



南華醫院
HOSPITAL LAM WAH EE

A Guide for Post-Surgery Recovery



Surgical Wound Care



Physiotherapy Care



Nutrition Care



Contents

	Page
Foreword	1
Introduction	2
What is Post-Surgery Care?	
Surgical Wound Care	3
What is A Surgical Wound?	
Physiotherapy Care	8
Nutrition Care	13
Eat Well for Speedy Recovery	
Protein in Post-Surgery	
Tips on How to have Protein-Rich Meals	
Managing Poor Appetite	
Debunking Post-Surgery Food Myths	
Protein- Rich Recipes	
References	29

Foreword

Going through surgery can be an unfamiliar and daunting process. Post-surgery care is part of the healing and recovery process after. It is often known as the care given by the surgical team or nurses in the hospital immediately after surgery. However, post-surgery care also extends beyond hospital care to continue at home while the patient is still in recovery.

The main aim of post-surgery care is to promote healing, manage pain and prevent further complications. This includes providing care in important areas, such as wound management, nutrition support and physiotherapy care to promote an optimal and smooth recovery. This guidebook can help equip you and your loved ones with the right knowledge, preparation and optimum support for a smooth recovery journey.

Lastly, it is recommended to seek the advice of your doctor or other qualified healthcare professionals with any questions you may have regarding a medical condition or treatment.

Dato' Dr Yip Kok Thye (*DSPN, DJN*)
Medical Superintendent
Consultant General Surgeon



What is Post-Surgery Care?

Post-surgery care is the care received after undergoing surgery. It starts immediately after surgery, during the period of hospital admission and up till discharge. The type of care also depends on the type of surgery and length of the expected recovery period.

One of the main components of post-surgical care is surgical wound care. You will learn the proper steps of caring for the surgical site after surgery and while recovering at home. This can help reduce the risk of infections and most importantly, promote optimal wound healing. Besides that, physiotherapy care is also important to help manage any pain or discomfort and improve the range of motion so you can get back to your daily activities with ease. Last but not least, nutrition care supports your well-being and ensures your nutritional status is in tip-top shape by providing the essential nutrients your body needs to repair and heal after surgery.

During your recovery process, you may need physical help and emotional support from your loved ones, friends or even a caregiver. It is best to make early preparations so you do not need to worry after your surgery. It can be helpful to have someone around to help tend to your daily needs as you slowly resume your daily activities.



SURGICAL WOUND CARE

What is A Surgical Wound?

A surgical wound is an incision on the skin and underlying tissue due to surgery.

1. Wound Closure

Surgical incisions are closed with sutures, staples and skin tapes to provide support and stability to tissues and promote healing. A wound dressing is applied to provide a good seal, absorb discharge and prevent contact with clothing.

2. Change of Dressing

While first removal of dressing is at the surgeon's discretion, generally the original dressing will be kept for 48 to 72 hours. An undisturbed wound is important for wound healing. However, if the dressing starts leaking or new observations are made (swelling, pain, redness) the dressing should be removed for thorough examination.

3. Removal of Sutures / Clips

Wounds may be held closed by stitches or metal clips / staples, which will be removed within 1-2 weeks by the healthcare provider. Steri-Strips or wound closure tapes are used for extra support after sutures are removed.

4. Caring for Wound Closure

Stitched wound : Keep the wound clean and dry until the stitches are removed.

Staples / clips : Your staples will need to stay in for 10 days.

Glued wound : The glue will drop off by itself. This usually takes around 5 days.



Stitches



Staples



Glue

5. Problems with Wound Healing

A common complication is wound infection. Surgical site infection can occur within 30 days after a surgical procedure if no implant is left in place or within a year where there is a prosthetic implant. This may lead to wound separation, which can happen at single or multiple sites along the incision line.

6. Signs of Wound Infection

The first sign of wound infection may be a gush of fluids from the wound. Other signs and symptoms include wound reopening, increased wound drainage, presence of purulent drainage, fever and pain, warmth, redness and swelling of the incision site. These conditions require medical attention.

