



# Eat Sensibly During Cancer Treatment



# The Role of Nutrition During Cancer Treatment

The treatment of cancer may cause changes in how you eat and how your body reacts to food. Good nutrition during treatment is crucial for better outcomes but can be challenging to achieve, leading to malnutrition.

## Malnutrition Among Cancer Patients



40 – 70% of patients have  
**MALNUTRITION**



1 in 5 patients pass away due to  
malnutrition-related reasons

## Common Nutritional Problems Among Cancer Patients

**UNDERNOURISHED**

**WEIGHT LOSS**

**CACHEXIA**

### EFFECTS OF MALNUTRITION

- Weight loss.
- Increased risk of infection.
- Delayed treatment and recovery.
- Increased risk of complication.
- Shorter lifespan.
- Reduced quality of life.
- Reduced response towards therapy.
- Reduced treatment tolerance and compliance.

### BENEFITS OF GOOD NUTRITION

- Easier to maintain a healthy weight.
- Lower risk of infection.
- Faster healing and recovery.
- Optimised body defenses.
- Increased energy and strength for treatment.
- Improved response toward therapy.
- Better treatment compliance.
- Better tolerance towards side effects.

# Obtain Enough Nutrition from These Food Groups to Maximise the Benefits:

## Carbohydrates

Main source of energy for the body

e.g. rice, bread, pasta, cereal, potatoes

## Proteins

Rebuild muscle, repair injured and damaged tissue and fight infection.

e.g. chicken, fish, egg, tofu, lentils, lean meat.



## Fluids

For cell functions and to replace fluid loss due to treatment side effects

e.g. water, juice, soup, milk

## Fats (included in cooking)

Provide and store energy, insulate body and transport some vitamins.

Limit saturated fats and avoid trans fats. Choose unsaturated fats,

e.g. nuts and plant oil

## Vitamins and Minerals

Support body function and metabolism.

e.g. fruits, whole grains and vegetables.

Cancer patients undergoing treatment are usually recommended to maintain a **high-energy, high-protein diet**. This can be done by:

**1. Snacking:** Include 1 to 2 snacks in between meals. Keep snacks available at all times.

**Example of snacks:**

- Bread with butter
- Sandwich
- Soft bread with cheese
- Bun and roll
- Biscuits with cream
- Nuts and seeds
- Hard boiled/Scrambled egg/Omelette
- Plain cakes
- Pudding and custards
- Yogurt
- Milk or soy drinks
- Milkshakes
- Cream soup
- Steamed chicken bun/pau



**2. Add extra energy and protein into your food to boost your calorie and protein intake.**

**Here are some ingredients that can add extra calories into your food:**

- Soft margarine
- Salad dressing and mayonnaise
- Honey
- Cheese
- Milk powder
- Jam or marmalade
- Healthy cooking oils
- Peanut butter
- Banana/Mango

**Tips to add extra protein to your food:**

Type of protein source	Preparation method
Cheese	<ul style="list-style-type: none"> <li>• Melt on sandwiches, bread, omelette, muffins, hamburgers or eggs</li> <li>• Grate and add to soup, sauce, casserole or vegetables</li> </ul>
Milk or powdered milk	<ul style="list-style-type: none"> <li>• Mix with beverage/milkshake</li> <li>• Add during the preparation of hot cereal, pudding, gravy or soup</li> </ul>
Commercial nutritional supplement	<ul style="list-style-type: none"> <li>• Drink on its own, preferably 1 to 3 times a day depending on your appetite e.g. Ensure Gold/Nutren Fibre/ Supportan/Prosure</li> </ul>

Fish, poultry and meat	<ul style="list-style-type: none"> <li>• Steamed fish/chicken, minced meat</li> <li>• Add chopped, cooked meat or fish to soup, porridge or noodles (Avoid raw fish and undercooked meat/poultry. They may contain harmful bacteria and your treatment may increase your risk of infection.)</li> </ul>
Eggs	<ul style="list-style-type: none"> <li>• Add chopped, hard-boiled eggs to soups, dishes or sandwiches (Avoid raw/undercooked eggs. They may contain harmful bacteria and your treatment may increase your risk of infection.)</li> </ul>
Bean and legumes	<ul style="list-style-type: none"> <li>• Cook and use dried peas, beans or bean curd (tofu) in soups, porridge or noodles</li> </ul>

