Optimizing Nutrition for Patients with Bone Marrow Failure Diseases

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On Today’s Menu

• Eating to optimize health & wellness

• Nutrition during treatment:
  – Managing eating problems
  – Nutrition & fatigue
  – Food safety

• Making diet changes

American Institute for Cancer Research (AICR)

AICR Guidelines for Cancer Prevention

Choose mostly plant foods, limit red meat and avoid processed meat
Be physically active every day in any way for 30 minutes or more
Aim to be a healthy weight throughout life
And always remember – do not smoke or chew tobacco
Choose Mostly Plant Foods

- A plant-based diet has been linked with a reduced risk of cancer, heart disease, obesity, diabetes, hypertension and Alzheimer's disease.

- The health benefits come from a *whole eating pattern* vs. one particular food.

- Helps achieve two goals:
  - Increased intake of vitamins, minerals, dietary fiber, and health promoting phytochemicals
  - Reduced consumption of animal fats and animal protein, salt, sugars, additives & preservatives

Your plate should hold $\frac{1}{3}$ (or more) vegetables, fruit, whole grains and beans and $\frac{1}{3}$ (or less) meat, chicken or fish.

Phytochemicals: Protective Compounds in the Food We Eat

Plan to eat a minimum of 5, preferably 8-10 servings of COLORFUL vegetables & fruits daily (4-5 cups total).
Whole Grains and Beans

Whole Grains

So much more than carbohydrates:
• Antioxidants
• Vitamins
• Minerals
• Fiber
• Phytochemicals

Whole Grains Examples: amaranth * barley * brown rice
* buckwheat (kasha) * millet * oats * popcorn * quinoa *
rye * triticale * wheat (berries, bulgur, cracked, flakes)

Limit Red Meat & Avoid Processed Meats

• Red meats & processed meats increase the risk of colorectal cancer and possibly others.
  – ≥18 ounces/wk of beef, pork, or lamb
  – Any level of processed meat (hot dogs, bologna, sausage)
• Choose fish, poultry, or beans as an alternative.
• Select lean cuts and smaller portions (3-4 oz).
• Bake, poach, or roast instead of frying or charbroiling.
Limit or Avoid Alcohol

- For cancer prevention, AICR recommends not to drink alcohol.
- They do recognize that small amounts of alcohol may have a protective effect on heart disease.
- If you do drink alcohol, limit to no more than two drinks a day for men and one drink a day for women.

Exercise

- Some form of regular exercise is important for both physical and emotional health.
- Aim for 30 minutes or more of moderate intensity exercise daily.
  - If this level is unachievable for you, any amount or form of exercise will provide some benefits if done consistently.
  - There may be limitations to the amount and type of exercise that is safe for you to do so discuss exercise with your doctor.
**Body Mass Index**

- A screening tool that looks for weight problems.
- Calculated from weight & height.
  - Generally, the higher the number, the more body fat a person has.
- Online BMI calculator:
  - [http://www.nhlbisupport.com/bmi/](http://www.nhlbisupport.com/bmi/)

Avoid sugary drinks. Limit consumption of processed foods & foods high in added sugar & fat.

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<th>Calories</th>
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Characteristically Chinese

- Characteristically Chinese food is both tasty and rich in calories. The weight consumption of Chinese food is not so high, but the high calorie consumption makes it hard to lose weight. In addition, Chinese food contains a lot of oil and salt, which also increases the calorie consumption. The Chinese diet also includes a lot of sauces, which contain a lot of oil and salt. Therefore, the Chinese diet is not suitable for weight loss.

www.pictureperfectweightloss.com
Nutrition During Treatment

• Unless instructed otherwise, eat a balanced, plant based diet:
  – Focus on vegetables, fruits, whole grains & small amounts of good-quality protein & healthy fat sources
  – Protein rich foods include legumes, soy, chicken, fish, other lean meats, eggs & low fat dairy foods
  – Healthy fat sources include nuts/seeds, avocados, olive oil & fatty fish like salmon

Side Effect Management - Taste Changes

• Oral hygiene → Brush teeth regularly, mouth rinses
• Sugar free mints or chew gum
• Experiment with flavors:
  – Herbs and spices
  – Lemon, lime, vinegar or salt to overly sweet foods
  – Maple syrup, fruit, or cinnamon to foods if too salty
• Popsicles to “cleanse palate”
• Add a splash of juice to water
• Use alternate protein sources if red meat tastes off
• Use chopsticks/plastic utensils/avoid cans if things taste metallic
Side Effect Management – Sore Mouth/Throat

- Try smooth, bland, cold/room temperature foods
  - Yogurt, eggs, mashed sweet potatoes, applesauce
- Moisten foods with olive oil, thin gravy, or sauce
- Use a straw to direct liquids away from painful area
- Use a smaller than usual spoon (i.e., a baby spoon)
- Suck on ice chips or popsicles to numb painful areas
- Avoid alcohol, citrus, caffeine, tomatoes, vinegar and hot peppers
- Avoid rough, course, or dry foods

Side Effect Management – Constipation

- Regular meal intervals
- High-fiber foods
  - Bran cereals, oatmeal, brown rice, whole grain bread, vegetables and fruit with the skin on, ground flaxseed
  - Fiber supplement (Benefiber)
- Drink plenty of fluids
- Hot beverages ½ hour before usual meal time
- Prune juice (warm if able to tolerate)
- Increase physical activity

Side Effect Management – Diarrhea

- Drink plenty of room-temperature liquids.
- Limit caffeine
- Try the BRAT diet (bananas, rice, applesauce, tea & toast)
- Avoid large meals
- Avoid fried, greasy, spicy foods and rich desserts
- Cut down on high-fiber foods
  - Whole grains, bran cereals, nuts and seeds
  - Raw vegetables and the skins, seeds, and stringy fibers of unpeeled fruits
- Use dairy products sparingly
  - Try Lactaid, yogurt, soy or rice milk
Side Effect Management – Nausea

