

NUTRITION EDUCATION MODULES

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IDRC Grant/ Subvention du CRDI: 108156-001-Improving food and nutrition security in the Philippines through school interventions

Food is for Life and Nourishment!



Nutrition Education Module 1



Learning objectives:

1. Describe the role of food as nourishment and essential element in sustaining life;
2. Understand the basic food groups and its relation to daily diet; and
3. Learn how to use Pinggang Pinoy for proper nutrition.

Everybody needs to eat certain amount of food to sustain life.

Enjoying variety of colors, texture, flavor, and aroma engages us to eat food to nourish our body to survive, function, and live a quality life.



Our body obtains fuel or energy from the food we eat. It is essential to eat a nourishing and well-balanced diet because our bodies depend on it.

Good food can come from home-grown crops and can be easily prepared or cooked. Local and sustainable sources of plant-based foods are highly essential to have good nutrition.

Good nutrition is the bedrock of child survival, health, and development. Well-nourished children are better able to grow and learn, to participate in and contribute to their communities, and to be resilient in the face of disease, disasters, and other global crises (UNICEF).

Food can be anything edible or potable as defined by every culture that can provide nourishment and has a nutritive component or components such as carbohydrates, proteins, fats, essential vitamins and minerals. When ingested and utilized by the body, it sustains life, promotes growth, generates energy, and provide overall health to the body.

Diet pertains to the foods, including beverages, a person usually eats.

Eating Habits Magnify Your Health Outlook

Any food you eat contains nutrients that the body uses to perform daily tasks and functions. However, to make your diet healthy, it is important to choose nutrient-rich foods. Remember, every food you take contributes and reflects to your overall health. It is crucial that the foods you choose are dense in essential nutrients and low in nutrients that can be harmful when taken in excess such as sodium or salt.

Vitamins and Minerals

Micronutrients are needed by the body in small quantities. These include vitamins and minerals from fruits, vegetables, grains, root crops, dairy, and oils. Micronutrients are primarily for growth and repair of tissues, but specific micronutrients are also involved in brain health, energy production, and other tasks.

Nutrition is the science that relates food and its nutrients to health and disease. It includes the processes by which the human as an organism utilizes food substances to be able to live and function well.

Nutrients are substances in food that provide energy and structure to the body and regulate body processes.

Essential Nutrients are nutrients a person must obtain from food because the body cannot produce them in sufficient quantity to meet the needs of the body.

“The source and availability of food can also dictate our food choices, which in turn affect our health and nutritional status. We must create an environment that can influence us to be healthier and provide us with better food choices.” - Ian Curt R. Sarmiento

Carbohydrates, Proteins and Fats

Macronutrients are needed by the body in larger quantities. These include carbohydrates, proteins, and fats which provide the daily requirement for energy of an individual.

Food is for balanced diet and proper nutrition.

Every year, around 3 million children die due to undernutrition. For millions more, chronic malnutrition will result in stunting, an irreversible condition that literally stunts the physical and cognitive growth of children (UNICEF).

Why Do We Need to Understand and Learn Nutrition?

Nutrition is a lifestyle factor that is key to developing and maintaining an optimal state of health. A poor diet and a sedentary lifestyle are known to be risk factors for life-threatening diseases.

We must learn and understand nutrition and its relation to food and health because it will help us develop good eating habits. Availability of nutrient-rich food in the locality, paired with healthy eating habits, can help attain optimal state of health and prevent malnutrition and its effects.

What is Malnutrition?

Malnutrition is any condition caused by excess or deficiency in food energy or nutrient intake or by an imbalance of nutrients. Nutrient or energy deficiency results to undernutrition while excess in energy intake results to being overweight.

Undernutrition

Underweight – Low weight for age (acute)
Stunting - Low height for age (chronic)
Wasting – Underweight for height

Overweight

Overweight – weighing too much for height
Obese – being severely overweight

Quick Facts: Undernutrition in the Philippines

The Food and Nutrition Research Institute - Department of Science and Technology (FNRI-DOST) conducts the National Nutrition Survey every five years and the study discovered how many Filipinos suffer different forms of undernutrition:

Survey Results:

2008: About 4 million children were undernourished; anemia prevalence among schoolchildren 6–12 years old was at 20%

2013: Among Filipino children 5-10-year-old:

- 29% are underweight,
- 29.9% are stunted; and
- 8.6 % are wasted

Possible short and long term consequences:

- Mortality
- Morbidity
- Disability
- Adult size
- Low intellectual ability
- Low economic productivity
- Low reproductive performance
- No development of metabolic and cardiovascular performance

If nothing will be done to address these short and long term consequences of undernutrition, the offspring of the undernourished individuals may also suffer from poor health and development as shown in the figure below. Hence, it is very important to cut this vicious cycle. Otherwise, the next generation of Filipinos will not be able to achieve their full potential and productivity.

“Healthy children learn better. People with adequate nutrition are more productive and can create opportunities to gradually break the cycles of poverty and hunger”.

According to the World Health Organization:

- ✓ To achieve and maintain a good nutritional status, proper nutrition is necessary.
- ✓ Nutritional Status is the physiological state of an individual determined by the quantity and quality of food consumed and by the ability of the body to use them.

Balanced Diet

The body requires a full range of nutrients to maintain good health. At a glance, they are:

- ✓ Carbohydrates for energy;
- ✓ Proteins for growth and repair;
- ✓ Fats for warmth, energy, and healthy body functioning;
- ✓ Vitamins, minerals, and phytonutrients for general health and well-being;
- ✓ Fiber for a healthy digestive tract; and
- ✓ Water, a very essential element.

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10 Kumainments, Nutritional Guidelines for Filipinos, National Nutrition Council, 2012

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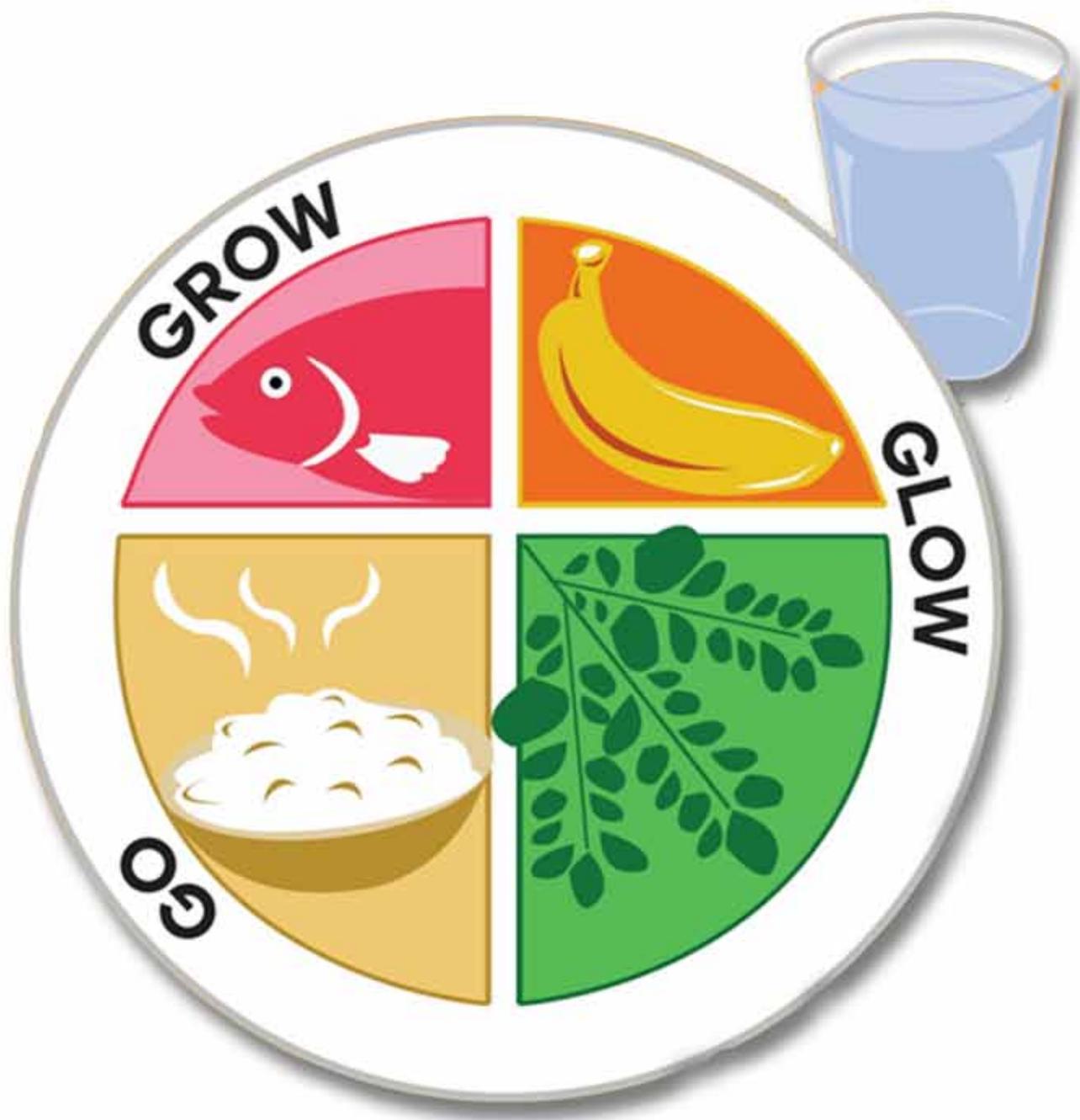
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<http://www.who.int/nutrition/challenges/en/>