## Side Effects During Cancer Treatment

You may experience any of the side effects below while undergoing your treatment:



Loss of appetite



Nausea/Vomiting



Fatigue



Diarrhoea/  
Constipation



Change in  
taste or smell



Weak  
immune system



Dry/Sore mouth  
or sore throat



Unintended  
weight loss

# Tips to Overcome Side Effects from Treatments

## Loss of Appetite

Loss of appetite is the feeling of not wanting to eat much. It can be due to the illness itself, medication, or feelings of stress and fear.



- ✔ Eat 5 - 6 small meals instead of 3 large meals
- ✔ Drink when you don't want to eat (e.g. smoothie, milkshake, fruit juice, milk, soy milk)
- ✔ Consume easy-to-carry snacks
- ✔ Add extra calories and protein into your food
- ✔ Do light exercises and be physically active to stimulate appetite
- ✔ Eat your meal separately from your drinks

## Nausea and Vomiting

Nausea happens when you feel uneasy or sick in your stomach, sometimes leading to vomiting. Certain food smells may also trigger nausea and vomiting



- ✔ Eat 5 - 6 small meals instead of 3 large meals
- ✔ Eat soft, easy-to-digest and bland food
- ✔ Chew food slowly
- ✔ Suck on hard candies such as peppermints or lemon drops
- ✔ Wear loose and comfortable clothes
- ✔ Sit or lie with your head up for at least 1 hour after meals
- ✘ Avoid spicy, greasy or fried food and food with strong smells
- ✘ Avoid eating in a room that is too warm or has a strong smell
- ✘ Do not drink right before or after meals
- ✘ Do not skip meals and snacks

## Constipation

Constipation happens when you have fewer bowel movements. The stool becomes hard, dry, and tough to pass, leading to pain, bloating, or nausea. Medication, insufficient liquid intake, low fibre in your diet, or lack of physical activity may also cause constipation.



- ✓ Drink at least 8 cups of liquid per day (hot drinks may work better) unless contraindicated
- ✓ Eat more high-fibre food such as whole grains, vegetables and fruits
- ✓ Do light exercises (e.g. walking, stretching, doing house chores) and be physically active

## Diarrhoea

Diarrhoea is when you experience frequent, watery bowel movements, preventing your body from absorbing enough nutrients and water. It may happen due to infections or the use of antibiotics.



- ✓ Eat 5 - 6 small meals instead of 3 large meals
- ✓ Drink plenty of water throughout the day
- ✓ Eat food or drink liquids at room temperature
- ✓ Take high-sodium, high-potassium food and drinks, e.g. banana, electrolyte drink, soup
- ✓ Limit milk and dairy products that may worsen the symptoms (choose lactose-free products)
- ✗ Avoid high-fibre food
- ✗ Avoid greasy, spicy and overly sweet food
- ✗ Avoid overly sweet and caffeinated beverages
- ✗ Avoid carbonated drinks or foods that cause gas, e.g. legumes, broccoli and cauliflower



## Change in Taste or Smell

Food might be tasteless, and some food could taste bitter or metallic. Your sense of smell might also change. While these issues cannot always be avoided, they often improve after the treatment is finished.