- Eat small, frequent meals
- Low-fat, bland, salty, colder foods and main-dish salads often work best
- Try tart foods like green apples, cranberry or lemonade
- Slowly drink or sip liquids throughout the day
- Do not lie flat for at least two hours after eating
- Keep crackers at your bedside
- Avoid your favorite foods
- Avoid greasy, fried and strongly spiced foods
- Stay away from odors

Side Effect Management – Poor Appetite

- Eat often
- Eat by-the-clock until your hunger cues return
- Pleasant eating environment
- Light exercise
- Make most of times when feeling good
- Make the most of your toast!
- Avoid low calorie foods/beverages
- Nutrient-dense foods/liquids
  - Smoothies or milkshakes, nuts/nut butters, granola, avocado, olive oil, olives, hummus, eggs, cheese, dried fruit, juices

Nutrition & Fatigue

- No "magic bullet" food for fatigue → need a whole lifestyle approach
- Nutrition strategies:
  - Maintain weight
  - Stay well hydrated (limit alcoholic and caffeine)
  - Combine protein with fiber at meals or snacks:
    - Fruit with nuts
    - Salad with beans or 2-3 ounces of chicken
    - Fruit smoothie with soymilk and yogurt
  - Take a multi-vitamin if eating poorly
- Other lifestyle factors:
  - Sleep
  - Exercise
  - Stress reduction
Strategies for Maintaining Nutrition When Energy is Low

- Plan ahead
- Take advantage of up times
- Keep it simple
- Conserve energy when cooking
- Accept support from family and friends

Use Supplements Safely

- Look out for red flags for herbs & supplements.
- Learn about possible supplement-drug interactions before starting a supplement. Examples:
  - Vitamin K & blood thinners
  - St. John’s wort
  - Velcade & EGCG (green tea extract)
- Use supplements that have been tested.
  - Organizations that offer this quality testing include U.S. Pharmacopeia, ConsumerLab.com, NSF International
- Don’t rely on supplements to prevent cancer.
- Discuss the use of supplements with your health care provider.

Food Safety

- Patients who have a weakened immune system are at risk for food-borne illness. The most important factor to decrease the risk of food-borne illness is food safety.
- Food Preparation:
  - Wash hands thoroughly with warm, soapy water!
  - Keep all kitchen items clean.
  - Towels should be replaced daily
- Food Storage:
  - Keep cold foods cold (<40° F), keep hot foods hot (>140° F)
  - Reheat leftovers to at least 165° F
  - Refrigerate perishable foods within two hours
  - When in doubt, throw it out
Food Safety

- Meat, Poultry, Eggs, Seafood & Dairy:
  - Separate – don’t cross contaminate
  - Thaw in the refrigerator only
  - Cook to the right temperature
  - Avoid unpasteurized dairy products or raw honey

- Water and Other Beverages:
  - In general, tap water is safe for drinking throughout the United States.
  - Water from private wells is not recommended unless it has been evaluated for bacterial contamination.
  - Avoid unpasteurized juices or unpasteurized beer

- Fruits and Vegetables:
  - Wash thoroughly prior to eating, peeling, or cooking
  - Cut away any damaged or bruised areas
  - Scrub firm produce with a clean produce brush
  - Drying produce with a clean towel can help reduce bacteria
  - Avoid all raw sprouts

- Eating Away from Home:
  - Choose restaurants wisely
  - Avoid salad bars, public self-serve condiments, self-serve buffets and foods held in a warming containers
  - Avoid fountain beverages and ice from ice machines
  - Avoid raw fruits and vegetables when eating out; reserve these foods for home where you can wash them thoroughly

What Can A Healthy Diet Do For Me?

- Reduce risk of chronic diseases
- Improve quality of life
- Increase energy levels
- Facilitate recovery and decrease toxicities of treatment
Summary: Healthy Diet Guidelines

• Balanced diet with a variety of foods:
  – Primarily plant based diet
  – Choose fruits & vegetables of intense color
  – Low fat diet – include healthy fat sources
  – Choose lean & plant protein sources
  – Limit added sugars and refined grains
  – Adequate fluids
  – Prepare food safely
• Be physically active
• Maintain a healthy weight
• Modify diet as needed to manage side effects of treatment

Making Diet Changes

Don’t think diet, think change!
1. Assess your current habits
2. Make a commitment
3. Find your inner motivation
4. Set realistic goals
5. Monitor your progress
6. Be patient with yourself, you are making lifestyle changes!

Resources

Websites
• American Institute for Cancer Research: http://www.aicr.org
• Caring4Cancer: http://www.caring4cancer.com
• Diana Dyer, MS, RD: http://www.cancerrd.com
• UCSF Cancer Resource Center: http://cc.ucsf.edu/crc
• Oncology Nutrition Practice Group: http://www.oncologynutrition.org/
• Consumer Lab: http://www.consumerlab.com
• Office of Dietary Supplements: http://ods.od.nih.gov/
Resources

Food Safety Resources
- FDA: Center for Food Safety (www.cfsan.fda.gov) or 1-800-532-4440.
- USDA: Food Safety for Transplant Recipients (www.fsis.usda.gov/PDF/Food_Safety_for_Transplant_Recipients.pdf)
- Centers for Disease Control and Prevention (www.cdc.gov/foodsafety) or 1-888-232-3228

Cookbooks
- Cancer Lifeline Cookbook – Kimberly Mathai, 2004
- New American Plate Cookbook – AICR, 2005
- The Cancer Fighting Kitchen – Rebecca Katz, 2009