

# PROBIOTICS

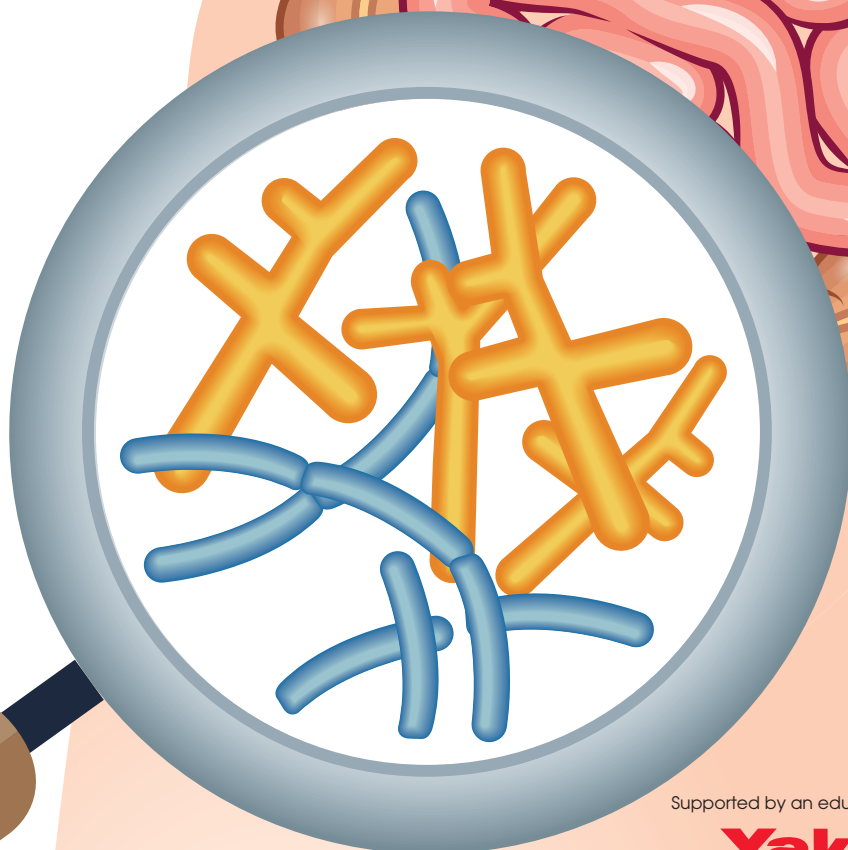
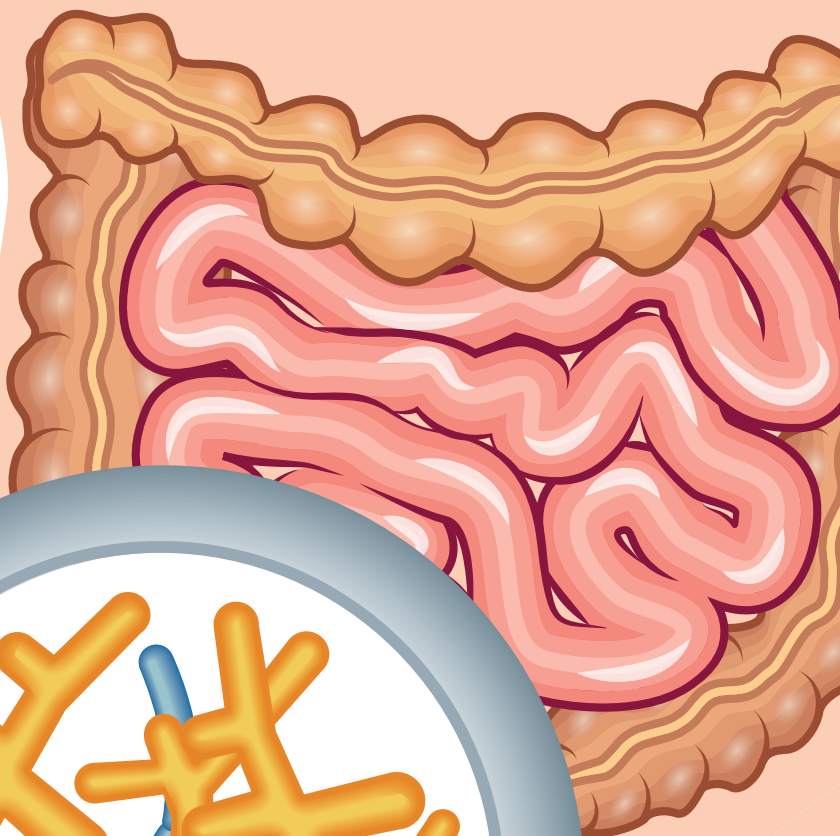
THE FRIENDLY GUT BACTERIA FOR YOUR HEALTH