<http://www.unicef.org/nutrition/>

Pinggang Pinoy, Food and Nutrition Research Institute, Department of Science and Technology, 2016

<http://dl.ishtm.ac.uk/DLTesting/ANH101/sessions/S1S1/printable.html>



Pinggang Pinoy is one of the tools that can be used as guide for proper nutrition, it shows the recommended food group proportion in every meal. It is divided into four portions: half of the plate is comprised of fruits and vegetables; the other half is composed of rice and fish or lean meat. The glass is filled with water to show the importance of water for hydration.

Source: Food and Nutrition Research Institute - Department of Science and Technology (FNRI-DOST)

Pinggang Pinoy

A food guide using a food plate model to show the recommended proportion by food group in every meal.

Go

Energy Giving

Go for rice, root crops, pasta, bread, and other carbohydrate-rich foods, which provide energy to support bodily functions and physical activity.

Choose whole grains like brown rice, corn, whole wheat bread, and oatmeal, which contain more fiber and nutrients than refined grains and are linked to lower risk of heart disease, diabetes, and other health problems.



Grow

Body Building

Eat fish, shellfish, lean meat, poultry, eggs, and dried beans and nuts needed for the growth and repair of body tissues.

Include fatty fish in the diet like tuna, sardines, and mackerel 2-3 times a week to provide essential fatty acids that help protect against heart diseases.

Consume milk, milk products and other calcium-rich foods like dilis and small shrimps for strong bones and teeth.



Glow

Body Regulating

Enjoy a wide variety of fruits and vegetables, which are packed with vitamins, minerals and fiber needed for the regulation of body processes.



Water

Drink lots of water everyday for adequate hydration.

Limit intake of sugar-sweetened beverages to reduce the risk of obesity and tooth decay.



Health Tips!

- ✓ Eat less salty, fried, fatty, and sugar-rich foods to prevent chronic diseases.
- ✓ Prepare a good breakfast to have enough fuel to get through the day.
- ✓ Get creative when cooking meals for kids.
- ✓ Serve healthy snacks.
- ✓ Understand nutrition information on product labels to make smart food choices.

Encourage kids to be active!

Reference: Pinggang Pinoy, FNRI-DOST, 2016, used with permission

How to Fill Up Your Kid's Plate

GO

Rice and alternatives

Any of the following:
 1/2 cup cooked rice
 2 pieces small pandesal
 2 slices small loaf bread
 1/2 cup cooked noodles
(ie. pansit)
 1/2 medium piece root crop
(ie. kamote)

Any of the following:
 3/4 cup cooked rice
 3 pieces small pandesal
 3 slices small loaf bread
 3/4 cup cooked noodles
(ie. pansit)
 3/4 medium piece root crop
(ie. kamote)

Any of the following:
 1 cup cooked rice
 4 pieces of small pandesal
 4 slices of small loaf bread
 1 cup of cooked noodles
(ie. pansit)
 1 medium piece root crop
(ie. kamote)

GROW

Fish and alternatives

Any of the following:
 1/2 piece small size fish
(ie. galunggong)
 1/2 slice large variety of fish
(ie. bangus)
 1/2 serving lean meat, 15g
(ie. chicken, pork, beef)
 1/2 piece tokwa
 1/2 piece small chicken egg

Any of the following:
 1/2 piece small size fish
(ie. galunggong)
 1/2 slice large variety of fish
(ie. bangus)
 1/2 serving lean meat, 15 g
(ie. chicken, pork, beef)
 1/2 piece tokwa
 1/2 piece small chicken egg

Any of the following:
 1 piece small size fish
(ie. galunggong)
 1 slice large variety of fish
(ie. bangus)
 1 serving lean meat, 30 g
(ie. chicken, pork, beef)
 1/2 piece tokwa, 6x6x2cm
 1/2 piece small chicken egg

GLOW

Vegetables

Any of the following:
 1/2 of cooked vegetables
(ie. malunggay, saluyot, gabi leaves, talinum, ampalaya, kalabasa, carrots, sitaw)

Any of the following:
 3/4 cup of cooked vegetables
(ie. malunggay, saluyot, gabi leaves, talinum, ampalaya, kalabasa, carrots, sitaw)

Any of the following:
 3/4-1cup of cooked vegetables
(ie. malunggay, saluyot, gabi leaves, talinum, ampalaya, kalabasa, carrots, sitaw)

GLOW

Fruits

Any of the following:
 1/2-1 medium size fruit
(ie. saging, dalanghita, mangga)
 1/2-1 slice big fruit
(ie. papaya, pinya, pakwan)

Any of the following:
 1 medium size fruit
(ie. saging, dalanghita, mangga)
 1 slice of big fruit
(ie. papaya, pinya, pakwan)

Any of the following:
 1 medium size fruit
(ie. saging, dalanghita, mangga)
 1 slice of big fruit
(ie. papaya, pinya, pakwan)

3-5 years

6-9 years

10-12 years



1. Kumain ng iba't-ibang pagkain.

1. Eat a variety of foods everyday to get the nutrients needed by the body.



2. Sa unang 6 months ni baby, breastfeeding lamang; mula 6 months, bigyan din siya ng ibang angkop na pagkain.

2. Breastfeed infants exclusively from birth up to 6 months then give appropriate complementary foods while continuing breastfeeding for 2 years and beyond for optimum growth and development.



3. Kumain ng gulay at prutas araw-araw.

3. Eat more vegetables and fruits everyday to get the essential vitamins, minerals and fiber for regulation of body processes.

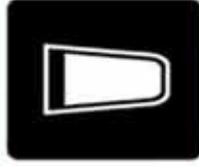


4. Kumain ng isda, karne, at ibang pagkaing may protina.

4. Consume fish, lean meat, poultry, egg, dried beans or nuts daily for growth and repair of body tissues.



2012 Nutritional Guidelines for Filipinos*



5. Uminom ng gatas; kumain ng pagkaing mayaman sa calcium.

5. Consume milk, milk products and other calcium-rich foods, such as small fish and shellfish, everyday for healthy bones and teeth.



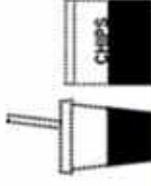
6. Tiyaking malinis at ligtas ang ating pagkain at tubig.

6. Consume safe foods and water to prevent diarrhea and other food-and water-borne diseases.



7. Gumamit ng iodized salt.

7. Use iodized salt to prevent Iodine Deficiency Disorders.



8. Hinay-hinay sa maaalat, mamantika, at matatamis.

8. Limit intake of salty, fried, fatty and sugar-rich foods to prevent cardiovascular diseases.



9. Panatilihin ang tamang timbang.

9. Attain normal body weight through proper diet and moderate physical activity to maintain good health and help prevent obesity.



10. Maging aktibo. Iwasan ang alak; huwag manigarilyo.

10. Be physically active, make healthy food choices, manage stress, avoid alcoholic beverages and do not smoke to help prevent lifestyle-related non-communicable diseases.

*Developed by the Technical Working Group led by the Food and Nutrition Research Institute of the Department of Science and Technology (FNRI-DOST).

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Grow Veggies in Your Home Garden!



Nutrition Education Module 2

Learning Objectives:

1. Describe the ideal location in selecting sites for growing vegetables;
2. Discuss different cultural practices and innovations in home gardening ; and
3. Apply techniques of harvesting, processing and marketing home garden products

Diverse garden at home can ensure households of continuous access to fresh, safe and nutritious vegetables. Vegetables are good sources of micronutrients. Micronutrient deficiencies are a serious nutritional problem that affects poor households in the Philippines.

There are many factors that make gardening challenging for many people. These factors include poor soil quality, lack of access to seeds, poor water source, pests and climate related challenges.

