

Working Together to Feed a Sick Child

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This article is a written version of a presentation I gave to caregivers and nurses during the International Society of Pediatric Oncology (SIOP) Africa conference in March 2010 in Accra, Ghana. It is targeted primarily to caregivers of children with cancer. I have the privilege of working in a very prestigious hospital blessed with many resources. Because I am also involved in international outreach, I am very aware that not every hospital has the same resources available as our hospital does. Some recommendations I am giving are not possible at this time in many hospitals around the world. Because this article is for a diverse population of readers, I will give suggestions and recommendations for patients I am caring for and encourage readers to choose what is appropriate for their hospital and culture.

I will address the importance of involvement of the caregiver for patient healing, priorities in patient nutrition, nutrition intervention, and prevention.

We have to realize that food is not only nutrition but it is influenced by many factors and has many meanings. We use food for celebrations and for grief. We eat differently in the summer than in the winter and crave different foods in different situations. Eating is very complex, and it is connected to our physical, psychical, and social status.

The importance of caregiver involvement for patient healing

Who is a caregiver? A caregiver is anybody who most often takes care of a particular child. Usually it is a mother, but it may be a father, grandmother, grandfather, older sibling, or other relatives. The benefit of having a caregiver at the bedside is tremendous. The child benefits, the caregiver benefits, and the hospital benefits as well. Just for the purpose of this article, and with apologies to involved fathers, I will use a mother as an example of a caregiver.

We all know that children need to be nurtured to thrive. This nurturing involves being with the child, holding the child, playing with the child, and feeding the child. A mother who knows the child well is also the best nurse; mothers are also the most concerned about a child's safety and welfare. A mother knows which foods her child likes and which foods he dislikes. She knows how much her child usually eats and what signifies that her child is not feeling well. A mother can also prepare or order food for her child without needing a long description about the preferred method of preparation.

A mother is needed for a feeling of security while in the hospital. Hospitals, even if they are very nice, are still hospitals and a foreign place full of "strangers."

Habits that are normal at home cannot be continued while the child is hospitalized. For example, many small children are used to sleeping at least part of the night in mom's and dad's bed. It is a natural behavior for a mother to want to be close to her child and for the child to want to be close to the mother. If mother is nursing, then it is especially beneficial for both to sleep together. It also has a nurturing and healing effect on a child to sleep with the mother. Older children usually search the refrigerator at midnight to find food. Those and similar behaviors are important for dietary intake, but cannot be accommodated when the child is in the hospital.

Separation of children from their mothers can seriously affect the child's dietary intake. The younger the child is, the more negative effect such separation has. Studies with premature infants have shown that children thrive and gain weight when they are held by humans. This is called "kangaroo care." Especially children in the *oral-sensory stage*, a psychosocial stage of trust versus mistrust, are sensitive to separation. This stage takes place in infants 0-18 months old. Studies have shown that if a child is not nurtured by one caregiver—usually a mother—or if a child is neglected during this important time, it will not be able to have meaningful relationships with others and will be "asocial" when the child grows older. This condition is called reactive attachment disorder (RAD). It is not sufficient for the child's psychosocial development if only physiological needs are taken care of (Spitz & Spitz, 1946). One study done in our hospital (St. Jude Children's Research Hospital) found out that just the presence of the mother in the room stimulated young children's oral intake (R. Williams).

There are many benefits for the caregiver as well. It is a natural instinct of a mother to care for her child, especially when her child is sick. A mother wants to care for her child, nurture her child, be close to her child, know about the treatment her child is receiving, and understand and be informed about the treatment and procedures her child is receiving, and she wants and needs to be involved in all decisions regarding her child's treatment.

There are also benefits for the hospital. Mothers' involvement works as a safety check for medications and procedures administered. She can provide many functions that otherwise would have to be done by a nurse, and she will do it for free and will usually do it the best. She provides constant nurturing of the patient, which has a positive psychical and psychological effect. She provides continuous care with no shift changes. The trust between a mother and her child is already established, and a patient does not need to adjust to a new caregiver.