- ✔ Serve food at room temperature
- ✔ Chew food longer for it to taste better
- ✔ Season and marinate food using spices, lemon or vinegar
- ✔ Use sugar-free lemon drops, peppermints or chewing gum
- ✔ Rinse your mouth with alcohol-free mouthwash or salt water before meals to clear the taste buds
- ✔ Use plastic utensils if you have a metallic taste in your mouth

## Changes in Digestive System

Some treatments may cause you to have an upset stomach. When this happens, you may want to:



- ✔ Choose lactose-free or low-lactose product
- ✔ Try milk substitutes, e.g. soy milk or almond milk
- ✔ Eat non-dairy calcium options such as edamame, spinach or calcium-fortified products



## Weak Immune System

Cancer and its treatments can impact the immune system, which is responsible for the body's defence. Individuals with cancer might face a higher risk of infections due to alterations in their immune system.



- ✓ Eat food that is thoroughly cooked
- ✓ Eat food served at room temperature within 2 hours
- ✓ Thaw frozen food using a microwave or chiller
- ✓ When eating canned food, make sure the can is in good condition (not dented or rusted)
- ✓ Choose freshly cooked food if eating out
- ✓ Practise personal hygiene, e.g. regular hand washing, bathing daily and rinsing your mouth
- ✗ Avoid raw food e.g. salad, ulam or raw Japanese food
- ✗ Avoid half-cooked food such as runny eggs and medium-cooked meat

## Sore Mouth/Sore Throat

A sore mouth or throat occurs when the lining of your mouth, lips, or throat is inflamed and in pain. This discomfort can make eating difficult and potentially lead to unintentional weight loss.



- ✓ Eat 5 - 6 small meals instead of 3 large meals
- ✓ Eat soft, moist and easy-to-chew food
- ✓ Cut food into small pieces
- ✓ Eat moist food with sauces, gravy or soup
- ✓ Cool hot food and drink liquids at room temperature
- ✓ Add proteins and calories into food, e.g. prepare omelettes with milk and butter or mix soup with protein powder
- ✓ Drink with straw
- ✓ Gargle or rinse your mouth after every meal and before sleep with alcohol-free mouthwash
- ✗ Avoid food that may hurt your mouth such as dry, hard, crunchy, salty, spicy, sour or hot food

## Dry Mouth

Dry mouth happens when there is less saliva than usual, making it challenging to talk, chew, and swallow. Treatment and certain medications may contribute to dry mouth.



- ✓ Sip water throughout the day
- ✓ Chew on chewing gums or suck on ice chips, hard candy, frozen fruits or popsicles to stimulate saliva production
- ✓ Eat tangy food such as mango, starfruit or orange to stimulate the saliva in the mouth
- ✓ Eat food that is soft and easy to swallow
- ✓ Eat moist food with sauces, gravy or soup
- ✓ Rinse your mouth regularly
- ✓ Apply lip balm
- ✓ Use a humidifier to moisten the air in your room
- ✗ Avoid food that may hurt your mouth such as dry, hard, crunchy, salty, spicy or sour food
- ✗ Avoid mouthwash that has alcohol

## Unintended Weight Loss

Weight loss can be caused either by cancer or the side effects of treatment, e.g. nausea and vomiting or by stress and anxiety. It is common for individuals going through cancer treatment to have weight loss.



- ✓ Maintain a consistent eating schedule
- ✓ Eat 5 - 6 small meals instead of 3 large meals
- ✓ Drink smoothies or milkshakes when you do not feel like eating
- ✓ Add proteins and calories into food, e.g. prepare omelettes with milk and butter or mix soup with protein powder



# Consult a Dietitian

This booklet should serve as a guideline only.  
For further matters on Nutrition, consult your Dietitian.

**General Line** : +603 7457 2823

**Diet Consultation Office** : Counselling Room, Health Screening Centre,  
Level 2, Hospital Picaso

**Email** : [dietitians.picaso@picasohospital.com](mailto:dietitians.picaso@picasohospital.com)

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HOSPITAL PICASO

PJ Integrated Centre  
for Advanced Surgery  
and Oncology



## HOSPITAL PICASO

No. 110, Jalan Professor Khoo Kay Kim,  
Seksyen 19, 46300 Petaling Jaya,  
Selangor Darul Ehsan, Malaysia

**Emergency Line : +603-7457 2999**

**General Line : +603-7457 2888**

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