Bio-intensive Gardening Technology (BIG) offers practices and principles that are appropriate for resource poor families. It utilizes locally available materials to sustain soil productivity and also responds to climate change issues.

Soil productivity condition is important in choosing a site for home gardening.

While BIG can be established in every vacant lots, there are some ideal conditions that must be considered to sustain and maximize its productivity:

1. Good source of water especially during dry months/season
2. A well drained area to allow excess water flow out easily during rainy season.
3. Relatively fertile soil for plants to grow
4. Sufficient sunshine can penetrate the area
5. Good air circulation



Page 1 of 8: Start a Home Garden: Grow Your Veggies!



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Suggested Activity for Starting a Garden:

Methodology: Demonstration and Practicum

1. Start by stating the need to lay out garden beds in east west direction.
2. Demonstrate proper lay outing of the garden.
3. Show how to layout a garden bed and how deep-dug raised bed is done.
4. Allow participants to participate. Divide the participants in groups with 5 members each group. Each participant will perform layouting and deep-digging. Mix yard manure, ash, egg shells, and dry leaves with the soil while preparing the bed.
5. Instruct participants to plant borderline crops using 1meter by 1 meter spacing.

Materials:

- ✓ Meter stick
- ✓ String
- ✓ Sticks
- ✓ Spade
- ✓ Rake
- ✓ Seedlings
- ✓ 3 bags ash
- ✓ 3 bags farm yard manure, leaves, fertilizer trees

Follow up on garden practicums may be done on subsequent important topics:

1. Show how intensive planting is done.
2. Discuss the different crop management practices and why it's important to store seeds for the next cropping season.

How to Prepare Deep-dug, Raised Beds:

Raised deep-dug beds: A strategy to lessen the effects of climate change in your garden

A. Deep dug (12" minimum and 24" maximum) raised beds have the following benefits:

1. Excess water during heavy rains is drained out.
2. During drought, more rain water is allowed to enter into the soil and the beds dry-out much later than conventional ones. This results to improved garden microclimate (lower soil and air temperature).
3. Plant roots penetrate deeper in the soil compared to roots that spread superficially in shallow dug beds. This makes plants more resilient to drought and erosion.



4. Soil compaction (from walking) in the growing area is reduced by having permanent pathways between plots.
5. Though initial bed preparation would require long hours of work, subsequent preparation is only 1/3 to 1/4 of the initial time.
6. Soil preparation is done only when the soil is not too wet.



How to Prepare Deep-dug, Raised Beds:

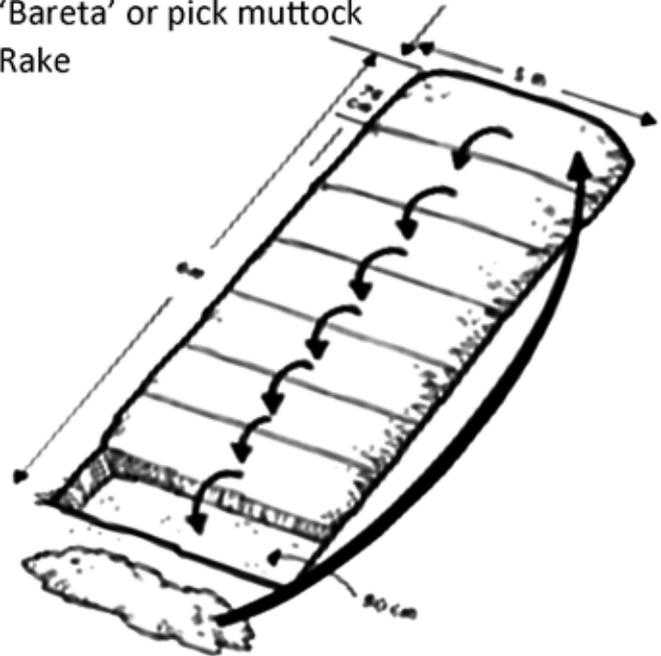
Materials Needed for layout:

Plastic string or twine
Bamboo or wooden stake
Bolo
Measuring stick

1. Once an area is identified, clear it from all debris, weeds and grasses. Use string and wooden/bamboo stake to layout the garden. Make sure to orient the rows in an east-west direction to avoid shading of the crops.
2. Measure the garden bed not more than 1.5 meters wide and 6 meters long (length can vary depending on the availability of land). The prescribed width will permit working on either side of the bed without trampling on it.
3. Remember to leave a space or pathway between garden beds. It should be at least 0.5m.
4. Divide the length of the garden bed temporarily into sections, 75 cm wide using wooden or bamboo stake as guide.
5. Spread evenly an 8 cm or 3 inches thick layer of compost over the bed.
6. Dig a trench 30 cm deep in the first section (75 cm wide divisions done in step 4). Remove the soil of this trench and place them on the end of the bed.
7. Dig the first trench again just to loosen the soil (double digging). Do not remove the soil.

For preparing garden beds/plots:

Shovel
Hoe
'Bareta' or pick muttock
Rake



8. Dig a second trench (next 75 cms) adjacent to the first one. Cover the first trench with the soil coming from this (second) trench.
9. Double dig this trench as in the first trench.
10. The process is repeated until it reaches the other end of the bed. Fill the open trench at the other side of the bed with soil previously dug out from the first trench.
11. Apply the following into the bed:
 - a. 2.5 cm compost or decomposed manure
 - b. 1 kg ashwood
 - c. 1 kg bonemeal or dried leaves of trees
 - d. 1 kg of any: crushed egg shells, snail shells, etc.
12. Mix the plant foods thoroughly to top 15cm of soil. Level the bed. It is ready for planting.

Borderline Fertilizer Trees: Provider of Protection and Food to Crops

Gliricidia sepium, a leguminous tree (it fixes nitrogen from the air) is highly recommended as a borderline crop. Any leguminous tree can serve as such. Aside from nitrogen fixation, planting them along the borderlines gives several benefits:

1. Gives easier access to organic fertilizer when it's needed:

Branches are cut after 9-12 months of planting. Place the branches on the garden plots and allow the leaves to fall off. In 3-4 days' time, remove the branches and incorporate the leaves in the soil. Wait for 10-14 days before planting.

2. Creates a cooler climate within the garden that favors plant growth and slows down evaporation of soil moisture. As a result, watering is done infrequently.
3. Serves as windbreaker reducing the negative impact of strong wind on crops.

Crop Management

A. Diversification. Grow different kinds of vegetables, trees and other plants in one area. It is very important for various reasons:

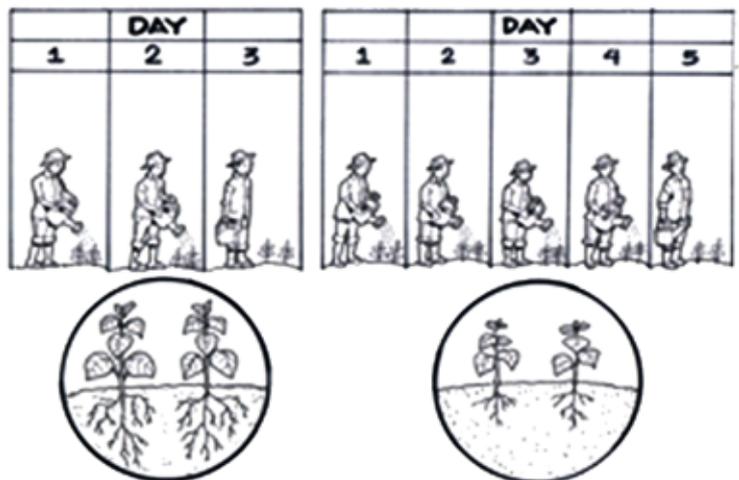
1. Combination of short term, annuals and perennials results to availability of vegetable all year round.
2. Diversity in vegetables available in the garden prevents taste fatigue in the family.

3. Different crops can provide different nutrients to our diet. Green leafy vegetables are good sources of vitamins and minerals while root crops and legumes are rich in carbohydrates and protein.
4. Pest management becomes easier. The probability of pest outbreak happening is lesser in diverse garden than in a monocrop system.

B. Crop rotation or the cultivation of different crops in the same part of the bed from season to season has the following benefits:

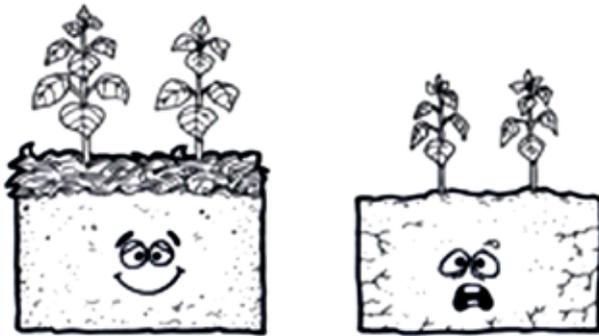
1. It does not overburden the soil. It allows the soil to "rest" without keeping it idle.
2. The land is allowed to rest from one kind of plant and the soil can even get richer from the other plant that was put in its place.