The reason I take time to address the caregiver and child relationship in this article is that I consider this relationship extremely important for the child's dietary intake. If the child is stressed, then his or her metabolic rate will be higher, and therefore the child will burn more calories. The other effect of stress is anorexia. Hospitalization is a stressful situation, but hospitalization without a mother can be debilitating.

Priorities in Patient Nutrition

For each stage of treatment, we have to establish our priorities regarding nutrition. Our priorities will be influenced by the type of treatment the patient is receiving, including chemotherapy and radiation, side effects of treatment or burden of disease, end-of-life decisions, the age of the patient, and the physical and psychosocial status of the patient.

Goal #1: Peace, no stress

Our first priority should always be the pace between the caregiver and the patient. Food should not become the center of a war or a struggle.

We also have to realize that a child who is in the hospital has no control over what is happening to him or her and many times has a poor understanding of what is going on. Some children realize that the only thing they can control is what they do or do not eat. Refusing to eat, especially if food is a struggle, can be a way for the child to try to control the situation.

I read an excellent article published in the *Journal of the American Dietetic Association*, by Lenna Frances Cooper, about how food and eating contribute to quality of life. She presented some patients' citations, which I have heard many times in my own practice. "*I want to eat, but I can't*". Another citation is by a cancer patient, "*I think probably the worst part about being sick was them trying to get you to eat.*" On the other hand, probably the most frustrating part of the treatment for parents is that the child is not eating.

We have to realize that children undergoing treatment for cancer have many reasons for not eating. The side effects of chemotherapy and radiation include dry mouth, nausea, vomiting, diarrhea, constipation, lack of appetite, and taste changes. All those side effects can contribute to poor dietary intake, resulting in weight loss.

Parents, together with medical personnel, have to establish priorities in the child's nutrition during treatment. For each day or part of the treatment, we need to have goals or priorities. Those priorities and goals will change during the treatment. Those priorities are peace, no stress; food safety; gut stimulation; caloric requirements; and nutrition.

When a child gets sick, it is a crisis situation. Therefore, our priorities are different from when a child is healthy. When a child is healthy, we know that a diet high in fresh fruit, vegetables, legumes, whole grains, and fish is beneficial. Those dietary recommendations are not realistic for a child undergoing treatment for cancer.

Our first priority is to avoid making food the center of a “war.” Eating should not be a constant struggle between the parent and a sick child. The child is already exposed to many stressors, and it is not desirable to add another one. From my experience, the more relaxed the parent is regarding dietary intake of their child, the more comfortable the child feels trying new things and expressing his or her feelings regarding food.

For centuries, specific foods have been served to the sick. This food is different in different cultures, but some similar characteristics are seen: it is easily digested and bland. Examples around the world are homemade chicken soup “caldo”, plain rice or rice pudding, potato puree, and similar foods.

Some children while in the hospital (a foreign place) want to have something that is familiar to them. They want a food prepared by their mother or request a “comfort food,” which is food that is simply prepared and associated with a sense of home or contentment. Some examples of comfort foods are: macaroni and cheese, pudding, pizza, pasta, cookies, and chocolate. This food makes us “feel good.” Comfort food is usually high in carbohydrates and fat. This “feeling good” also has a physiological explanation. Carbohydrate-rich food increases the availability of tryptophan, which increases the level of serotonin in the brain and results in a better mood. Another explanation for the link between food and mood is that foods that taste good may promote the release of endogenous opioids and thereby alter one's mood. Another important aspect of comfort food is the social dimension. Comfort foods are those familiar to the child and associated with safety and emotional comfort. Therefore, it is absolutely normal for a child who is in the hospital to consume food that provides comfort but may not provide the best nutrition. Many times it is easier to drink than to eat. Therefore some patients “drink” their calories in form of shakes, juices, or other drinks. Many commercially prepared dietary supplements are available.