7. Management of wound infection

If you have a wound infection, you will need wound care treatment from a healthcare professional in the hospital. The management of wound infection includes:

- Suture removal
- Opening and draining of the wound
- Irrigation of the wound
- Debridement of dead tissue and removal of blood clots if present
- Packing of the wound



Staple Wound



Stitched Wound



*Subcuticular suture closure
for thyroid surgery wound*

Signs & Symptoms of Wound Infection



Wound Reopening



Increased Wound Drainage and Presence of Purulent Drainage



Warmth, Redness and Swelling of Incision Site



Fever



Pain

8. Surgical Incision Care at Home

An intact dressing post-surgery does not require change. Monitor for intactness and inspect the surrounding skin for redness, tenderness, skin breakdown and leakage of fluids.

- After 48 - 72 hours, you may shower if the suture line is closed with no drainage. However, the area should be dried well after the shower.
- Incision wounds at the chest and abdomen should be supported with a pillow or band, especially when changing position or coughing.
- Incision wounds should be kept clean and dry without prolonged exposure to moisture. The dressing has to be removed and changed if wet.
- Application of creams, ointments or topical antibiotics should be avoided on closed surgical incisions.
- The suture line needs to be protected from injury and sun exposure.
- Do not scratch or touch the surgical wound or dressing.
- As healing progresses, it is normal for some incisions to be itchy as a result of wound contraction or simply because of dry skin. Continuous follow up with your surgeon is crucial to ensure proper wound healing in a timely manner.



For personalised advice, book a session with us.
Patient Education Department +604-652 8990

PHYSIOTHERAPY CARE

Post-surgery Physiotherapy

Post-surgery physiotherapy is a crucial component of the rehabilitation process focusing on restoring your physical well-being and functionality after a surgical procedure. The primary goals of physiotherapy include rebuilding cardiorespiratory fitness, musculoskeletal fitness and neuromotor control fitness to facilitate a complete return to your normal daily activities.



Cardiorespiratory Fitness

- Physiotherapy will include exercises and activities to improve your cardiovascular and respiratory endurance.
- Aerobic exercises, such as walking or stationary cycling, may be incorporated to enhance your overall stamina.
- The physiotherapist will monitor your heart rate, breathing and oxygen levels during these activities to ensure a safe and effective recovery.



Musculoskeletal Fitness

- Strengthening exercises will be designed to target specific muscle groups, aiding in the restoration of strength and flexibility.
- Joint mobilization and stretching exercises may be included to enhance the range of motion and reduce stiffness.
- Progressive resistance training may be employed to gradually increase the intensity of your exercises as your strength improves.



Neuromotor Control Fitness

- Specialized exercises will focus on improving coordination, balance and proprioception.
- Neuromuscular re-education techniques may be implemented to enhance the communication between your nervous system and muscles.
- Balance exercises can help prevent falls and promote stability, especially if the surgery has affected your mobility.



Our experienced physiotherapists will conduct thorough assessments to understand your specific recovery needs. Based on the assessment findings, an individually tailored physiotherapy program will be prescribed, taking into consideration your unique circumstances and the type of surgery you underwent.

Throughout your recovery journey, our physiotherapy team will provide continuous support, guidance and encouragement. Regular follow-up assessments will be conducted to track progress and make necessary adjustments to the rehabilitation plan. We are committed to being by your side every step of the way, ensuring a comprehensive and successful road to recovery.

Remember, consistency and commitment to the prescribed physiotherapy program are key factors in achieving optimal post-surgery rehabilitation results. If you have any concerns or questions during the process, our physiotherapists are here to address them and provide the necessary assistance. Your well-being is our priority and we look forward to helping you regain full functional independence.