C. Tips in Watering



1. Water your plants thoroughly Watering is one of the most critical factors for successful gardening. As a rule, plants should be watered thoroughly but infrequently. Watering the soil to sufficiently dampen it will promote development of deep root system. This allows plants to absorb moisture from subsoil when the topsoil dries up.
2. Poor practices such as too much watering results to poor development of plant root system and damages the crop.

D. Mulching is a process of spreading a layer of organic materials, such as straw, cut grass, leaves, sawdust, and the like to cover the soil around the plants or between the rows.



Roles and benefits of mulching:

1. Protection from effects of too much rain and soil erosion
2. Serves as cushion, reducing soil compaction by pelting rain, coarse streams or drops of water from irrigation devices
3. Minimizes growth of weeds
4. Aids in maintaining favorable condition of the soil underneath, i.e. uniform soil temperature
5. Increases air circulation and water holding capacity of the soil
6. Upon decomposition, it promotes granulation or clinging together of the soil and serves as fertilizer to the plants
7. Improves earthworm activity and nitrogen-fixing due to improved soil moisture and organic matter content
8. Reduces soil borne diseases

Seed Production and Storage

Considerations in harvesting fruits for seeds:

1. Fruits for seed production are only harvested when they are already mature. Seeds from immature fruits will not produce good seeds and usually do not germinate.

2. On the other hand, fruits that are over mature are not recommended because:
 - they might have already been infected with pests and diseases
 - they are already weak since they are old
3. Select fruits that ripen in the middle of the fruiting season.
4. For fruits with lots of seeds (example: bottle gourd, eggplant), seeds are usually taken from the middle portion of the fruit to ensure that maturity of the seeds is just right and at the same age.

Seed Extraction and Cleaning

The extraction of seeds from the fruit depends on the condition of the fruit and seeds that will be harvested.

For wet seeds from fleshy fruits:

- a. Seeds are extracted using hands or knife
- b. Fruit may be fermented to remove seeds:
 1. Soak fruits in water for 1-2 days
 2. Separate seeds from flesh, and throw away the flesh together with seeds that float (except when the seeds naturally float).
 3. Wash and dry the sunken seeds.

Examples: eggplant, cucumber, tomato, bitter gourd, squash, sponge gourd, bottle gourd

For dry seeds from dry fruits or pods:

These are extracted by and or pounded collectively while inside a sack or net bag to prevent them from scattering.

Examples: cabbage, cauliflower, mustard, pechay, lettuce, pea, lima bean, yardlong bean

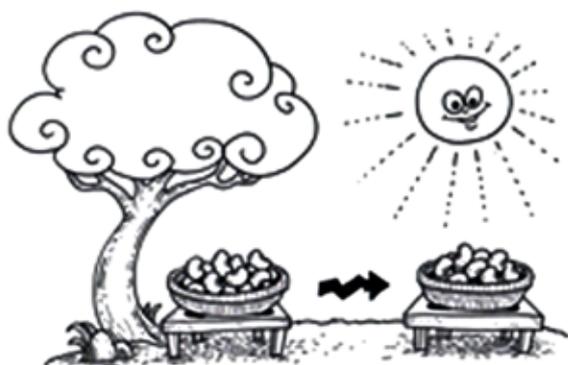
Tips:

Do not harvest these seeds when it is raining or early in the morning when there is still dew. Also do not harvest at midday since the pods will break or shatter easily, allowing the seeds to contact with the soil and with microorganisms that lower seed quality

For dry seeds from fleshy fruits: ripe fruit are dried before extracting the seeds. Examples: chili, lady finger

Seed Drying

Dry the seeds before processing and storing. Seeds with high moisture content are:



1. More susceptible to physical damage during processing;
2. Have reduced viability;
3. At risk of formation of molds and insect infestation that destroy the seeds;
4. Have high respiration rate, (consuming the stored food of the seeds) and resulting in weak seedlings;
5. At risk of dying due to heat produced by microorganism infestation and high respiration rate

Remember:

For all kinds of seeds, winnowing or removal of contaminants after drying and before storage is recommended to maintain good quality. Contaminants include weed seeds, seeds of other crops, or of different variety of crops, chaff, dust and other inert materials like rock, sand, dirt, twigs and leaves.

Things to Remember in Drying of Seeds

1. Do not allow seeds to come in contact with the soil or ground. Dry seeds above the ground by using a wedge.
2. Use drying materials with hole (examples: sack, winnowing basket, mat) to allow the air to pass through, giving fast, even drying.
3. Do not dry the seeds rapidly because it will lower the seed germination. Rapid drying can also harden the seed coat, making the seed impermeable to water when planted.
4. If the moisture content of the seeds is high, air dry the seeds in a shady area for one to two days before sun drying. Do not dry seeds under the sun from 11:00 AM to 2:00 PM when the heat of the sun is intense because it will kill the seeds.
5. Spread the seeds thinly and stir and turn them occasionally (at least 4-5 times) to make drying fast and even.
6. Before it rains or gets dark, cover the seeds and take them indoor to prevent their moisture from increasing

Seed Storage

The length of time that seeds can be stored depends on:

1. seed type
2. its quality; and
3. storage condition



Factors that Affect the Longevity of Seeds During Storage:

1. Moisture content of the seeds

Even if the seeds are thoroughly dried; improper storage can still enable them to absorb moisture.

Do the following to avoid damage due to excessive moisture content:

- a. Store seeds in air-tight containers (bottle with tightly closed metal cover, tin can, sealed thick plastic bag)
- b. Keep seeds dry by including desiccants or materials that absorb moisture (examples: dry charcoal, dry ash, toasted rice, lime, silica gel) inside the storage container
- c. Replace desiccants, such as dry charcoal, dry ash and toasted white rice, each time the container is opened
- d. Sun dry the seeds from time to time

2. Temperature – The life of vegetable seeds during storage is prolonged when the storage temperature is low or cold (but not freezing). If refrigerator or air conditioner is not available, choose a cold place (example: near the river, under trees, underground, inside a clay jar). Ensure that the seeds will not get wet.

3. Pests

Storage weevils, fungi and bacteria shorten life of seeds during storage. To prevent pest infestation, choose only pest-free seeds during storage. Pest problems can also be prevented if the seeds are maintained dry. Some materials that can stop the growth and multiplication of pests are:

a. Dry ash and charcoal

Use one kilo of ash for every kilo of seeds. Use ash which has been cooled for at least 12 hours to prevent the seeds from burning.

b. Sand

Mix the sand with seeds and make sure the container is full so that the weevils cannot move around.

c. Cooking oil

Some seeds can be mixed with cooking oil to prevent increase of weevil. The recommended rate is one teaspoon oil for every one kilo of seeds.

d. Lime

Mixing 15 teaspoons of lime for every kilo of seeds can prevent increase of weevils.

e. Dried and powdered leaves and seeds of different aromatic plants

Weevils are sensitive to odorous plants. It prevents them from increasing and may also kill them. The effect of these plants depend on their preparation, the amount applied and the type of seed and weevils. Some of these plants affect the seeds so it is important to test what is appropriate for a certain kind of seed. Also make sure that the right amount is applied. Examples of aromatic plants are:

i. Neem

Dry the leaves or seeds under the sun and grind them to a powder. Mix 3-4 teaspoons of powdered seeds (double the amount if powdered leaves are used) for every kilo of seeds to be treated .

As a general rule: the life of the seeds doubles when the storage temperature is lowered by 5°C

ii. Hot pepper or chili

Dried and powdered fruits are better than dried whole fruits. Mix 4-6 teaspoons of dried and powdered chili for every kilo of seeds.

iii. Black pepper

Mix 6 teaspoons of powdered black pepper (double the amount if powdered leaves are used) for every kilo of seeds.

iv. Powdered rhizome of turmeric

Mix 4 teaspoons for every kilo of seeds

v. Powdered leaves of mint

Mix 1-4 teaspoons for every kilo of seeds

vi. Powdered seeds of yambean

Mix 1-2 teaspoons for every kilo of seeds

vii. Powdered leaves of lagundi, mango and tobacco

Mix 1-4 teaspoons for every kilo of seeds

4. Other factors – The storage life of seeds can become shorter if the seeds are over mature, if they come from plants that have been attacked by pests and diseases or if the seeds were damaged during processing.

