The Art & Science of Dietary Approaches in Managing Cardiovascular Diseases

Mary Easaw
The Art & Science of Dietary Approaches in Managing Cardiovascular Diseases
Nutrition Education in IJN

Mode of Referral

✓ Available to patients upon referral by Physicians
✓ Automatic referrals for post angiogram with CAD findings, CABG & patients on warfarin therapy (as per Clinical pathways)

Education Sessions:

✓ Individual & group sessions
✓ Dietitians are multi-lingual to cater to patients’ language preference
Nutrition Education:  
Cardiac Rehab Phase 1  
for Non Surgical

Inpatients :  Post post angiogram with CAD findings
Sessions :  Group or individual
About 50% of our patients are with diabetes

Nutrition education group
- **Non- DM**: Focus on lipid lowering diet and weight control
  - E.g low cholesterol, low fat and trans fat, fibre, sodium intake & role of functional foods
- **DM**: Focus on identifying & counting carbohydrates, self-monitoring of blood glucose, food records & meal planning
Nutrition Education
Cardiac Rehab Phase 1 (surgical patients)

Inpatients: Post CABG education - Individual sessions

- **Poor appetite**: Focus on increasing calories & protein via oral intake

- **Good appetite**: Focus on disease specific diets e.g. lipid lowering, DM etc.
Nutrition Education
Cardiac Rehab Phase 2

Outpatient

- Group education once a month
- Schedule arranged by Physiotherapy Department for the whole CR Phase 2
- Focus on practical aspects of heart healthy diet e.g. cooking methods, eating out choices, reading food labels
Looks Familiar
….. Patient Self Management
Self Management

• Self-management is what patients do every day, where they decide what to eat, whether to or not to exercise, to take or not to take their medications

• So the question becomes whether or not the choices made will improve their health-related behaviors & therefore lead them to improve their clinical or nutritional outcomes.

Self Management of Malaysian patients

• Malay patients – polite, obliging, calm but may not ........

• Chinese patients – value for money, whether beneficial to their lives, debates however......

• Indian patients – argue as to why it cannot be done, pride, strong willed, need too be.....

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Objectives for Nutrition Education for Cardiac Rehab Phase 2

1. Decrease total cholesterol & fat intake
2. Increase fiber
3. Balance the salt
4. Include functional foods
5. Read & understand food labels

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Science & Art

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## Test your knowledge

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Coconut milk (santan) has cholesterol.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Foods such as oats and soy protein can reduce my cholesterol level.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sugars found in local cakes and desserts can increase my triglycerides levels.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Eating fried foods frequently can increase my cholesterol level.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>One teaspoon of margarine has the same amount of saturated fat as one teaspoon of butter.</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>To reduce your blood cholesterol level it is important to eat less saturated fat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Test your knowledge

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>A good fat ratio for heart health is by mixing 1 part of palm oil with 2 parts of corn oil.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Eating five servings or more of fruits and vegetables every day is good for a healthy heart.</td>
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</tr>
<tr>
<td>9</td>
<td>Cutting on bakery products such as cakes, biscuits can reduce trans-fat in your diet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Drinking four glasses of red wine a day is good for your heart.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Cooking with small amounts of unsaturated vegetable oils can keep your heart healthy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Saturated fats are usually liquid at room temperature</td>
<td></td>
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</tbody>
</table>
What Is Cholesterol?

Bad Cholesterol

Good Cholesterol

Diagram showing differences between normal blood flow and abnormal blood flow due to plaque build-up in arteries.
Where Does Cholesterol Come From?

2 sources

Mostly from liver

Directly from food
Dietary Cholesterol

Dietary cholesterol is only found in animal products.
All plant products are cholesterol-free.

