

Cancer Care Nutrition Tutorial - Answers

Introduction

The following tutorial has been developed by the Dietitian and Nutritionist Clinical Education Network (DANCEN) in 2017 for tertiary students undertaking professional clinical placements with QLD Health services and is based on a tutorial originally created by QLD Health dietitians in Mackay.

- This tutorial can be completed individually or as a group, with supervisor/preceptor direction or independently. It is designed as a learning activity to stimulate thought and further enquiry into nutrition in cancer care.
- Reference to the tutorial answers is suggested after :
 - Attempting to complete the first part of the tutorial from what you already know
 - Clarifying these responses and/or researching the answers by referring to text books, uni notes, best practice guidelines, literature references, other professionals and/ or online educational and patient focussed websites.
- Discussion of your responses with your supervisor/preceptor is recommended to ensure you gain the maximum benefit from this activity.

Background and Definitions

1) What are the main characteristics of cancer cells? (List at least 5)

- **Uncontrolled proliferation**
- **Resistant to inhibitory signals from neighbouring cells**
- **Resistant to apoptosis (programmed cell death)**
- **Angiogenesis (proliferation of network of blood vessels)**
- **Evasion of immune system surveillance**
- **Invasive (sending out cells that can form new metastases)**
- **Abnormal Function**

2) Match the four subtypes of cancer with their definition:

Definitions: Merriam-Webster dictionary <https://www.merriam-webster.com/>.

Further information available from <https://medlineplus.gov/>

A. Carcinoma 4

B. Sarcoma 3

C. Leukaemia 1

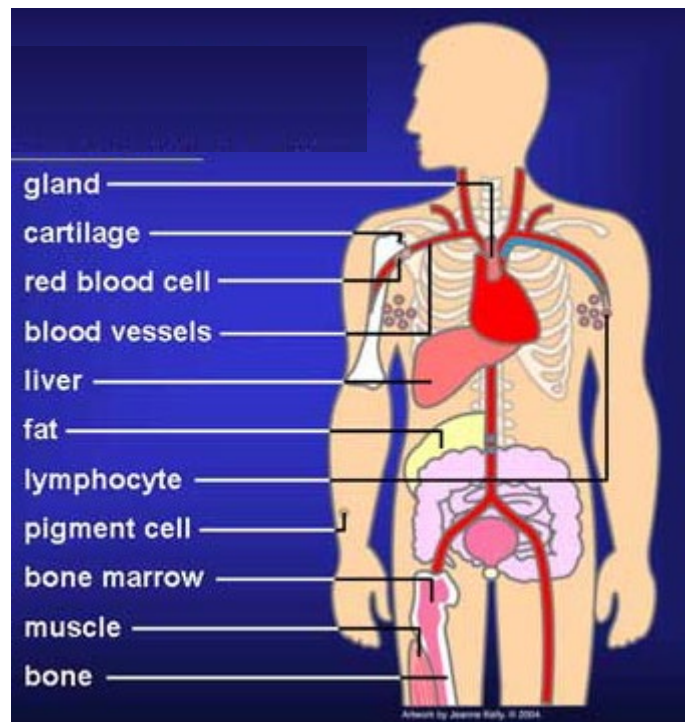
D. Lymphoma 2

Choose from:

1. An acute or chronic disease characterised by an abnormal increase in the number of white blood cells in the tissues and often in the blood
2. A usually malignant tumour of lymphoid tissue
3. A malignant tumour arising in tissue of mesodermal origin (as connective tissue, bone, cartilage, or striated muscle)
4. A malignant tumour of epithelial origin

3) Name the body part that these prefixes refer to by choosing from the list provided:

- Chondro-**Cartilage**.....
- Osteo-**Bone**.....
- Hemangio- ... **Blood Vessels**
- Lympho- **Lymphocyte**.....
- Melano-**Pigment Cell**...
- Myelo- **Bone Marrow**
- Erythro-**Red Blood Cell**
- Myo-**Muscle**
- Lipo-**Fat**.....
- Adeno-**Gland**.....
- Hepato-**Liver**.....