Reference: The Bio-intensive Approach To Small-Scale Household Food Production. IIRR. 1993

Post Discussion Activity

Duration: 20 minutes

Methodology: Fill in the blanks

Materials:

- ✓ Manila paper or bond paper
- ✓ Laptop or music player
- ✓ Permanent marker
- ✓ Masking Tape

1. Prior to the session, prepare set of questions relating to the different practices and techniques in starting a bio-intensive garden. Crumple the papers and put them in a basket or container, add blank papers.
2. Pass the basket around while playing a music, stop the music at anytime and the person holding the basket will pick one and answer the question that is written on the paper. Repeat until the questions run out.

Food Safety is Linked to Nutrition



Nutrition Education Module 3

From Garden to **MAKE FOOD SAFE**

IIRR 

Plate

PINGGANG PINOY™
Healthy food plate for Filipino adults



FOOD SAFETY FIRST

Learning Objectives:

1. Discuss the importance of food safety;
2. Apply proper food safety practices by:
 - ✓ Learning to identify and classify the risks and hazards to food safety;
 - ✓ Understanding the fundamentals to prevent food borne illness and food contamination;
 - ✓ Learning the various factors affecting microbial growth; and
 - ✓ Guiding food handlers and children the importance of food safety and hygiene.

From garden to plate make food safe: reduce food hazards, prevent food spoilage, prevent contamination, prevent food borne illness with frequent handwashing, and practice good personal hygiene.

Bacteria are causative agents in 60% cases of foodborne illness requiring hospitalization.

Key Point 1

Unsafe food can also lead to poor nutrition.

What is Food Safety?

Handling, storing, and preparing food that will prevent infection and making sure our food have enough nutrients to keep us healthy. Unsafe food and water are exposed to dirt and germs, or may even be rotten, which can cause diseases such as diarrhea, meningitis, etc., that can make people very sick or cause death.

When sick, we are weak and would have difficulty working or concentrating at school. Some infections also make it difficult for our bodies to absorb the nutrients needed to be healthy. Unsafe or stale foods lose nutrients needed for a healthy diet.

What is a Food Hazard?

Source of potential harm that may cause adverse health effects.

Bacteria or pathogen can be found everywhere.

What Makes People Sick from Food?

3 Major Hazards:

1. Physical

Objects that may cause injury such as broken glass, hair, metal shavings, jewelry, scrubbing pads or any objects that are not edible.

2. Biological

Microbiological agents are mostly invisible to the naked eye such as bacteria, viruses, and parasites. These may come from the soil (especially when organic materials which are not yet well-decomposed are used in the garden) or from contaminated water used in crop production.

3. Chemical

Poisonous substances like cleaning agents, pesticides, and other chemicals and plants that are harmful and not intended for human consumption.

Key Point 2

The lesser food hazards, the safer the food: reduce hazards from garden to plate

What is Foodborne illness?

Foodborne illness, also called food poisoning, is any illness resulting from eating food already spoiled or contaminated with pathogenic bacteria, viruses, or parasites as well as chemical or natural toxins such as poisonous mushrooms and various species of plants that are not suited for human consumption.



<http://www.kawalingpinoy.com/www.healthywomen.org/foods4betterhealth.com>

Remember

It is important to understand that contaminated food will usually smell fine, look safe and taste good but can still make someone very sick.

4 Causes of Foodborne Illnesses:

1. Bacteria are the most common causes of food borne illness. These harmful organisms multiply very fast when food is kept in the “temperature danger zone”.

2. Viruses also cause food borne illness; Hepatitis A is spread by a virus. A person may have the virus and not know it. When a food worker does not wash their hands well, viruses can be transferred to the food.

3. Parasites are tiny worms or bugs that may live in fish and meat. Proper storage and freezing can destroy parasites.

4. Chemicals/ Detergents such as cleaners and air fresheners or insect sprays can cause food borne illness. Keep them out of preparation areas and have them properly labeled.

Key Point 3

When in doubt, throw it out!

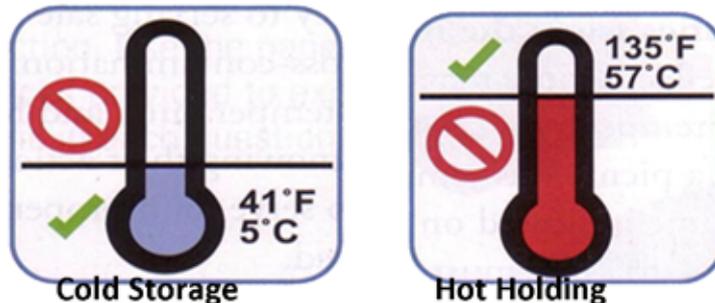
Remember FATTOM:

F Food Food, if not kept properly, can be a good site for bacteria to grow.

A Acidity Foods can have longer shelf life with acids such as citrus (e.g. kalamansi) or vinegar. Foods with little or no acidity are those where bacteria or pathogens grow best.

T Time Bacteria needs time to grow and reproduce on the food. If foods are not kept out of the temperature danger zone for 2-4 hours, bacteria can grow and multiply at a higher rate.

T Temperature At the temperature danger zone, bacteria grow best. Food should be stored, outside of the temperature danger zone. Freezing and cooling can reduce or hold the activities of bacterial growth.



O Oxygen Food exposed to open air has higher chances of spoiling. There are bacteria that need oxygen to multiply. Cover and store food properly.

M Moisture Moisture is water; like humans, most bacteria need water to grow and survive. Moist food may readily develop food spoilage if not properly stored or handled.

Key Point 4

Understanding these six conditions (FATTOM) will help prevent foodborne illnesses from occurring.

Improper thawing allows bacteria to rapidly grow in the outer layers of the food while the core is still frozen. Do not thaw food at room temperature or in warm water.

Tips on Proper Thawing, Holding, Storing and Reheating

Thawing

Melting down frozen food to an appropriate cooking condition

3 Steps for Thawing Foods:

1. When possible, transfer the food from the freezer to the refrigerator. This method will keep the food at 5°C and out of the Danger Zone, but may take several hours or days to melt the frozen food depending on the amount. Be sure to put different raw meats in separate containers to prevent the juices from transferring or dripping onto other foods.
2. Thaw food under cold running water, never in warm or hot.
3. Thawing food in hot water or in the microwave or in other immediate medium is appropriate only if the food will be cooked immediately.

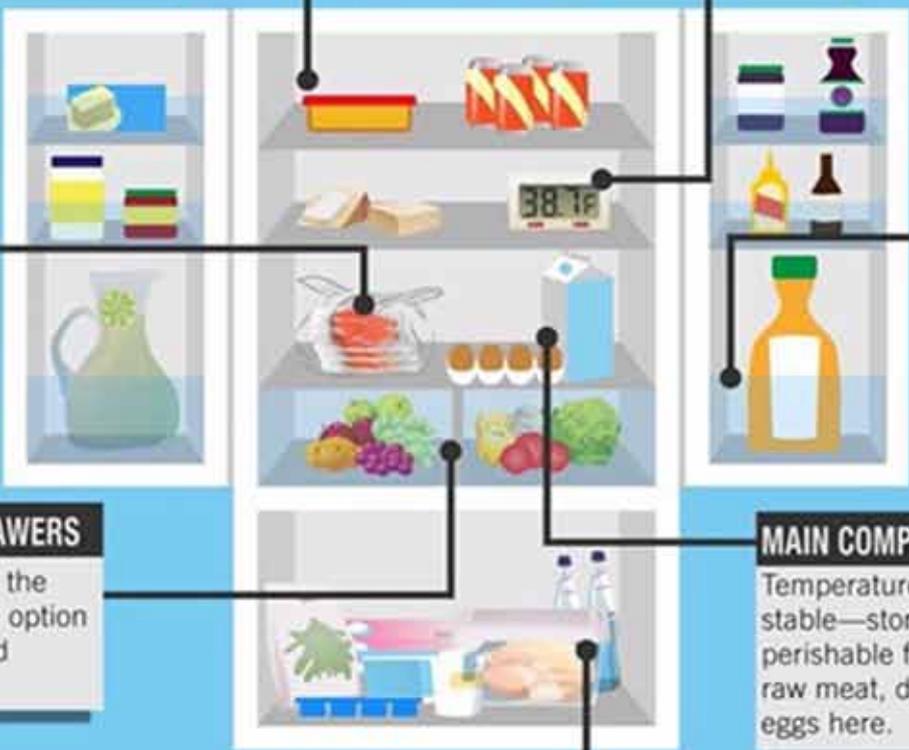
Hot Holding and Storage

1. Keeping the food hot may require hot holding equipment. Stir the foods from time to time if food will be kept in hot holding containers or equipment to avoid drying or build up on the sides of the containers.
2. If hot holding equipment is not available, ensure that foods will be served immediately within 2 hours after cooking.
3. Cover the food properly to keep the food warm and safe from contaminants and hazards.
4. If the food will be stored, ensure the containers are clean, safe and covered.
5. Make sure left over food were not contaminated during chilling or freezing.
6. Avoid combining different food items in single containers.
7. Food should not be left out to cool at room temperature for more than two hours.
8. DO NOT REFRIGERATE FOOD WHILE HOT. Ensure food is no longer hot before storing or covering to prevent moisture from building-up inside containers and to ensure refrigerator temperature will not be compromised.
9. In the storage(refrigerator): store raw meat, fish, and poultry in separate containers on the lowest shelves of the refrigerator. Do not let these items drip onto foods that will not be cooked before serving.