Main Sources:
Cholesterol Content

Recommendations

200mg cholesterol/day - if you have high CAD risk
300mg cholesterol/day – for people with normal lipid profile

Normal Egg (50g) = 65 kcal
Protein = 6 g
Cholesterol = 213 mg

Low cholesterol Egg (50g) = 65 kcal
Protein = 6 g
Cholesterol = 160 mg
Vitamin E = 0.5 mg
Omega 3 = 35 mg
Selenium = 13 mcg
Types of Fats

FATS
30% of total calories

Saturated (SFA)
10% of total calories
↑ TC, LDL, TG
- Coconut milk
- Palm oil
- Butter, ghee
- Animal fats

Unsaturated
↓ TC, LDL, TG

Polyunsaturated (PUFA)
10% of total calories
- Corn oil
- Sunflower oil
- Soya oil
- Soft margarine

Monounsaturated (MUFA)
10% of total calories
- Olive oil
- Peanut oil
- Canola oil
- Soft margarine
The Blending Of Oil

1 Cup of Palm Oil

+ 2 Cups of PUFA Oil

Good Ratio of Fatty Acid!
Keeping the oil safe

Discard oil after frying the food twice
How to Reduce My Cholesterol

**CHOLESTEROL**

- [Image of crab and shrimp]
- [Image of boiled egg]
- [Image of clams]

**FAT INTAKE**

- [Image of chicken]
- [Image of low-fat milk]
- [Image of cooking without butter]

Tips for reducing cholesterol and fat intake:

- Choose low-fat milk instead of full-fat milk.
- Use cooking methods such as steaming, grilling, and baking instead of frying.
- Limit consumption of high-fat foods such as crab and shrimp.
Low Fat Cooking Methods

- Steamed
- Boiled
- Baked
- Roast
- Stir fry
- Shallow fat frying
Grilled Fish

Fried Fish

Steamed Fish
Malay/Indonesian: Common Foods

- Masak lemak
- Goreng
- Gulai
- Sup ekor
- Rojak
- Biryani
Malay/Indonesian: Healthier Options

- Assam rebus/pedas
- Sup ayam/ikan
- Ikan Masak Pindang
- Ikan/ayam Bakar
- Ulam - ulam
Chinese: Common foods

- Deep fried chicken/fish
- Peking duck
- Fried dim sum
- Fried noodles
- Kiam Chye
- Chinese Sausage
- Bak kut teh
Chinese: Healthy Choices

Clear Soups
Stir fried vegetables
Steamed chicken/fish
Baked prawns
Braised meats
Indian: Common Foods

- Curries with coconut milk (korma)
- Ghee based – Biryani, ghee rice
- Peas Pullao - Oily
- Fried breads - puris, Papaddums
- Snacks – vadai, samoosa
- Sweets: laddu, Jalebi, halwa
Indian: Healthier Choices

- Raita – veg in yogurt
- Grilled fish (Tikka)
- Grilled chicken (Tandoori)
- Breads: Chappatis/Thosai/Iddlis
- Dhal
- Plain curries with yogurt/low fat milk
Banana Leaf Model

Make Sure that the Banana leaf can be seen
East Malaysian: Common foods

- Sarawak Laksa: prawns & coconut milk
- Tuak: Fermented rice wine
- Sarawak Kon Lo Mee- dry noodles
- Hinompuka: steam tapioca with grated coconut
East Malaysian: Healthier Options

- Fish umai
- Midin Masak Belacan
- Ayam Pansuh
- Ikan Tilapia masak Terung Assam
- Tapioca leaves
Eating Out Choices

Nasi lemak large (special)
Calorie: 750kcal
Fat: 35g

Nasi lemak small (pack)
Calorie: 389kcal
Fat: 13g

Roti canai
Calorie: 300kcal
Fat: 11g

Tosai
Calorie: 147kcal
Fat: 2g

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Eating Out Choices

Double meat burger
Calorie: 538 kcal
Fat: 26 g

Single meat burger
Calorie: 258 kcal
Fat: 8 g

Char Keow Teow
Calorie: 744 kcal
Fat: 38 g

Mee Hun Soup
Calorie: 150 kcal
Fat: 5 g
Increase fiber intake

- **Soluble fiber:**
  - Oats, oat bran, barley, fruits, vegetables

- **Insoluble fiber:**
  - Edible skin of fruits & vegetables, whole wheat, wheat bran, beans

- Diets high in total (25 - 30g) & soluble fiber (7 - 13g), can further reduce total cholesterol by 2 - 3% & LDL (bad) up to 7%.