Published by



Nutrition Society of Malaysia

**PROBIOTICS**  
EDUCATION PROGRAMME



Supported by an educational grant from

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## Chairman's message



# Gut health matters

Our gut plays a vital role in our health. Besides digestion, the gut is also a major part of the immune system. However, many of us tend to neglect our gut health until we repeatedly experience gut-related problems like diarrhoea, constipation and irritable bowel syndrome. Although they may not be life-threatening, having to deal with them on a regular basis would interrupt one's daily life.

It is actually rather easy to take care of your gut health. You can minimise your risk of developing digestive problems by leading an active lifestyle including having a balanced and varied diet. These help to ensure a balanced gut microbiota. One specific dietary factor, probiotics, have been shown to be an excellent way to help maintain this balance.

To provide consumers with a better understanding of the importance of a healthy gut microbiota and the role that dietary factors, especially probiotics can play in this regard, the Nutrition Society of Malaysia (NSM) has initiated the Probiotics Education Programme (PEP). Activities in the PEP include publication of various educational materials and setting up a dedicated website <http://nutriweb.org.my/probiotics/>. This booklet is one of the main educational materials published under the PEP.

Take care of your gut and it will take care of your health!

## Dr Tee E Siong

Chairman of NSM PEP Expert Group  
President of Nutrition Society of Malaysia

## NSM Probiotics Education Programme Expert Group 2018

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# Your Gut Health, Why It Matters?

The digestive system is made of the gastrointestinal tract (see picture below) also commonly known as the GI tract or gut. It comprises the mouth, oesophagus, stomach, intestines (small and large) and anus. Good gut health is central to good overall health. The main function of the gut is to aid in digestion of food. It also plays a major role in your immune system.

## DIGESTION OF FOOD

Digest food to release energy and nutrients, the latter are absorbed for body functions.

Eliminates unused waste materials after digestion.

## IMMUNE SYSTEM

Forms 80% of the immune system.

Peyer's patches (specialised immune cells) found on the walls of the small intestine identify harmful pathogens (bacteria) within the gut and assist in fighting the harmful substances by triggering formation of antibodies.

## Did you know?

The gut is home to a diverse community of microorganisms (called gut microbiota) which plays an important role in helping your digestive system function efficiently in its job.

Better  
gut  
health = Better  
overall  
health

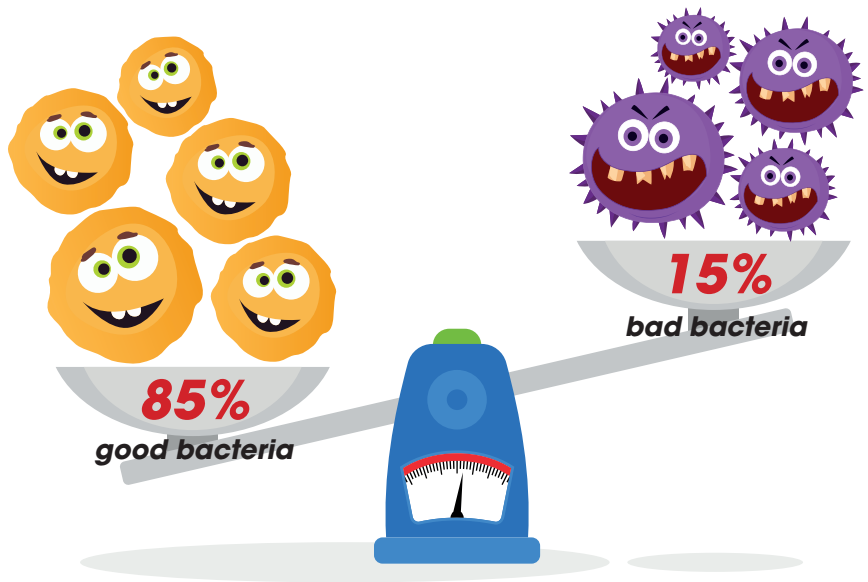
Poor gut health is linked to common digestive problems like heartburn, constipation, indigestion, irritable bowel syndrome