Example of how to properly store food in refrigerator

YOUR FRIDGE + FOOD SAFETY

Keeping your refrigerator clean and organized helps to minimize food spoilage and reduces your risk of foodborne illness.



COOKED LEFTOVERS
Leftovers are safe for 3 to 4 days in the refrigerator.

RAW MEAT
Prevent juices from leaking by storing on a wrapped plate or in a sealed container.

SEALED DRAWERS
Drawers are the best storage option for fruits and vegetables.

TEMPERATURE
An appliance thermometer lets you know your fridge is set to 40 °F or below.

DOORS
Temperature changes frequently—avoid storing perishable foods here.

MAIN COMPARTMENT
Temperature is more stable—store perishable foods like raw meat, dairy, and eggs here.

FREEZER
Set to 0 °F or below. Frozen food is safe forever though quality may suffer with lengthy storage.

ADDITIONAL TIPS
Clean refrigerator surfaces with hot, soapy water and diluted bleach solution.

Keep fridge smelling fresh by placing an opened box of baking soda on a shelf.

USDA
For more food safety tips, go to **FoodSafety.gov**

USDA IS AN EQUAL OPPORTUNITY PROVIDER AND EMPLOYER

Cross-contamination happens when bacteria and viruses are spread or transferred from one place to another, such as when raw or unclean food get into food that are ready-to-eat.

Food Storage Limits

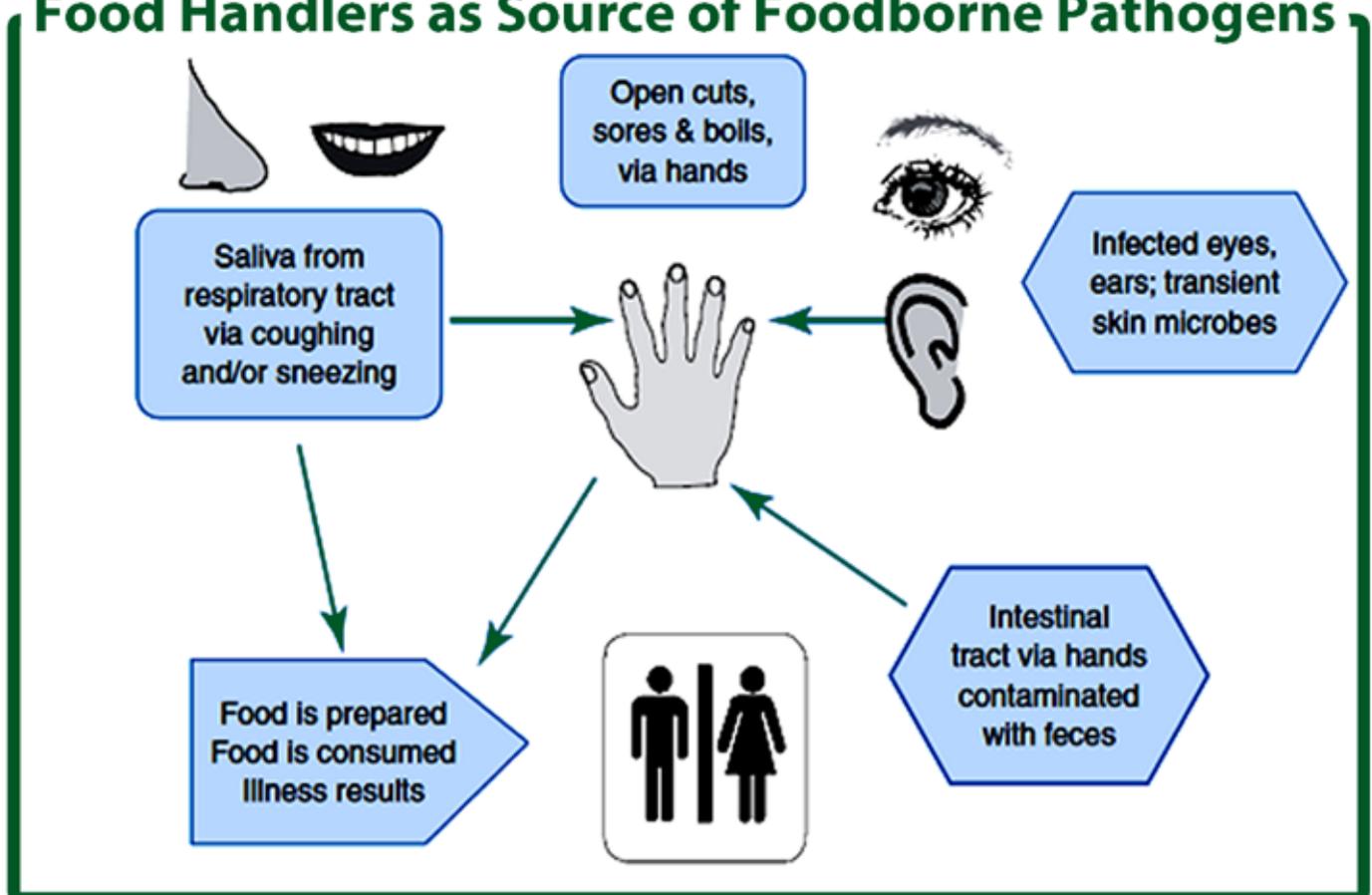
1. Food should always be used: according to expiry dates or according to purchased dates. Be conscious of the quality and the purchase dates of the perishable goods; ensure that fruits, vegetables and other goods are used accordingly to avoid or minimize wastages.
2. Find ways to use leftover items or opened ingredients in your menu plans without compromising food safety. Keep opened or pre-used ingredients in proper storage marked with opening dates or discard dates.

Reheating

1. Food that has been cooked and then cooled may need to be reheated.
2. Reheat foods ONLY when it is still while quality and suited for human consumption.
3. Reheating should be done quickly at 70°C and above. Stir the food during reheating process to make sure that all parts of the food are heated.
4. Reheating may increase the acceptability and palatability of food.

FIFO Method: First In, First Out

Food Handlers as Source of Foodborne Pathogens



Regular hand washing with soap can reduce the rates of diarrhea by 47% to 32% and respiratory illness by 30%.

Key Point 5

Good personal hygiene practices and cleanliness can keep contamination out.

Components of Good Personal Hygiene Practice

1. Maintaining personal cleanliness

Regular bathing, regular tooth brushing, clean and adequately trimmed finger nails, clean and washed clothing, haircut, and other personal hygiene practices

2. Proper food preparation attire

Apron, hairnet, face mask, hand gloves, clean and safe foot wear, and other precautionary accessories

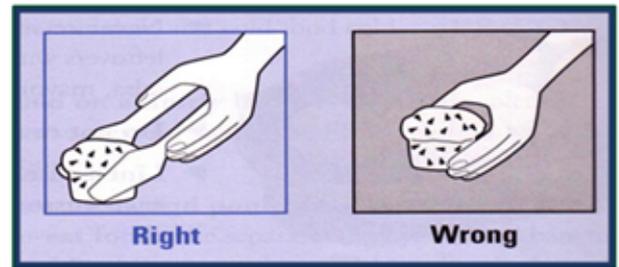
3. Regular handwashing practices

After using the rest room; before and after handling raw foods, touching hair, face, nose or other parts of the body; after sneezing or coughing, touching apron or clothing; and touching unsanitized surfaces or equipment.