(Source: American Dietetic Association, Evidence Analysis Library, 2011).
Fiber recommendations

- 2 - 3 servings of vegetables daily
- 2 - 3 servings of fruits daily
- Select wholegrains regularly (e.g. oats, wholemeal bread)
- Include legumes as protein sources in meals
Increase My Whole Grain Intake

Whole Wheat Noodles/ Pasta

Oats/ Muesli

Whole Grain Breakfast Cereal

Whole Meal Bread

Whole Meal Crackers

Brown Rice
1 serving of vegetable

or

1/2 cup cooked vegetables

1 cup (200ml) raw vegetables
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1 Photo = 1 Serving Carbohydrate

- Papaya (1 Slice)
- Orange (1 Medium)
- Apple (1 Medium)
- Banana (1 Small)
- Persimmon (1/2 Medium)
- Dragon Fruit (1/2 Medium)
- Guava (1/2 Medium)
- Mango (1/2 Small)
Limit the salt

TARGET?
• ~ 1 teaspoon of salt per day

HOW?
• Excessive salt intake increases blood pressure
• Limit added salt
• Avoid processed food
• Use natural flavoring
• Incorporate the DASH Diet
DASH YOUR PLATE

The DASH diet stands for Dietary Approaches to Stop Hypertension. This plan includes foods to lower blood pressure, cholesterol and blood glucose.

- Eat at least 2 cups of vegetables everyday
- Select only lean protein and trim excess fat
- Choose wholegrain daily

Take low fat or fat free dairy product 2 – 3 times daily
Eat 2 – 3 servings of fruits daily
Nuts, seeds and legumes in moderation

Note: DASH Diet is low in fat. Try using half of the salt in recipe. Read food labels and look for low fat, low salt and low sugar food products

START DASH-ING YOUR DIET NOW!!!

For any enquiry, please contact
OPD Diet Consultation Clinic: +603 2600 6596
Use Natural Flavorings

- Spices (curry powder, turmeric)
- Garlic, onion, ginger
- Fresh / dried chili
- Spring onion, coriander
- Pepper
- Lime / lemon juice
Functional Foods

Have a potentially beneficial effect on health when consumed as part of a varied diet on a regular basis and at effective levels.

- Beta Glucan
- Plant Sterol
- Soy Protein
- Nuts
Functional Foods Cooking book
Beta Glucan

- is a soluble fiber
- naturally found in cell walls of plants such as oats and barley

**HEALTH BENEFITS**

- Lowers blood cholesterol level
- Reduces risk of coronary heart disease

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Dietetics & Food Services Department does not endorse any brands
Products with Beta Glucan

Dietetics & Food Services Department does not endorse any brands
WAYS TO INCORPORATE INTO YOUR DIET

Make thick dhal gravy with added oats.

Sprinkle oat bran on cereals or salads

Add blended oats into tosai, idli, uppuma & roti jala
Plant sterols & Stanols

Naturally occurring part of all plants
Mainly found in vegetable oils
Smaller amounts in nuts, legumes, grains, cereals & leaves

**HEALTH BENEFITS**

- Block the absorption of cholesterol in the small intestine
- Consume 2-3g lowers:
  - total cholesterol by 4 - 11%
  - low density cholesterol (LDL) by 7 - 15%
How much to consume?

2 cups/day (2-3 g plant sterol)

Dietetics & Food Services Department does not endorse any brands
Soy protein

Protein found in soybeans.