# What Is Gut Microbiota?

Gut microbiota refers to the entire 'population' of microorganisms living in your digestive system, which includes both 'good' and 'bad' bacteria. There is an estimated 100 trillion microorganisms, which includes about 1,000 different types or species of bacteria.

The good bacteria live in harmony with us and provide us with various health benefits. A healthy digestive system (gut) should have a healthy balance estimated around 85% of good bacteria and 15% bad bacteria.

When this balance is disrupted, the 'bad' bacteria can cause digestive disorders (e.g. constipation, diarrhoea or irritable bowel syndrome (IBS) and other health problems.



***A healthy bacteria balance means that the good bacteria overpower the bad bacteria***

*Trivia...*

Gut microbiota outnumber our body cells -  
**10 bacterial cells**  
to every human cell

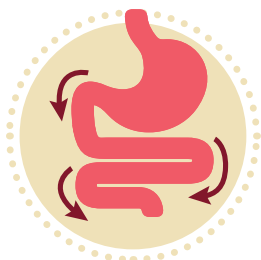
Total weight of gut microbiota up to  
**1 to 2 kg**



# Importance of A Balanced Gut Microbiota

## A balanced gut microbiota

Helps you maintain a healthy gut, which is important to:



*ensure proper gut movement and digestive function*



*produce certain vitamins (eg Vitamins B12 and K)*



*breakdown some food components that the body is not able to digest, such as dietary fibre*

*break down potentially toxic food compounds or block pathogenic compounds from entering the body*



*help strengthen immune system and maintain overall health*



## Imbalanced gut microbiota (dysbiosis)

Insufficient 'good' bacteria to prevent the 'bad' bacteria from causing harm to the body, resulting in:



*diarrhoea*



*constipation*



*change in bowel habit*



*excessive bloating & burping*



*abdominal discomfort*



*excessive fatigue / tiredness*



*lack of concentration*

**Caution!** These are non-specific symptoms that may not necessarily be caused by dysbiosis. There are many other health problems that may cause them. If in doubt, do check with your doctor.

# Factors that Affect the Composition and Numbers of Gut Microbiota

The composition and quantity of gut microbiota are influenced by several factors. These include:

## (Factors that promote gut microbiota)



- **Mode of delivery: vaginal**  
(provides initial seeding of gut microbiota)
- **Infant feeding: breastmilk**  
(helps initial seeding of gut microbiota)
- **Introduce toddlers to healthy complementary foods**
- **Consumption of balanced and varied diet**
- **Physically active lifestyle**

## (Factors that disrupt gut microbiota)



- **Mode of delivery: caesarean**  
(misses out on initial seeding of gut microbiota)
- **Infant feeding: infant formula**  
(misses out on initial seeding of gut microbiota)
- **Prolonged use of antibiotics**
- **Excessive alcohol**
- **Smoking**
- **Excessive stress**

Dietary factors play an important role in promoting the growth of good bacteria thereby improving the balance of gut microbiota.



**HEALTHY DIET.** Balanced and varied diet which is high in fibre.



### PROBIOTIC-RICH FOODS.

Foods containing good bacteria that are also known as probiotics. (refer next chapter for details).



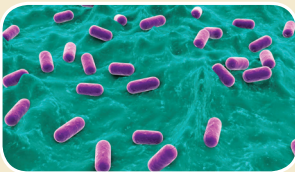
**PREBIOTICS.** Specific dietary fibres which good bacteria feed on.