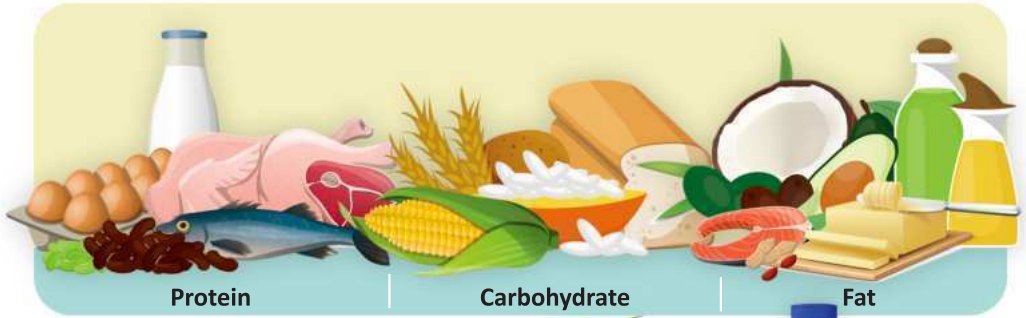


For personalised advice, book a session with us.
Rehabilitation Department +604-652 8983

NUTRITION CARE

Eat Well for Speedy Recovery

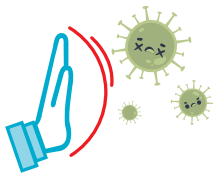
Good nutrition is important if you have just had surgery. As surgery stresses your body, you need more nutrients to cope with extra demand. Protein, carbohydrate and fat are the essential nutrients for the body to function well. Also, the suitable amount of vitamin, minerals (from fruits and vegetables) and fluids can make the recovery more efficient.



Importance of Post-Surgery Nutrition



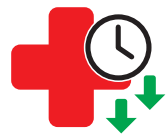
Promotes Wound Healing



Supports Immune Function



Muscle Preservation



Reduces Length of Hospital Stay

Protein in Post-Surgery

How Much Protein Do I Need After Surgery?

Most people consume far more protein than they need in a day. It is easy to get enough protein in a healthy diet. However, those who just had surgery need about 20% to 50% more protein daily (about 1.2 to 1.5g protein / kg body weight / day). In order to achieve the daily protein needs, sometimes there is a need to include oral nutrition supplements or protein supplements.

To calculate the protein requirement after surgery, multiply your weight in kg by the amount of protein you need to consume.

$$\text{Current or Ideal Body Weight (kg)} \times \text{Amount of protein (g / kg)} = \text{Protein Required (g)}$$

For example, if you weigh 65kg, you need at least 78 to 97.5g of protein each day.

Your Daily Protein Requirement:

Current Body Weight: _____ kg Ideal Body Weight: _____ kg

Daily Protein Requirement:

= _____ kg BW x _____ g protein / kg

= _____ g protein

Note: If you have other medical conditions such as diabetes or kidney disease, your dietary requirements need to be personalised. You are advised to consult a dietitian.

Protein in Different Foods



Protein can come from both animal and plant sources. Common protein sources are lean meat, poultry, fish, eggs, lentils, soy, nuts, legumes, tofu, tempeh, milk and milk products.

One Serving of Protein is ...



Chicken
1 palm-size



Lean Meat
2 matchboxes



Eggs
2 medium



Fish
1 tail (medium)



Tofu (Soft)
1.5 pieces



Tempeh
2 pieces



Legumes
1 cup



Dairy / Soy Milk
240 ml

Protein Content in Food Sources

Animal Protein	Plant Protein
Chicken, without skin, cooked (1 palm-size / 90g) = Protein: 16g	Tofu (1 piece / 152g) = Protein: 12g
Lean meat (Beef / Lamb / Pork), cooked (2 matchboxes / 90g) = Protein: 19g	Taukua (1 piece / 107g) = Protein: 12g
Fish, cooked (1 tail or 1 palm-size / 90g) = Protein: 17g	Tempeh (1 piece / 71g) = Protein: 11g
Prawn, cooked (1 medium / 10g) = Protein: 1g	Fucuk (1.5 pieces / 30g) = Protein: 7g
Egg (1 medium) = Protein: 6g	Lentils (1 cup / 150g) = Protein: 15g
Dairy Milk (1 glass / 240ml) = Protein: 8g	Nuts (Almonds, Cashews, Walnuts, Peanuts) (30g) = Protein: 4-7g
Cheese (1 piece / square) = Protein: 4g	Soy Milk (1 glass / 240ml) = Protein: 8 -10g

How Much Protein Are You Eating?