Goal #2: Food safety

Patients undergoing treatment for cancer are often neutropenic. This means that they have a very limited ability to fight infection. Therefore, when a patient is neutropenic, it is recommended that a low-bacteria diet is followed, the patient wears a mask, and other precautions are followed to minimize the chance of acquiring an infection. A low-bacteria Diet, sometimes called neutropenic diet, may reduce the risk of bacterial infection in immunocompromised patients.

There are a lot of controversies about the low-bacteria diet and questions about whether it is beneficial or whether standard food safety alone is enough to protect the patient. Some hospitals in the United States and in Western Europe do not educate patients about the low-bacteria diet and have not seen any increase in infection. In general, the low-bacteria diet is recommended in countries with low sanitary standards, probably all low-income countries and in countries with a hot climate.

At St. Jude Children's Research Hospital, we recommend the low-bacteria diet to all patients with acute lymphoblastic leukemia during induction, re-induction, and any time their absolute neutrophil count is less than 500; to all patients with acute myeloblastic leukemia during the entire time of treatment; and to all patients after allogeneic bone marrow transplant until their T cells return to the normal range. Solid tumor patients and patients undergoing autologous transplant do not have to follow low-bacteria diet, but are educated about food safety. The food safety handout used in our hospital is attached, as well as the low-bacteria diet handout.

Goal #3: Gut stimulation

The next goal after making sure that the patient is not stressed because of food and food safety is gut stimulation. The gut is a muscle that needs to be working; otherwise, it will atrophy. If a patient even takes small bites of food or if enteral nutrition (tube feeding) is initiated, it will prevent atrophy. The wall of the small intestine contains villi, and on top of the villi are microvilli, which make the surface of the gut extremely large for appropriate absorption of nutrients. If the gut is not stimulated, those villi will atrophy in a couple of days, making future absorption of nutrients difficult. For gut health, it is important that patients continue to eat at least bites of food and sips of drink, even on days when eating is difficult. If patient is on parenteral nutrition, but not on nothing by mouth (NPO) for a medical reason, the patient should be encouraged to eat.

On some occasions the patient has to be NPO either for a procedure or because of a medical condition. In that case, NPO status is medically appropriate and necessary. This decision will depend on the doctor's orders.

Goal #4: Caloric requirements

Calorie requirements during treatment are usually higher. Children already have significantly higher calorie requirements than adults if calculated per kilogram of weight. The younger the child is, the higher the calorie requirement is per kilogram of weight. It is because of the rapid development during childhood, growth, and greater physical activity. During treatment, it can be quite challenging to provide all the calories a child needs for appropriate growth, tissue repair, and development. Protein requirements are also higher because of

growth. Adults remain in nitrogen balance, but children need more nitrogen to be able to provide for their growing organs.

In children up to about 10 years of age, the brain has the highest metabolic rate of all organs. At that age, brain development is very important, and we need to make sure that appropriate nutrients are provided. The situation is complicated by the fact that many drugs cause diarrhea or affect the digestion and absorption ability of the gut.

Side effects of inadequate nutrition:

Short term

- Underweight (weight/height), wasting
- Cancer cachexia

Long term

- Short stature (height/age), stunting
- Increased risk for treatment-related complications
- Reduced tolerance of therapy
- Altered drug metabolism
- Increased susceptibility to infection
- Improper physical and psychological development, possibly leading to permanent mental and physical disabilities
- Poorer treatment outcome

The younger the child is, the more severe effect malnutrition has. In some countries where food is not abundant, malnutrition is already present at diagnosis.

The dietitian calculates each patient's resting calorie needs (those are needs when the child is sleeping) and adds a stress factor to estimate total calorie needs for each patient. We compare those needs with calories actually consumed or provided via nutrition support.

In some medical conditions, calories need to be decreased or increased. Protein needs also may need to be adjusted, depending on renal and liver function. Those recommendations are done based on the recommendations of the medical doctor, the dietitian, or both working together.