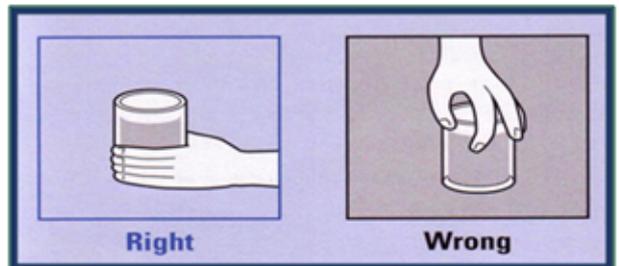


Fit for School Inc. (2010)

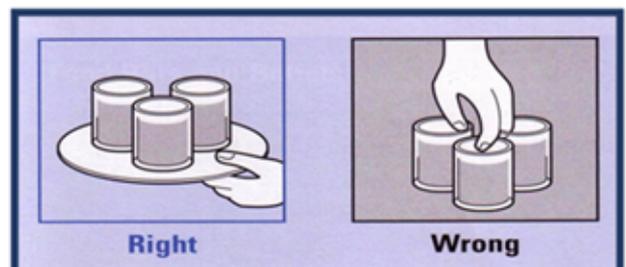
Serve Your Food Safely



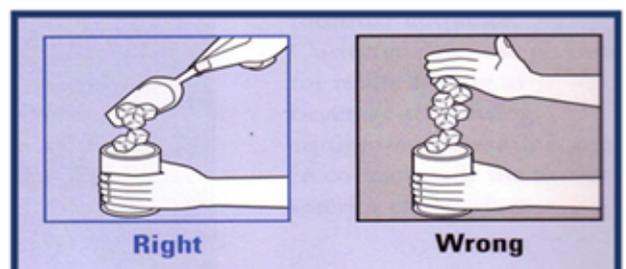
Handle food items with caution. Make it a habit to use food tongs or serving gears when serving food.



Serve and hold glasses properly. Avoid touching or carrying the glass by its lip.



Use a serving tray or a dinner plate as an under liner for glasses when serving beverages.



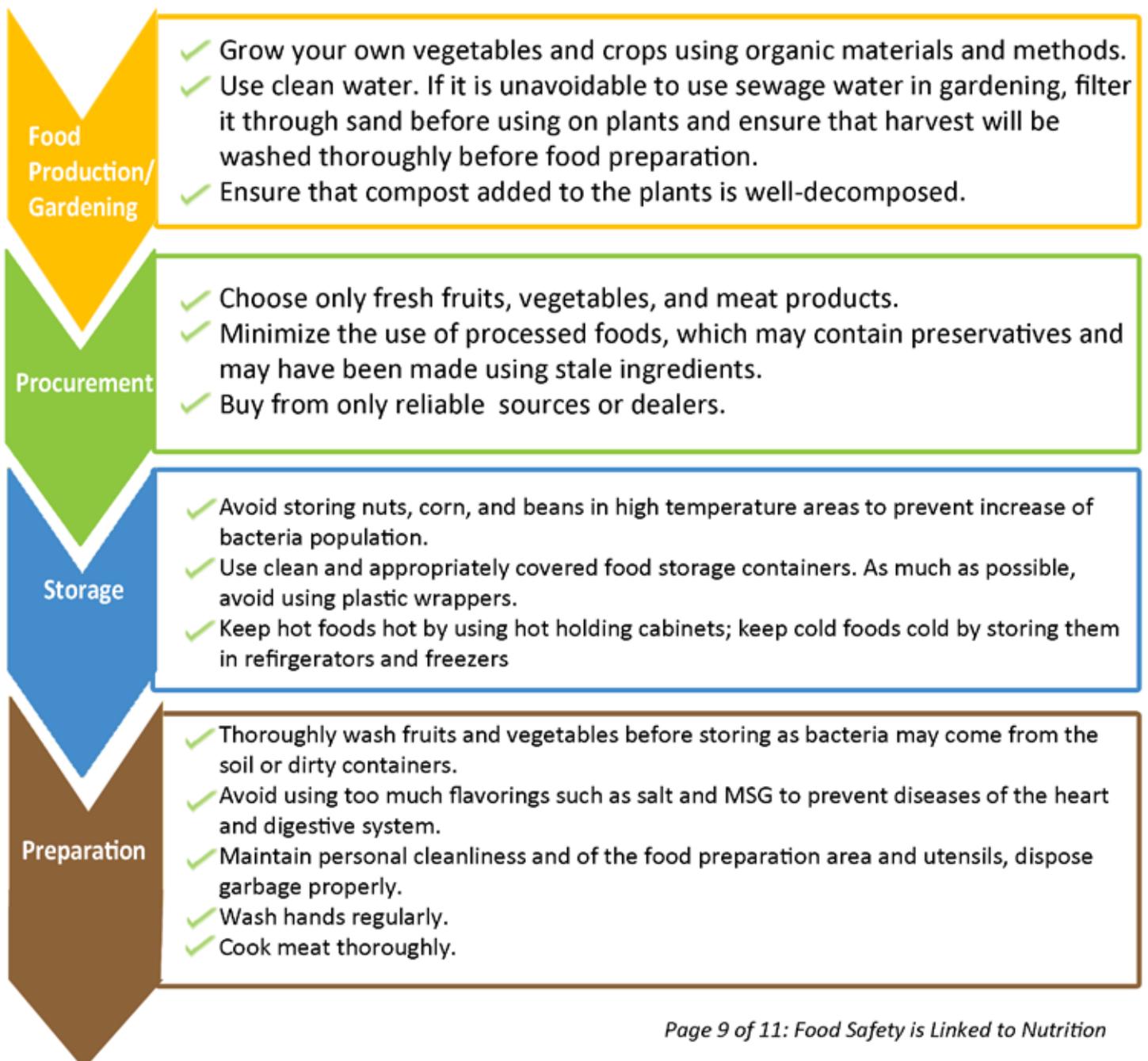
Use appropriate utensils when serving ice and other food items. Do not use your bare hands when handling food.

Tips for Glove Use! Change Gloves:

- ✓ As soon as they become soiled or torn
- ✓ Before beginning a different task
- ✓ If it was used to handle potentially contaminated equipment or food item
- ✓ At least every 4 hours after continuous use

Reminder

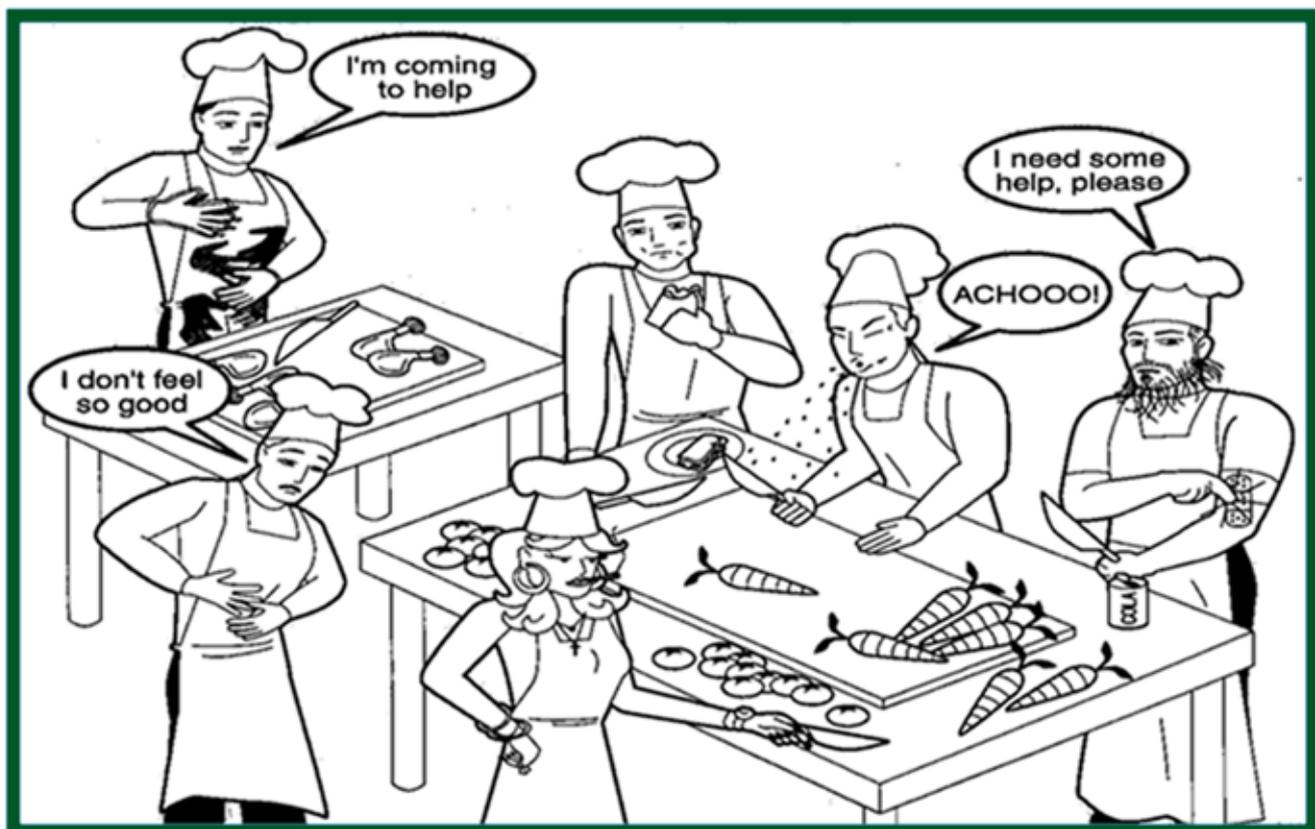
Food undergoes a long path before it reaches our plate and it can lose its nutrient contents or become contaminated along the process. For example, improper and unclean storage facilities, as well as unsanitary practices of food handlers may cause contamination during storage or transfer from farm to market to our households. Even the act of washing and cooking food may also be a cause of food borne illnesses if the water used is contaminated. Hence, food safety must be ensured during production (gardening), procurement, storage, and preparation.