**HEALTH BENEFITS**

25 gram per day as a part of a low saturated fat and low cholesterol diet may reduce the risk of heart disease.

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How much is 25 g of Soy protein

5 glasses of soyamilk

1 cup tofu or 1 medium block

6 pieces of tempeh

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How to incorporate soy protein in the daily diet

Tofu with broccoli and brown rice
How to incorporate soy protein in the daily diet

Green bean porridge with soy milk

Mix vegetable with tofu

Soy Shake with Strawberry

Tauhu cutlets

Tauhu sumbat

Grilled tempeh
Nuts

Popular varieties of nuts are almonds, walnuts, pecan, cashew, hazelnuts, pistachio and peanuts.

**HEALTH BENEFITS**

High in unsaturated fat

Good sources of protein, dietary fiber, vitamins & minerals.

Eat **30 grams per day** may reduce the risk of coronary heart disease.

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How much to consume?

✓ Nuts are *high in calories*.
✓ Eat them in small amount.
✓ Choose *unsalted* or *without honey coated* nuts.

30 gram
What's on a food label?

**Date Marking**
This is the 'Use By', 'Sell By' and 'Best Use Before' date. It gives the date by which the food should be eaten.

**Product Name**
Usually beside the brand name. Tells you what the food is.

**Net Weight**
This gives the actual weight of the food excluding the packaging. For canned food packed in liquid, the net weight is the weight of the drained food.

**Ingredient List**
This shows all the ingredients that make up the product. The ingredients are listed in descending order by weight.

**Nutrition Information**
This panel shows the nutrients found in one serving or in 100 g / 100 ml of the food.

**Usage Instructions**
These are instructions for storing or using the product.

**Manufacturer's Details**
Every label includes the name and address of the manufacturer, importer or distributor.
60% of this product contains fat

Fat (butter, cheese, hydrogenated oils, cream) the main component of this product.
<table>
<thead>
<tr>
<th></th>
<th>BREAD A</th>
<th></th>
<th>BREAD B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per serving</td>
<td>Per 100g</td>
<td>Per serving</td>
<td>Per 100g</td>
</tr>
<tr>
<td>Energy (kcal)</td>
<td>103</td>
<td>294</td>
<td>144</td>
<td>240</td>
</tr>
<tr>
<td>Protein(g)</td>
<td>3.9</td>
<td>11.1</td>
<td>5.6</td>
<td>9.3</td>
</tr>
<tr>
<td>Fat(g)</td>
<td>1.5</td>
<td>4.1</td>
<td>1.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Saturated Fat(g)</td>
<td>0.7</td>
<td>2</td>
<td>0.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Cholesterol(mg)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Carbohydrate(mg)</td>
<td>19.9</td>
<td>56.7</td>
<td>2.7</td>
<td>45</td>
</tr>
<tr>
<td>Dietary fiber(g)</td>
<td>2.6</td>
<td>7.4</td>
<td>3.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Sodium(mg)</td>
<td>49</td>
<td>140</td>
<td>86</td>
<td>143</td>
</tr>
</tbody>
</table>

Serving Size: 1 slice of bread

Serving Size: 2 slices of bread

Use the “Per 100g” column in the Nutritional Panel
It would be difficult to compare the nutritional value of these two breads by looking at the ‘per serving’ column because the serving sizes differ. However, using the ‘per 100 g’ column, we can see that Bread A is higher in dietary fibre (7.4 g compared to 5.7 g for Bread B).
ALCOHOL
Each of this is one standard drink

4 % Alcohol

40 % Alcohol

10% Alcohol

BEER
12 oz.

SPIRITS
1 1/2 oz.

WINE
5 oz.

Men: 2 standard drinks per day
Women: 1 standard drink per day
Summary

• Nutrition education should be tailored to patients’ education level
• Nutrition education should be targeted to overcome the perceived barriers
• Patients should be taught the ‘know how’ to make the changes in their diet
• Nutrition education should be taught by the dietitian