 grams of protein, 31 grams of fat, and 130 g of carbohydrates. Adults are required to receive close to 50 grams of protein and 50 grams of fat. These are averages and every patient's need will change base on age, height, and disease state. However, this diet exceeds the needs to aid in healing and growing.

Education Material

Nutrition Therapy: Dietitian will create a plan for cancer patient to prevent malnutrition, keep patient nourished while trying to improve the quality of life. Weight status and BMI will be taken into account to create a kilocalorie nutrient goal while determining protein and fat need. (1.5 g/protein per kg of weight is usually recommended for a patient going through chemotherapy)

For example. Cancer Patient = 70 kg x 1.5 g (protein) = 105 g of protein

Ideas for Compliance:

- Smaller, more frequent meals and snacks.
- Changing the time, place, and surrounding of meals.
- Let your child help with shopping and preparing meals.
- Offer high-calorie, high-protein meals and snacks.

- Avoid forcing child to eat - this may make your child's appetite worse.
- Make meal time a happy time
- Nutrition Education to better understand how to manage symptoms and maintain a balanced diet
- Programs and classes on nutrition and cancer
- Cooking demonstrations
- Books, articles on cancer nutrition

Food Recommendations

Foods high in protein include meats (beef, chicken, fish, turkey, lamb) milk, cheese, eggs, and peanut butter. Puddings and yogurts packed for children typically contain high amounts of protein and are often appealing to a child. Dried beans and peas are also high in protein. To add calories and protein to a child's meal add powdered milk to foods, beverages, puddings, cream soups, and cooked cereals. Add eggs to mashed potatoes and macaroni. Add cheeses, wheat germ, and butter to products.

If child is also lactose intolerant add calcium fortified orange juice that can be added into frozen treats.

Foods to Avoid: Foods to avoid while on a high calorie/high protein diet are simple sugars and non-nutrient dense foods. The whole purpose of this diet is to increase caloric and protein intake is to rebuild tissue and prevent muscle wasting.

A high protein/high calorie diet for a patient with cancer...

Never give a cancer patient their favorite food. If they are feeling nauseated they may associate their favorite food with their nausea.

Some additives and chemicals are carcinogenic. If you eat a lot of sugary snacks loaded with simple carbohydrates, you're loading your bloodstream with the chemical energy needed for cancer cells (and tumors) to proliferate. No biological system can live without fuel for its chemical processes including cancer cells. Avoid refined sugars, refined grains, and heavy use of sweeteners.

Sample Menu

The following is a sample menu. If you need extra calories or protein in your diet, add more servings.

Breakfast:

½ cup cooked cereal

½ cup milk

½ cup fruit or fruit juice

1 hard-boiled egg

Beverage (coffee, tea or water)

Snack:

¼ cup granola

½ cup low-fat yogurt

Lunch:

Sandwich: 2 slices whole-grain bread

4 oz lean meat, fish, or poultry

1 tsp mayonnaise

lettuce, tomato slices

1 piece of fruit

½ cup carrot sticks

Beverage

Snack:

½ cup raw vegetables

2 Tbsp of peanut butter

Dinner:

4 oz lean meat, fish or poultry

1 cup steamed vegetables

½ cup grain product (pasta, brown rice)

1 tsp of butter

1 cup of milk

Beverage

Snack:

4 whole-wheat crackers

2 Tbsp of peanut butter

Beverage

Websites:

www.nutritioncaremanual.com

www.upmc.com

www.mayoclinic.com

www.cancercenter.com

www.childrens.com

www.utsouthwestern.edu

www.cancer.org

Government websites...

www.cancer.gov

www.vic.gov.au/cancer

journal references

Shield J, Mullen MC. Patient education materials. *Supplement to the Manual of Clinical Dietetics*. 3rd ed. Chicago, IL: American Dietetic Association; 2001

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http://www.dieteticsatwork.com/client_education/sample_high_calorie_high_protein_diet_f.html

<http://www.lpch.org/DiseaseHealthInfo/HealthLibrary/oncology/hchpd.htm>