# All About Probiotics

According to World Health Organization (WHO), probiotics are live microorganisms which have been proven, in controlled human studies, to provide health benefits to the human body when consumed in adequate amounts. These probiotics have been formulated into many different types of food products and are also available as dietary supplements.

## Common Types of Probiotics

While there are many different types of probiotics, here are some of the more common ones:



### ***Lactobacillus species***

- Example: *Lactobacillus casei*, *Lactobacillus acidophilus* and *Lactobacillus paracasei*



### ***Bifidobacterium species***

- Example: *Bifidobacterium longum* and *Bifidobacterium breve*

Other microbial cultures have also been recognised as probiotics, and they include other bacteria (eg *Bacillus* and *Streptococcus*) and yeast (*Saccharomyces*).

## Probiotics Science

On-going research continues to unveil more information regarding the health benefits of probiotics and their positive role on the gut microbiota and overall health. Although active research on probiotics is progressing, some important points that are well-documented include:



Good bacteria must reach the gut alive



The gut-friendly bacteria promotes good digestive health (reduce digestive disorders)



The predominance of good bacteria helps strengthen the immune system

# Probiotics and

Probiotics have been shown to have beneficial effects for your overall health and well-being, especially the following conditions.

## 1 Probiotics and gastrointestinal (GI) disorders

Current evidence supports the role of probiotics in a broad range of GI conditions. However, scientists have found that the effectiveness of probiotics is greatly influenced by many factors, eg species, strain, formulation, duration and dosage of consumption.

### Irritable bowel syndrome (IBS)

IBS is a recurring abdominal discomfort or pain associated with altered bowel habits or abdominal distention.

*Certain probiotics have been shown to be able to help improve symptoms such as abdominal discomfort, bloating and bowel movements.*



### Diarrhoea

Diarrhoea is the frequent passage of loose, watery, soft stools. It can lead to excessive water loss which may cause dehydration; if left untreated, this can be serious.



*Probiotics have been found safe for treating traveller's diarrhoea, antibiotic associated diarrhoea, and acute infectious diarrhoea. Some studies show that certain probiotics are effective in reducing the duration of diarrhoea and may also in lowering the risk of suffering from antibiotic associated diarrhoea.*

# Health

## Constipation

It is typically described as too much straining during bowel movements, passage of small hard stools and a sense of incomplete bowel movement.

Probiotics have been reported to help relieve chronic constipation symptoms and improve stool frequency and stool consistency. It is also said to be able to reduce straining during defaecation and the feeling of incomplete evacuation.



## 2

## Probiotics and immunity



Studies have shown that some probiotics can form a barrier on intestinal walls that prevents 'bad' bacteria from entering your body.

There are also studies that show how probiotics can help modulate the immune system and may even improve it by responding to pathogens from outside of the body. Additionally, there is emerging evidence that it may play a protective role against certain allergies.

**Note:** The benefits and side effects of probiotics to human health (other than for gastrointestinal health) are the subject of many on-going research, including some that explore how probiotics may improve mood or reduce the symptoms of stress. However, evidence for such health benefits are still being accumulated.

# Improve Gut Health

One direct way to increase the population of good gut bacteria is to consume foods and products containing probiotics. Some common sources of probiotics are as follows:

## 1 Cultured milk and fermented milk products containing probiotic cultures

In cognisance of the accumulating evidence that probiotics are able to help in improving intestinal or gut function, the Ministry of Health Malaysia (MOH) has gazetted a new food regulation that has officially recognised and defined probiotics. This regulation has permitted the addition of probiotics to food, including cultured milk, fermented milk products, yoghurt, cultured cream or sour cream. The regulation outlines specific requirements for a food product to be termed as a probiotic-containing food, including the types of bacteria that can be used.

These products that contain permitted probiotic cultures and meet other requirements of the law may be labelled with the word “probiotic” on the packaging/label. Consumers are advised to read the label to correctly identify these products.

### Good to know...

The key information to look for on a product label when choosing cultured milk containing probiotics are:

Label contains the words “Live probiotic cultures”

The genus, species and strain of probiotic used in the product

Direction for storage before and after the package is opened



Quantity of probiotic cultures must be clearly stated

The number of probiotic cultures must not be less than  $10^6$  \*cfu/ml or cfu/g

*\*CFU, or colony forming unit, refers to number of microorganisms present*



# with Probiotics

## Important to note....

Cultured milk and fermented milk products that do not meet the criteria set by the food regulations of MOH are not permitted to indicate on the label that it contains "Probiotic" or "Probiotic Cultures".