Estimated protein needs

Age (years)	Basal needs (gm/kg/day)	Stress needs (gm/kg/day)
0-0.5	2.2	2.5-3.0
0.5-1	1.6	2.5-3.0

1-3	1.2	1.5-2.5
4-6	1.1	1.5-2.5
7-10	1.0	1.5-2.5
11-14	1.0	1.5-2.5
Males 15-18	0.9	1.2-2.0
Females 15-18	0.8	1.2-2.0

Estimated Kcal needs

Age	REE (kcal)
<i>Males</i>	
0-3	$(60.9 \times \text{wt}) - 54$
3-10	$(22.7 \times \text{wt}) + 495$
10-18	$(17.5 \times \text{wt}) + 651$
<i>Females</i>	
0-3	$(61.0 \times \text{wt}) - 51$
3-10	$(22.5 \times \text{wt}) + 499$
10-18	$(12.2 \times \text{wt}) + 746$

Calculate resting energy expenditure (REE) using the formulas above. Energy needs = 120%–140% of the REE.

Example:

For an 8-year-old girl weighing 27 kg,

REE = $(22.5 \times 27) + 499 = 1107$ kcal

Energy requirements = $1.2\text{--}1.4 \times 1107 = 1328\text{--}1550$ kcal

She would need approximately 1500 kcal daily intake.

Goal #5: Nutrition

The last goal is nutrition. This does not mean that appropriate nutrition is not important during treatment; it means that when we have met all the previous goals, then we can finally focus on nutrients and appropriate nutritious food. Diet consists of macronutrients: carbohydrates, protein, and fat; and micronutrients: vitamins and minerals.

A healthy diet should include plenty of vegetables in cooked or raw form, fruit, protein in the form of lean meat (fish, chicken, etc.) or plant-based protein (soy, legumes, etc.), whole grains (brown rice, whole wheat, etc.), nuts and seeds, oils (olive oil), and dairy (yogurt, etc.). Well-balanced vegetarian and vegan diets are also appropriate.

Management of side effects

Side effects of treatment include dry mouth, nausea, vomiting, diarrhea, lack of appetite, taste changes, weight loss, and constipation.

Alteration in taste and smell

From Lenna Frances Cooper's research, we know that two of the most common side effects of cancer treatment are loss of appetite and loss of taste. She used patients' descriptions of the feeling of losing taste: it was like being blind, a desperate chaotic situation, a source of great worry, a feeling of powerlessness and frustration, and like getting the worst sunburn. One chef described it as, "You make yourself a vanilla milkshake. Grab some Haagen-Dazs vanilla, add whole milk. You think you know what it's going to taste like, and it tastes like nothing. All you get is a thick texture. You get vanilla because you can smell it, but there is no sweetness. It is bizarre." I think it is a very good description. If children really cannot taste the food or if the food smells or tastes unpleasant, then it is hard to convince them to eat. They want to eat, but they cannot.

You can try:

- Select appealing foods with bright colors.
- Avoid red meat, because it may taste different; substitute poultry, fish, eggs, or other protein foods.
- Avoid foods that do not look and smell good (coffee).
- Try tart or spicy foods (pickles).
- Try cold foods, because cold food does not smell as strongly (cold sandwiches, cheese, or shakes).
- Try foods at room temperature.
- Rule out dental problems.
- Good mouth care is important during the whole treatment.

Mucositis

Mucositis is extremely painful, and even small lesions can affect the patient's oral intake.

You can try:

- Soft or pureed foods that are easy to chew and swallow.
- Cook foods until they are tender.
- Cut foods into small pieces.
- Puree food and add gravies or sauces to moisten.
- Use a straw to drink liquids.
- Try foods at room temperature.
- Rinse mouth with water after eating to remove residual food and bacteria.
- Ask a doctor about an anesthetic and spray for the mouth and throat.
- Doctor may recommend products to coat and protect the mouth and throat.

- Avoid foods that are irritating, such as rough, coarse foods; spicy or salty foods; and acidic foods like chili pepper, citric fruits, and juices.