Use the information provided above to estimate how much protein you eat each day.

Meals	Protein Foods	Protein Amount (g)
<i>Breakfast</i>		
<i>Morning Tea</i>		
<i>Lunch</i>		
<i>Afternoon Tea</i>		
<i>Dinner</i>		
<i>Supper</i>		
Total		

Tips on How to have Protein-Rich Meals

The common Malaysian diet is centred on carbohydrates (e.g. rice, bihun, mee, kuey teow, etc.). People usually decide on the type of carbohydrates first as the base and then add the other dishes (chicken / fish / tofu) desired. For post-surgery patients, protein is always the priority for recovery. Here are some tips that can help you to consume protein-rich meals:

1. Understand the protein sources that are accessible to you.

Visit your local wet market or grocery shop that you normally go to and identify the protein foods sold there.



You need at least ... protein in a day

2. Plan your diet around your protein of choice.



a. Knowing how much protein you should consume is the first step to deciding what to eat on the day. **(Consult a dietitian to know how much protein you need.)**

b. Decide which type of protein you want to eat on that day. For example: chicken, egg and tofu for three main meals.



Steaming

Boiling

Poaching

Grilling



c. Be cautious when choosing recipes. Healthy cooking methods should be your priority.



Roasting / Baking

Stir-frying / Sauteing

Stewing / Braising

3. Plan ahead when eating out.

Look for the menu online to get an idea of what the restaurant offers.



Managing Poor Appetite

When you are discharged and at home after surgery, ask these questions to check if you are eating well.

- Are you eating lesser than before? (Unable to finish meals)
- Have you experienced unexplained weight loss?
- Do you have less appetite when eating your meals?

If you **tick any boxes** above, kindly pay more attention to the sections below:

Enrich Your Meals

Adding **extra calories** from certain foods can help to provide enough energy and nutrients without increasing your meal portion size. This allows you to get a nutritious meal even if you can only eat small quantities of food. By enriching your meals, it can help you maintain a good nutritional status and an optimal weight.

Milk

- Add 4 tablespoons of milk powder into your regular beverages such as chocolate malt, tea or coffee.
- Add full cream or fresh milk into oatmeal, gravies, red bean soup, pumpkin or tomato soup or scrambled eggs.



Butter, Vegetable Spreads

- Use 1-2 teaspoons of butter in baked or mashed potatoes, fried rice or noodles, naan, omelette, pasta dishes, waffles, vegetables and sandwiches.



Cooking Oil (Vegetable Oil, Sesame Oil, Olive Oil, etc.)

- Drizzle 1 tablespoon of oil onto steamed fish or meats, porridge or hot soups.
- Pan-fry protein foods such as fish, chicken, tofu, egg, tempeh or make vegetable tempura.



Honey or Jam

- Add honey in beverages, oats or on bread and crackers.
- Add jam to bread, crackers, yoghurt, cakes and salad dressings.
- Add ice cream in smoothies or use as a topping with desserts.



Note: If you have other medical conditions such as diabetes or kidney disease, your dietary requirements need to be personalised. You are advised to consult a dietitian.

Oral Nutritional Supplement (ONS)

Adding an ONS can help to provide adequate amount of nutrients in your diet such as energy, protein, fat, vitamins, minerals and immuno-nutrients (Arginine and Omega-3 Fatty Acids).