4) a) Define each level of the TNM Cancer staging terminology: (see useful references)

Primary Tumour Size (T)

TX	Primary tumour cannot be evaluated
T0	No evidence of primary tumour
T1,T2,T3,T4	Size/extent of tumour (T1 smallest, T4 largest)

Regional lymph nodes involvement (N)

NX	Regional lymph nodes cannot be evaluated
N0	No regional lymph node involvement
N1,N2,N3	Involvement of regional lymph nodes

Presence of distant metastasis (M)

MX	Distant metastasis cannot be evaluated
M0	No distant metastasis
M1	Distant metastasis

b) Describe the following cancer stages from the list created above:

T1N1M0 = small tumour size, with mild regional lymph node involvement but no metastasis

T4N3M1 = large tumour, significant regional lymph node involvement and distant metastasis

Health Professional Roles

5) What are some of the main features of the role of the Dietitian working with oncology patients? (List at least 4)

- Provide individualised nutrition advice to assist patients with managing nutrition impact symptoms of the cancer itself or side effects of treatment.
- Provide nutrition support to ensure patients meet nutritional requirements and maintain body weight before, during and after treatment.
- Provide balanced information to patients as required on the effects of complementary and alternative therapies relating to nutrition.
- Provide dietetic services to oncology inpatients and outpatients.
- Being able to work as part of a multidisciplinary team to maximise patient outcomes

6) List some aspects of roles of other Allied Health Professionals who would likely be involved in a multi-disciplinary cancer care team?

- **Social Worker** – financial issues, support for individual and family coming to terms with a new diagnosis or change in health status
- **Speech Pathologist** – mainly with head & neck patients, oro/pharyngeal assessment - swallow assessment, voice assessment, texture & fluid modification, laryngectomies
- **Psychologist** – anxiety & depression management
- **Occupational Therapist** – lymphoedema garments, home assessments, fatigue management and functional assessments
- **Cancer Care Co-ordinator** – help to organise appointments, liaise between teams/hospitals
- **Physiotherapist** – exercise advice and management of stiff painful joints, lymphoedema, mobility and balance

Nutrition Impact Symptoms

7) Suggest some possible strategies to manage the following nutrition impact symptoms related to cancer treatment?

- **Decreased appetite**
Small frequent meals and snacks, aim to eat every 2 hours, soft meals may be easier to eat, choose high protein and energy meals and drinks, light exercise may increase appetite, try frozen/easy to prepare meals if don't feel like cooking
- **Pain with chewing & swallowing**
Avoid spicy and acidic foods – e.g. vinegar, spices, salt, alcohol and fruit juice. Avoid dry rough crunchy foods, e.g. chips, crackers, toast. Try softer, smoother, moist food, use an alcohol free mouth wash, take pain relief medication as prescribed
- **Nausea & vomiting**
Take anti-emetics as prescribed, small, frequent meals, eat and drink slowly, try ginger containing food and drinks, try dry, cold or salty foods, sip cold clear fluids, avoid strong odours and cooking smells, if severe vomiting occurs there is a high risk of dehydration and IV fluids or oral hydration solutions may be required
- **Diarrhoea & constipation**
Diarrhoea – drink plenty of liquids, avoid large amounts of spicy and fatty foods, alcohol, caffeine, soft drinks and artificial sweeteners, take anti-diarrhoeal medication as prescribed, if severe there is a high risk of dehydration and IV fluids or oral hydration solutions may be required
Constipation - drink plenty of liquids, increase fibre gradually, light exercise, take laxative medication as prescribed, dietary modifications are unlikely to resolve medical causes of constipation
- **Dry mouth**
Soft moist meals, add sauces/ gravies to meals, avoid dry foods, frequent sips of fluids with meals, sugar free chewing gum or lollies to stimulate

saliva flow, try dry mouth toothpastes, mouthwashes, gels or artificial saliva sprays

8) Match the following technical terms for symptoms or conditions to their meanings:

A. Oesophagitis _____5_____

B. Mucositis _____4_____

C. Xerostomia _____2_____

D. Dysphagia _____6_____

E. Stomatitis _____3_____

F. Edentulous _____8_____

G. Neutropenia _____1_____

H. Trismus _____7_____

Choose from:

1. Low neutrophil blood count
2. Dry mouth
3. Inflammation of mucous lining of mouth
4. Inflammation and ulceration of GIT mucous membrane
5. Inflammation of the lining of the oesophagus
6. Difficulty swallowing
7. Restricted ability to open the mouth
8. No teeth

9) Briefly explain how the following side effects of cancer and treatment may impact on dietary intake. How would you help patients overcome these issues?

- **Taste Changes**

Taste changes can affect appetite and impact usual food choices and habits thereby reducing intake. Add flavour with salt, herbs, cheese, bacon, sugar, spices and lemon. Try sugar or honey and plastic utensils if food tastes metallic. Try new and different foods and recipes.

- **Fatigue**

Fatigue can reduce desire and ability to shop, cook and prepare meals and even to eat foods that require a lot of cutting up and chewing. Meals that are easy to prepare and eat can help, eg home delivered or frozen meals; soft, moist meals, eg mince, scrambled eggs, and nourishing drinks

- **Depression**

Depression can increase or decrease appetite, may accompany fatigue and affects motivation to perform activities of daily living. Strategies above may help as well as making meals more sociable and enjoyable (friends, music, favourite foods) while medications and referral to a psychologist can also help.