Dry Mouth

You can try:

- Use a blender to puree food.
- Use lip salves to keep lips moist.
- Sip on water or ice chips every few minutes.
- Sweet or tart foods produce more saliva.
- Suck on sugar-free hard candy, Popsicles, or sugar-free gum.
- Rinse mouth with water after eating to remove residual food and bacteria.

Cramps, Bloating and Gas, Heartburn, Getting Full Quickly and Easily

You can try:

- Sit up or stand for about an hour after eating, rest after meals (sitting up); do not participate in rigorous activity.
- Wear loose-fitting clothing.
- Avoid eating 1-2 hours before cancer treatment.
- Avoid gas-producing foods such as broccoli, cabbage, cauliflower, beans, lentils, and onions.
- Eat small amounts of food often and slowly.

Diarrhea

You can try:

- Drink plenty of liquids to prevent dehydration; IV fluids are sometimes needed as well.
- Eat small amounts of food throughout the day rather than 3 large meals.
- Replenish sodium and potassium (such as with coconut water or Gatorade).
- Eat low-fiber diet or low-residue diet.
- Avoid food high in grease and fat, raw foods, and spices.
- Drink liquids at room temperature.
- Limit caffeine, strong teas, soda, and chocolate.
- Rule out lactose intolerance, which is common during treatment.

Constipation

Some medication and chemotherapy (such as vincristine and codeine) can cause constipation.

You can try:

- Drink plenty of liquids.

- Drink something hot 30 minutes before expected bowel movement.
- Eat a high-fiber diet.
- Ask a doctor about a stool softener or laxative.

Nausea and vomiting

You can try:

- Avoid hot foods.
- Avoid greasy, fried, or heavily spiced foods.
- Eat crackers or toast before getting out of bed.
- Ask a doctor about an antiemetic.
- Eat small amounts often and slowly during the day.
- Avoid eating in rooms with strong odors.
- Drink fewer liquids with meals.
- Sip on liquids throughout the day.
- Drink cool or cold beverages.

Loss of appetite

You can try:

- Ask a doctor about an appetite stimulant.
- Keep snacks handy.
- Ask a dietitian or doctor about adding nutrients to the diet as supplements.
- Serve small food portions.
- Stay calm at mealtimes; don't rush to finish meals.
- Rule out depression.
- Encourage eating with others, such as family or friends.
- Eat whenever hungry; don't restrict intake to mealtimes only.
- Utilize "good" days to increase your food intake.

Weight gain during treatment

You can try:

- Delay dieting or losing weight until the cause of the weight gain is identified.
- Follow no-concentrated-sweets and no-added-salt diet if weight gain is attributed to steroids.
- Use the hunger scale.
- Exercise regularly unless contraindicated.
- Try to identify emotional and environmental reasons for overeating and snacking.
- Try to eat high-nutrition, low-calorie foods (fruit, vegetables, legumes, fish, etc.).

Intervention

There are various criteria and circumstances for dietary intervention, but just for your orientation, I am attaching the Children Oncology Guidelines:

Anthropometric

- > 5% weight loss
- < 10th percentile or >90th percentile weight/height (under 3 years).
- < 90th percentile or >120th percentile IBW for height.
- < 5th percentile or >85th percentile BMI for age (>3 years).
- < 10th percentile height/age.
- < 10th percentile weight/age.
- Assess subcutaneous fat and muscle mass for signs of underweight or overweight.
- Current percentile of weight or height ↓ 2 channels on age appropriated growth chart.

Nutrient intake < 80% estimated Kcal needs

If the child is not eating, is losing weight, or is already underweight, it is a reason to start dietary intervention. There are different steps in dietary intervention, starting with dietary advice, followed by modification of diet, offering dietary supplements, starting appetite stimulants, and if necessary, starting nutritional support.

Dietary advice

Some parents are already very knowledgeable about food, while other caregivers need help identifying which foods are appropriate for their child during treatment.