Generally, there are 3 main types of ONS to support recovery post-surgery:

Complete and Balanced Nutrition

• Standard Formula

E.g.: Nutren Optimum®, Ensure Gold®, Enercal Complete®, Enprovis Plus®, etc.

• Diabetes-specific Formula

E.g.: Glucerna®, Nutren GlucoBalance®, Diabetasol®, etc.



Please consult a dietitian to know which ONS suits you best.

Modular: Protein Powder

E.g.: Ceprolac®, Myotein®

Immunonutrition

E.g.: Neomune®, Oral Impact®

Ways to Use Oral Nutritional Supplement

Mix ONS with water to drink



The amount of ONS scoops and water depends on the product. Kindly refer to individual product instructions.

Add in other beverages (coffee / tea / fruit juice)



Mix ONS powder into a cup of other beverage as per the dietitian's instruction.

Add in hot meals or dishes

Top up your meals e.g.: soup / porridge / rice with protein powder as per the dietitian's instruction.



Add ONS into a smoothie

Add fruits into ONS and blend into a refreshing smoothie.



Note: If you have other medical conditions such as diabetes or kidney disease, your dietary requirements need to be personalised. You are advised to consult a dietitian.



Eating Tips for Poor Appetite

Tip 1: Eat Smaller Meals and Snacks Frequently

- Eat 5 to 6 small meals per day instead of 3 large meals.
- Keep snacks close to your chair, bed or in your pocket.

Tip 2: Eat Nutritious Food

- Choose nutrient-dense food (Example: whole grains, milk and dairy products, fish and seafood, unprocessed lean meat and skinless poultry, nuts and legumes).
- Choose high-calorie and high-protein foods to make every bite count, if you take small meals often.

Tip 3: Eat When Your Appetite Is Best

- Eat as much nutritious food as you can when your appetite is at its best. Do not limit or restrict food intake during that time.
- Eat what you feel like eating, even if you take the same food over and over again.

Tip 4: Avoid Drinking Liquids with Meal

- Avoid liquids (water or soup) with meal as it might cause the stomach to get full easily.
- If early satiety is an issue, try to avoid drinking liquids 30 minutes before meals and only drink after meals.

Tip 5: Consider Taking Oral Nutrition Supplement (ONS)







- Take complete and balanced oral nutrition supplement when food is not appealing or when you feel your appetite is low.
- Refer to the section above (Oral Nutrition Supplement, page 19).

Example:



Debunking Post-Surgery Food Myths

Myths or food beliefs may stand in the way of receiving optimal nutrition from foods that help the body heal and recover after surgery. Eating well and having the right foods in your meals is important to ensure your body receives all the nutrients it needs. Here are some common MYTHS debunked:

 MYTHS	 FACTS
<p>Do I need to avoid chicken, seafood or eggs after surgery?</p>	 <p>Foods such as chicken, fish, meat, eggs, tofu, tempeh, milk, dairy and soy products, are good sources of protein and must be fully cooked to reduce the risk of infections.</p>
<p>Are soups or meat broths more nutritious?</p>	 <p>Soups or meat broths can be a comforting, warm meal when preferred. However, it is recommended to eat all of the ingredients, especially protein foods in the soup or broth to get the nutrients you need.</p>
<p>Should I eat only porridge (congee) after surgery?</p>	 <p>Porridge can be a good option if you require a soft diet after surgery. Ensure that 1 bowl of porridge (450ml) contains at least 1 palm-sized protein food. If you are allowed to eat a normal diet, it is not necessary to stick to only porridge.</p>
<p>Should I avoid eating FEMALE chicken?</p>	 <p>Chicken meat is a good source of protein regardless of male or female variety. Eating enough protein is important during recovery.</p>
<p>Will drinking fish essence (pati ikan haruan) help with wound healing?</p>	 <p>Fish is one of the good sources of protein for wound healing. It is important to eat the main source of protein to obtain its nutrients. Do not restrict to a certain type of fish or essence.</p>

Protein-Rich Recipes

Food can be nutritious and protein-rich using the right ingredients. Here are some simple recipes you can try out at home to help boost your protein intake!