- **Pain**
Pain can have a similar influence on food intake as fatigue and depression by reducing appetite and affecting mood and motivation. Strategies listed above may make eating easier and place more focus on the meal while medications and therapies may help to manage the pain.

10) Which of the following cancers and treatments should be routinely screened for malnutrition?

Cancers of the head and neck

Lymphoma

Cancers of the GI tract

Cancers in the chest area

Leukaemia

Cancers in the pelvic region

Breast cancer

High nutritional risk chemotherapy regimens (Cisplatin, ECF, FOLFIRI)

Combined chemotherapy and radiation

All people with cancer should be routinely screened.

11) What are some of the possible consequences of inadequate nutrient intake for patients undergoing cancer treatment? (List at least 4)

- **Increase fatigue and delay recovery post treatment**
- **Decreased treatment dose and or treatment time (due to patient not coping) or unplanned treatment breaks**
- **Decreased immune function and susceptibility to infection**
- **Delayed wound healing**

- Loss of lean body mass and strength required for activities of daily living (ADLs)
- Increased incidence of complications
- Decreased quality of life
- Increased risk of mortality

Nutritional Management Goals

12) Briefly outline some of the nutritional goals for dietary management when cancer treatment has a curative intent and a palliative intent:

a) Curative intent (List at least 3)

- Maintain weight throughout surgery/treatment
- Prevent/minimise/correct malnutrition
- Symptom management (nausea, taste changes, poor appetite etc.)
- Prevent/manage fatigue and maintain energy levels

b) Palliative Intent (List at least 3)

- Patient centred, focussing on what the patient wants and feels like
- Preserve and optimise quality of life
- Symptom management (nausea etc.)
- Adequate hydration (prevent hospitalisation)
- Most therapeutic diets have low priority and may well be ceased
- Consider food for its enjoyment value and ability to help keep up energy levels

Case Study

Briefly outline how you would assess and treat this patient from initial referral to discharge.

MJ is a 64 year old male who has commenced chemotherapy for stage III-B bowel cancer. He has recently had a high anterior resection with a stoma.

MJ reports a current weight of 77kg with a loss of 3 kg in past month, height 1.78m. Usually his weight is stable at 80kg.

No changes in bowel habits reported. He reports feeling fatigued but can manage usual activities. He also reports he is eating less than usual for 6 weeks due to low appetite and the development of nausea in the past week.

Biochemistry: Protein 53 (NR 60-83), Albumin 28 (NR 35-50), other biochemistry results within normal range.

MJ is married with a supportive wife; he is a retired mechanic but still helps his son in law at his garage most days.

a) What is MJ's current and usual BMI?

BMI 24kg/m², usually 25kg/m²

b) What % weight has MJ lost?

3.7%

c) What clinical information do you need to find out for your assessment?

Medical and surgical history check for any other co-morbidities such as diabetes, cardiac conditions, food allergies. Find out length of colon remaining.

Treatment plan and intent

Nutrition impact symptoms, severity and timeframe.

d) What nutrients would you target when completing a diet history and what other factors would you consider?

Focus on protein and energy intake compared to requirements

Check for overall nutritional adequacy of current intake

Try to determine why recent weight loss has occurred from comparison of current and previous/usual intake

e) How would you determine nutritional status?

Complete a PG-SGA

f) In your assessment you note no evidence of muscle or fat store depletion. What is MJ's current nutritional status?

PG-SGA A-8 well nourished but at risk of malnutrition

g) What is your nutritional diagnosis?

Inadequate oral intake related to decreased appetite and nausea as evidenced by 3kg weight loss over past month (3.7% of body wt)

h) What is your plan?

- **Discuss the importance of maintaining nutritional adequacy to promote healing and maintain nutritional status during chemotherapy**
- **Explain the benefits of maintaining weight; associated with improved tolerance and response to treatment**
- **Encourage a HPHE diet to help maintain weight**
- **Strategies on management of nausea and low appetite**
- **Exercise, physical function, social aspects – think about involving other health professionals to assist this patient and his wife in managing the proposed treatment pathway, eg physio, OT, social worker, cancer care coordinator.**
- **Monitor weight, oral intake and symptoms**
- **Review at next cycle of chemotherapy**

j) Outline your plans for managing the decrease in appetite (what information would you need to find out and what general advice would you give?).

- **Check when appetite is poor; is it worse at certain times of the day?**
- **Check which foods are most acceptable and which are most off-putting/ least acceptable**
- **Small serves, small frequent meals if large serves affect appetite**
- **Recommend use of HPHE foods and fluids**
- **Consider use of supplement drinks if patient has difficulty reaching requirements on HPHE eating plan**
- **Treat food like medicine needed to get through treatment and aid in recovery**
- **Further strategies as per NEMO Loss of Appetite resource**