Modification of diet

Many different diets may be used during treatment: the neutropenic diet is usually used for neutropenic patients. A diet containing no concentrated sweets or added salt is usually used for patients on steroids (such as ALL patients during induction). A clear liquid diet may be prescribed when the patient is transitioned from NPO status to PO. A bland diet may be used when the patient has problems with nausea or vomiting or has gut issues. A mucositis diet is used during mucositis, and a graft-versus-host disease (GVHD) diet is used during gut GVHD. There are other diets that may be prescribed by a dietitian during treatment.

Dietary Supplements

Many dietary supplements are on the market but are not available in all hospitals and may be too expensive for patients to purchase. Some dietary supplements are milk-based (Muscle Milk), lactose-free (Pediasure, Ensure, Boost, etc.), or juice-based (Enlive). Dietary supplements come in a variety of

flavors, including vanilla, chocolate, banana, berry, and apple. They can be packaged in a bottle, box, or can or may come in the form of powder. Some dietary supplements may promote wound healing. During sickness, it is easier to drink than to eat, and dietary supplements contain balanced nutrition and are usually calorically dense. The disadvantage of dietary supplements is children usually refuse them because of the taste or aftertaste.

Modular supplement boosters can be in the form of protein (ProMod), carbohydrate and fat (Duocal), or just fat (Microlipid). Supplement boosters can be added to already prepared food.

Appetite Stimulants

Appetite stimulants are used if patients have poor PO intake due to poor appetite. In many hospitals, appetite stimulants are not available or commonly used. The prescription of an appetite stimulant will depend upon the decision of your doctor together with the dietitian.

The most commonly used appetite stimulant is cyproheptadine hydrochloride (brand name Periactin). The usual dosage is 0.25 mg/kg. It is a potent antihistamine and serotonin antagonist. High doses may cause drowsiness and impair the ability to perform activities requiring mental alertness or physical coordination and may cause dry mouth. Cyproheptadine is well tolerated and will improve the appetite of about 75% of children. It comes in pill form and liquid.

The next most commonly used appetite stimulant is a controlled substance. Dronabinol (brand name Marinol) is an antiemetic that also stimulates appetite. It is used for treatment of nausea and vomiting secondary to cancer chemotherapy in patients who have not responded to conventional antiemetics, as well as for treatment of anorexia associated with weight loss. Dronabinol has a high potential for abuse; antiemetic therapy availability should be limited to the current cycle of chemotherapy. May cause drowsiness, dizziness, vertigo, difficulty in concentrating, mood change, euphoria, detachment, depression, anxiety, paranoia, hallucinations, and nervousness. This appetite stimulant can be prescribed only by a medical doctor and is not available in some countries.

Megestrol acetate (brand name Megace) is a strong stimulant of appetite, but it has many side effects and should be used only as the last option. It is a synthetic progestin with antiestrogenic properties that disrupt the estrogen receptor cycle. Megestrol interferes with the normal estrogen cycle and results in a lower luteinizing hormone titer. It may also have a direct effect on the endometrium. Its exact mechanism of appetite stimulation has not been determined, but it is thought to be due in part to a direct effect on the hypothalamus. Megestrol acetate in pediatric oncology patients may lead to severe, symptomatic adrenal suppression.

There are many other appetite stimulants currently in research or in use. All appetite stimulants have to be prescribed by medical doctor, and patients have to be monitored for progress and side effects.