## 2 Traditional fermented foods

These foods are traditionally home-prepared and can be potential sources of beneficial bacteria. Example:

*Sauerkraut  
(German dish  
made of  
fermented  
cabbage)*



*Kimchi (Korean  
traditional  
food made of  
fermented salted  
vegetables mixed  
with seasonings)*



*Homemade  
yoghurt (fairu)*



*Tapai pulut*

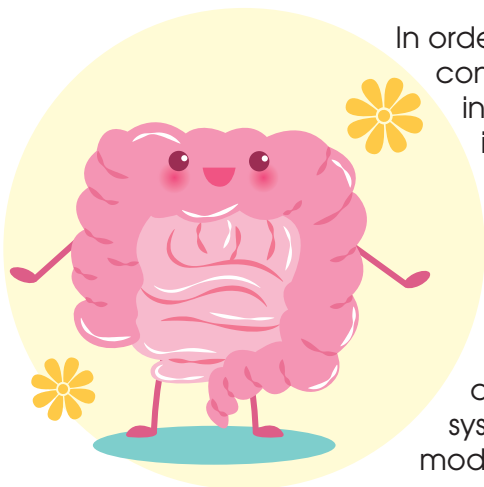


## Probiotic supplements:

You can also find probiotic supplements in the market which can be in powdered or pill form. Follow the instructions on proper dosage, frequency and storage to maximise the effectiveness of the probiotics. Remember to check for the probiotic genus and species and the CFU count. It is best that you refer to the pharmacist or healthcare professional before buying.

# Dietary Fibre & Prebiotics

## - What You Should Know



In order to achieve good gut health, it is important to consume a healthy diet, which is balanced and includes a variety of foods from all food groups and is high in dietary fibre.

Dietary fibres are non-digestible carbohydrates that pass relatively unchanged through our stomach and intestine. Because of this indigestible property, dietary fibres add bulk to the diet. They regulate bowel movement and thus play vital roles in keeping the digestive system healthy. Some dietary fibres are also able to modulate blood glucose and cholesterol levels.

Foods that are good sources of fibre include legumes, whole grains and wholegrain products, vegetables and fruits.

In addition, some specific dietary fibres can serve as prebiotics, i.e. food for the 'good' bacteria, thereby encouraging the growth of favourable gut bacteria. Prebiotics, therefore, also play important role in promoting gut health.



Foods that are rich in prebiotics include garlic, onion, asparagus, and bananas. Other food ingredients that can serve as prebiotics that are approved by MOH include: fructo-oligosaccharides (FOS), inulin (a type of FOS), and galacto-oligosaccharides (GOS).

*Trivia...*

**Prebiotics,**  
when **combined with probiotics,**  
are known as **synbiotics.**

# FAQs

Q1

**Are probiotic food products safe for women who are pregnant/ breastfeeding?**

**Answer:** Probiotics are generally considered safe for consumption during pregnancy or while breastfeeding. The good bacteria stay in the digestive tract and do not enter the blood. That means that they do not reach a developing foetus or a breastfeeding baby. However, do consult with your doctor before changing your diet or taking new supplements.