Protein Rich Pancakes



Prep : 10 mins

Cook : 15 mins

Serves : 1

Nutrition Information

One serving:

437 calories

16 g protein

39 g carbohydrates

16 g fat

Ingredients

- 1 banana
- 3 tbsp oats
- 2 large eggs
- 2 tbsp milk (dairy, soya, or almond milk)
- 1 tbs baking powder
- A pinch of cinnamon powder

Method

1. Mix banana, oats, eggs, milk, baking powder, and cinnamon in a blender for 1-2 mins until smooth.
2. Heat a drizzle of oil in a pan. Pour the batter on the pan. Cook for 1-2 minutes, until bubbles start to appear on the surface and the underside is golden. Flip over and cook for another minute until cooked through.
3. Transfer to a warmed oven and repeat with the remaining batter. Serve in stacks with nut butter and fruit of your choice.

Abbreviation: Tbsp = Tablespoon Tsp = Teaspoon

Stuffed Taukua (Taukua Sumbat)



Prep : 15 mins

Cook : 30 mins

Serves : 4

Nutrition Information

One serving:

124 calories

13 g protein

6 g carbohydrates

5 g fat

Ingredients

Stuffed Taukua

4 pieces firm taukua

2 tbsp corn starch

½ tbsp turmeric powder

Salt, pinch

1 cucumber, sliced into strips

1 carrot, sliced into strips

Spicy Peanut Sauce

2 tbsp peanut butter

1 tbsp chili garlic sauce

1 tbsp light soy sauce

1 tbsp coconut milk

½ tbsp rice vinegar

1 tbsp water

1 tsp sugar

Method

1. Mix corn starch, turmeric powder and salt to form a dry seasoning. Coat taukua with the dry seasoning and place in air-fryer.
2. Spray some cooking oil over taukua and air-fry for 25 minutes at 190 °C.
3. Mix vegetables in a bowl and set aside.
4. Mix sauce ingredients in a bowl and heat up over the stove for 30-60 seconds if desired.
5. Once taukua is cooked, allow to cool down and cut taukua in half diagonally. Make an opening inside of the taukua to stuff vegetables later on.
6. Stuff taukua with the vegetables and serve together with spicy peanut dipping sauce.

Abbreviation: Tbsp = Tablespoon Tsp = Teaspoon

Steamed Egg



Prep : 5 mins
Cook : 12 mins
Serves : 2

Nutrition Information

One serving:
153 calories
14 g protein
12.5 g fat

Ingredients

4 eggs, whole
1 ¼ - 1 ¾ cups water
1 tsp light soy sauce
1 tsp sesame oil
Salt, to taste
Spring onion, for garnish

Method

1. In a bowl, beat eggs together with a fork.
2. Add water, salt and mix with eggs. The amount of water added should be around 1½ to 2 times the volume of the eggs, depending on individual preference.
3. Pour egg mixture into a bowl and cover with aluminium foil to prevent water from dripping.
4. Place bowl into steamer and steam for 12 - 14 mins, depending on the depth of your bowl.
5. Once steamed, garnish with soy sauce, sesame oil and spring onions. Enjoy!

Masala Vadai



Prep : 40 mins

Cook : 25 mins

Serves : 3 - 4

Nutrition Information

One serving:

192 calories

11 g protein

36 g carbohydrates

7 g fat

Ingredients

1 cup lentils, soaked 2 hrs in water

½ to ¾ tsp salt

1 inch cinnamon

1 to 2 dried red chilli

¾ tsp fennel seeds

¾ tsp cumin seeds

1 medium red onion

1 cup mint leaves

1 sprig curry leaves

1 ¼ tsp garlic and ginger paste

Oil (for frying)