Nutrition Support

Many times, nothing works, and the patient needs to be started on nutritional support to ensure delivery of nutrients for appropriate growth and development. Delivery of nutrients into the gut is the preferred method of feeding when the gastrointestinal tract is working. For short-term support, a nasogastric or a nasojejunal tube can be used. For long-term support, a gastric or a gastrojejunal or jejunal tube is placed. The feeding schedule will be developed by a dietitian or by a medical doctor, depending on the tolerance of the formula, gut health, therapy, and age of patient. Many parents and older patients are scared of getting a tube placed and will prefer parenteral nutrition instead of enteral nutrition, which is tube feeding. Nasogastric feeding may be a little more uncomfortable, especially for older children, but the benefit of the enteral nutrition in contrast to parenteral nutrition is tremendous and, therefore, it should always be used when the gut is working. It is a natural way of delivering nutrients because it is using the gut. It is healthier for the liver and other organs, which are affected by digestion and absorption. Never scare children by telling them that if they don't eat, then a tube will be placed. Tube feeding should not be viewed as punishment, but as a part of treatment that is sometimes necessary.

The last option is parenteral nutrition. Parenteral nutrition is indicated when the gut cannot be used because of persistent vomiting, intractable diarrhea, GVHD of the gut, pneumatosis intestinalis, typhlitis, ileus, severe mucositis, or a postoperative procedure requiring prolonged NPO status. The prescription for parenteral nutrition is usually done by a medical doctor, pharmacist, or dietitian.

Prevention

In the end, I would like to mention a few things regarding diet after completion of treatment. As I pointed out previously, our main goal during treatment is necessary nutrition and nutrients. After treatment, the situation is different. The child should be encouraged and educated about a healthy diet. Usually, the whole family has to make those changes so the changes are lasting. Diet and exercise after treatment are extremely important to prevent or decrease the burden of long-term side effects. Children who have gone through cancer treatment are at high risk for heart disease, secondary cancer, osteoporosis, obesity, and many other medical conditions early in their adulthood. Therefore, it is extremely important that a child follows a healthy diet and exercise plan.

Recommendations for diet are:

- Body fat: Be as lean as possible within the healthy range. Healthy range for adults is having a body mass index between 19.5 and 24.5 kg/m². The recommendations are to be on the lower end of the range.
- Physical activity: Be physically active as part of everyday life.
- Foods and drinks that promote weight gain: Limit consumption of energy-dense foods (chips, candy, etc.), and avoid sugary drinks (soft drinks, Kool-Aid, punch, etc.)
- Plant foods: Eat mostly food of plant origin. Plant-derived food has many protective and beneficial properties for health. Even if complete vegetarianism is not possible, the majority of food consumed should be plant-based.
- Animal foods: Limit intake of red meat (beef, steak, hamburgers, etc.), and avoid processed meat (hotdogs, salami, lunch meat, etc.)
- Alcoholic drinks: Limit alcoholic drinks.
- Preservation, processing, preparation: Limit consumption of salt (table salt, all processed food, soy sauce, etc.). Avoid moldy cereals (grains) or pulses (legumes). Mold can be carcinogenic, so all molded food should be avoided if possible.
- Dietary supplements: Aim to meet nutritional needs through diet alone. There are some exceptions to this rule (calcium, vitamin D, and omega 3 fatty acids), but in general, by eating fruit and vegetables, you get much more benefit than by taking artificial vitamins.
- Breastfeeding: Breastfeeding can prevent some breast cancers. Mothers are encouraged to breastfeed as long as possible (2 years and beyond). Breastfeeding can also decrease the risk for children developing some cancers. Therefore children should be breastfed.

In conclusion, having a child who is seriously ill is a very stressful situation. It is very challenging to make a child eat during treatment. Every child is different and may eat differently or may have a much harder time eating at all. If the only thing you accomplish is a less stressful mealtime for a child who is going through treatment, then you have accomplished a lot.

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Resources:

Cure4Kids: <https://www.cure4kids.org>

Cure4Kids for kids: <http://www.cure4kids.org/kids>

St. Jude Children's Research Hospital:

<http://www.stjude.org/patientsandparents>

National Cancer Institute: <http://www.cancer.gov/cancertopics>

Centers for Disease Control and Prevention: <http://www.cdc.gov/cancer/>

Literature:

M. Winkler (2009). Lenna Frances Cooper Memorial Lecture. Lining with Enteral and Parenteral Nutrition: How Food and Eating Contribute to Quality of Life

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