Q2

**Are all probiotic food products the same?**

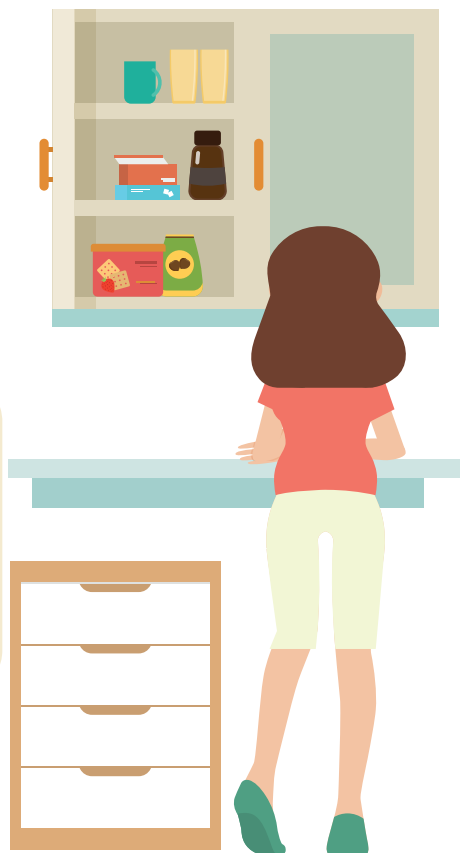
**Answer:** No. Different probiotic food products are formulated using different types and quantities of bacteria.



Q3

**How do I  
store probiotic  
food products?**

**Answer:** All such products will include storage instructions on the label which should be followed to enjoy the maximum effectiveness of the probiotic.



Q4

**Can I  
take probiotic  
food products if I  
suffer from antibiotic  
associated  
diarrhoea?**

**Answer:** Yes, you can. Antibiotic associated diarrhoea mostly results from dysbiosis (imbalanced gut microbiota). Research has focused on the benefits of taking probiotics to restore the normal gut microbiota.





**Are there any side effects of consuming probiotic food products?**

**Answer:** Side effects are uncommon, and most people can consume probiotics without any adverse effects. You may experience flatulence and minor stomach discomfort when consuming more than the recommended dose, but this situation typically stops once your body adjusts. Consult your doctor if this happens.

**Q6**

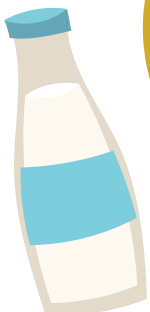
**Are probiotic food products safe for children and elderly?**

**Answer:** Yes. Consumption of probiotic food products is generally safe for everyone including children and elderly. Consult your doctor if you would like to give to healthy infant.



**Q7**

**Are all fermented food and beverages that contain live cultures considered to be a probiotic food?**



**Answer:** No. For it to be recognised as a probiotic food, it has to comply with all the requirements of the probiotic regulation of the Ministry of Health Malaysia.

# Maintain Good Gut Health with Healthy Lifestyle

Now that you have learnt about the importance of maintaining good gut health, make sure you practise a healthy lifestyle, eat a balanced and varied diet and engage in daily physical activities. Here's a list of what you can do.

1

## Practise balance, moderation & variety in your daily diet!

Use the Malaysian Food Pyramid as your guide to healthy eating.



2

## Include foods rich in fibre

Dietary fibre helps to keep foods moving through the digestive tract more easily. Eat plenty of fibre-rich foods such as legumes, whole grains and wholegrain products, vegetables and fruits.



3

## Consume probiotic-rich foods

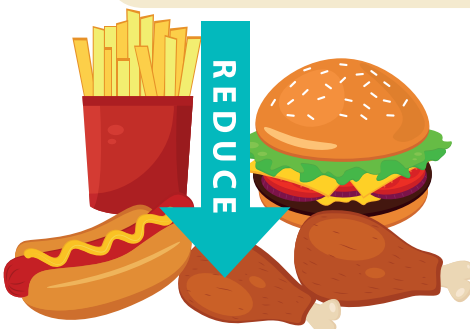
Nourish the gut with probiotics foods and keep it in balance to maintain good gut health.



4

## Reduce intake of fried foods

Oily foods are more difficult to digest and delay gastric emptying.

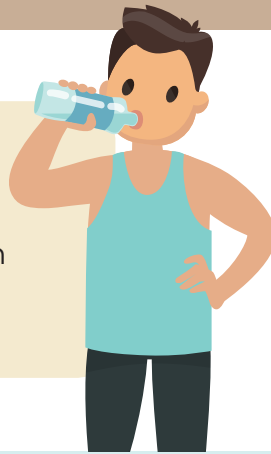




5

### Drink plenty of water

Sufficient fluids are needed to prevent constipation and aid in food digestion. Drink at least 8 glasses of plain water daily.