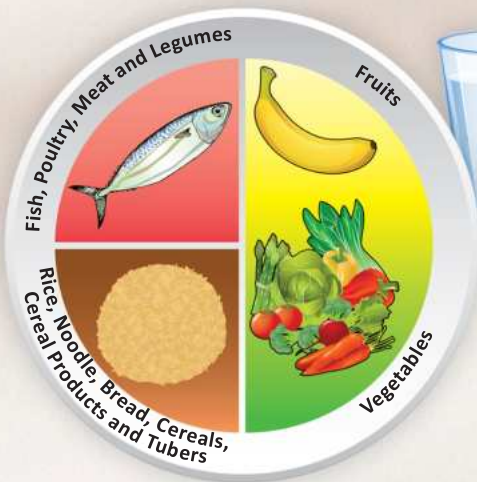
Method

1. First, blend the cinnamon, dried chilli, fennel seeds, cumin seeds into a coarse masala powder. Set aside. Next, blend the lentils and salt into a coarse mixture.
2. Chop mint leaves, curry leaves and onion into fine pieces and add into blended lentils. Next, add the masala powder, garlic and ginger paste.
3. Take a handful of dough, roll into a ball and flatten it.
4. Heat up oil for deep-frying. Once oil is hot enough, slide each piece of masala vadai into the oil and fry for 2-3 mins on each side until golden brown.
5. An optional method is to use the air-fryer. Preheat air-fryer for 15 minutes at 180°C. Brush the masala vadai with some oil before air-frying for 10 minutes. Turn them over and air-fry for another 6-7 mins.

Abbreviation: Tbsp = Tablespoon Tsp = Teaspoon

Notes

1. Eat an adequate amount of protein for better recovery. Your daily protein requirement is _____ g.
2. Eat a balanced diet at every meal. Eat the protein food first, followed by carbohydrates and vegetables and fruits.
3. Small and frequent meals are encouraged when appetite is poor.
4. Take ONS to supplement the calorie and protein intake.
5. Ensure adequate hydration: _____ litre / day.
6. Consult a dietitian at Hospital Lam Wah Ee if you have any nutrition-related concerns.



A balanced diet fulfils all of a person's nutritional needs. Practise **#SukuSukuSeparuh** while enjoying your meals.



For personalised advice, book a session with us.
Dietetics & Nutrition Department +604-652 8989



Notes

Information furnished by:

Patient Education Department, Hospital Lam Wah Ee
Rehabilitation Department, Hospital Lam Wah Ee
Dietetics & Nutrition Department, Hospital Lam Wah Ee


References:

Nutrition Care

1. Hirsch KR, Wolfe RR, Ferrando AA. Pre- and Post-Surgical Nutrition for Preservation of Muscle Mass, Strength, and Functionality following Orthopedic Surgery. *Nutrients*. 2021 May 15;13(5):1675. doi:10.3390/nu13051675
2. Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, et al. Espen Practical Guideline: Clinical Nutrition in Surgery. *Clin Nutr ESPEN*. 2021 Mar 18;40(7):4745–61. doi:10.1016/j.clnu.2021.03.031
3. West Suffolk NHS Foundation Trust. *Patient Information: Nutrition for Recovery*. Bury, West Suffolk, Suffolk: Nutrition and Dietetics, West Suffolk Hospital; 2021.
4. Ghaly P, Iliopoulos J, Ahmad M. The Role of Nutrition in Wound Healing: An Overview. *Br J Nurs*. 2021 Mar 11;30(5). doi:10.12968/bjon.2021.30.5.s38
5. Nair HKR. *Wound Care Made Easy*. 1st Edition ed. Seri Kembangan, Selangor: Uniquelink dot print Sdn Bhd; 2019.

Wound Care

1. Bryant RA, Nix DH. *Acute and Chronic Wounds: Current Management Concepts*. 5th ed. Elsevier; 2016.



www.hlwe.com.my

(For Internal Circulation Only)