6

### Be active and maintain ideal body weight

Maintain a physically active lifestyle and a healthy body weight to ensure that your gut is in optimal working condition.



7

### Rest well

Get sufficient rest daily and manage your stress well.



8

### Regular check-up

Go for regular health check-up including screening for digestive disorders.





Nutrition Society of Malaysia

# IMPROVING LIVES through **NUTRITION**

As a professional organisation, we are guided by a simple belief – the more people understand food and nutrition, the better they can care for their health and well-being.

For that reason, we support the advancement of research, sharing practical insights and important discoveries for the benefits for all.

We also support the Government's efforts in promoting healthy nutrition in the society to combat nutrient deficiencies as well as diet-related chronic diseases in the country (e.g. obesity, diabetes, hypertension and coronary heart disease).

In caring for the community, we continuously disseminate practical nutrition information to the young and old alike, guiding

them to discover the benefits of good nutrition and a healthy lifestyle.

We are committed to improve lives through nutrition. It's our way of serving Malaysians.

Established in 1985, the Nutrition Society of Malaysia (NSM) is a non-profit scientific organisation that facilitates networking among its 500 professional members and engages in the following scientific and community nutrition promotion activities to achieve its goal.

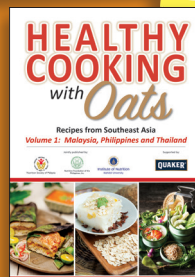
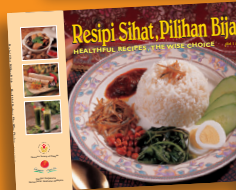
For more information, visit our website:  
**[www.nutriweb.org.my](http://www.nutriweb.org.my)**

## Our Activities

- Organise annual scientific conferences
- Conduct scientific update sessions
- Advice to government health & regulatory authorities & scientific bodies
- Research on specific community groups
- Lead the Southeast Asia Public Health Nutrition (SEA-PHN) Network
- Conduct nutrition promotion programmes in collaboration with other professional organisations and corporate companies
  - specific target groups especially women, infants and children (eg Healthy Kids, Mi-Care, MyNutriBaby, Positive Parenting)
  - community-based promotion programmes eg Nutrition Month Malaysia, Probiotics Education Programme
- Establish a comprehensive and authoritative website on nutrition for Malaysians

## Our Major Publications

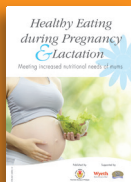
- Malaysian Journal of Nutrition
- Berita NSM (newsletter)
- Series of recipe books
  - Healthy Cooking with Oats. Recipes from SEA. Vol 1. Malaysia, Philippines, Thailand
  - Junior Chef Cookbook Vol 1. Let's Play Healthy Cooking.
  - Nutritionists' Choice Cookbook (Vol 1: Healthy Recipes for Your Little Ones. Vol 2: Resipi Untuk Seisi Keluarga)
  - Resipi Sihat, Pilihan Bijak (Vol 1 & 2)
- Various educational booklets and leaflets on dietary guidelines and specific foods
- Nutrition Month Malaysia booklets on healthy eating and active living ([www.nutritionmonthmalaysia.org.my](http://www.nutritionmonthmalaysia.org.my))



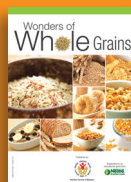
Junior Chef Cookbook Vol 1. Let's Play Healthy Cooking, Nutritionists' Choice Cookbook (Vol 1 & 2), Resipi Sihat, Pilihan Bijak (Vol 1 & 2), Healthy Cooking with Oats



Women@Heart Wanita & Pemakanan manual for professionals and leaflets for public



Healthy Eating During Pregnancy & Lactation



Wonders of Whole Grains



Malaysian Dietary Guidelines leaflets



Breastfeed with Confidence



Baby's First Bites



Healthy Spoonfuls for Toddlers



# WHY CHOOSE YAKULT? THE REASONS ARE MANY.



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INTESTINAL  
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RESEARCH ON  
INFECTIOUS  
DISEASES

**107** PAPERS



RESEARCH ON  
IMMUNITY

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YAKULT'S  
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FEEL THE GOODNESS OF  
**PROBIOTICS**  
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