Sample Picture Activity

1. Look at the picture carefully and cite six (6) “don’ts in food preparation”.
2. Describe how malpractices shown in the picture can cause food borne illness.
3. Cite a hazard involved in a certain food safety malpractice.
4. Cite the “Don’ts” in food preparation

Don’ts in Food Preparation



“Everybody has a role to play in keeping food safe. Food Safety is a shared responsibility between governments, industry, producers, academia, and consumers. Everyone has a role to play. Achieving food safety is a multi-sectoral effort requiring expertise from a range of different disciplines – toxicology, microbiology, parasitology, nutrition, health economics, and human and veterinary medicine. Local communities, women’s groups and school education also play an important role.”

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Good Hygiene Practices Help Fight Sickness and Malnutrition



Nutrition Education Module 4

Learning Objectives:

1. Discuss the importance of personal hygiene to health;
2. Enumerate the basic personal hygiene practices; and
3. Identify three (3) types of worms and its prevention.

Poor hygiene is the most common cause of diarrhea and intestinal worm infection.



Handwashing with soap is very cost-effective to fight sickness and malnutrition.

Benefits of good personal hygiene:

1. Promotes good health
2. Helps feel good
3. Maintains a healthy smile
4. Helps maintain strong and healthy gums
5. Minimizes the risk of infection
6. Prevents the spread of bacteria and viruses

Proper grooming and healthy personal habits help ward off illnesses and make a person feels good. **Make it a habit!**

Health is a spectrum of good practices. One of these is good personal hygiene, which is essential to promote health.

What are the effects of poor hygiene?

Poor hygiene practices allow bacteria and parasites to live in our hands and other parts of the body. When a person eats, drinks, or touches his mouth with unclean hands, bad organisms can enter the digestive system and cause diarrhea, intestinal worm infection, or inflammation of the intestines.

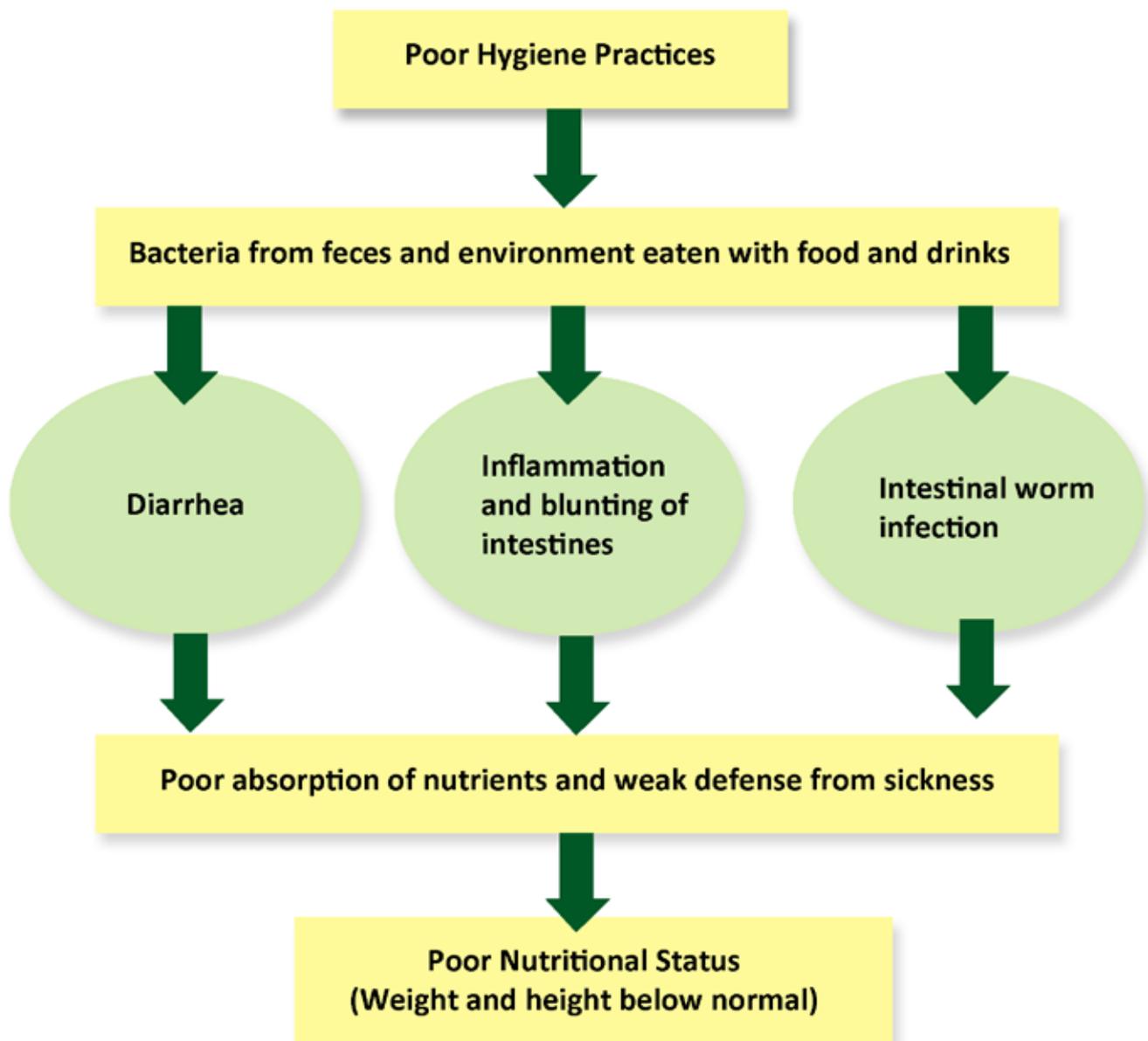


Figure 1. Link of poor hygiene to malnutrition

Adapted from Generation Nutrition: Prevention Fact Sheet 01

Diarrhea is a disease characterized by experiencing more than three (3) liquid stools per day. It is usually caused by accidentally swallowing bacteria from feces with food and drinks. This happens when hands are not properly washed before eating or the food and drink are prepared with water contaminated with feces.

If diarrhea is left untreated for two (2) weeks or more, the affected child will not be able to absorb enough nutrients needed for growth and health. Furthermore, if diarrhea affects a child repeatedly, he may lose fluids (dehydration) and nutrients causing weakness. His intestines will also become inflamed and blunt resulting to poor absorption of nutrients even after diarrhea has been resolved. This results to undernutrition which is one of the causes of frequent illness, and even death, among children.

Quick facts

As per 2015 report of WHO, there are 2.6 million deaths per year among children below five years old and nearly half of this is related to undernutrition.

Poor hygiene practices may also cause intestinal worm infection. Parasitic worms come from the feces of infected individuals and animals. The small worms or the eggs may be swallowed or may enter the body through the skin when a person walks barefoot on soil where there are feces. Worms may also come from the meat of infected animals. Hence, it is important to ensure that meat dishes, like all other food items, are adequately cooked to kill

Intestinal worm infection usually causes mild discomfort (like itching) but if left untreated, presence of parasitic worms in the body may lead to several health issues such as:

1. Poor absorption of nutrients because worms compete with the body for food;
2. Bleeding in the intestine resulting to anemia;
3. Diarrhea;
4. Loss of appetite and pain in the abdomen;
5. Obstruction in the intestine when worms have become too many; and
6. Destruction of tissues and organs they invade

Poor absorption of nutrients, diarrhea and blood loss cause malnutrition and anemia even if a child seems to eat adequate amounts of food. Loss of appetite, abdominal pain and obstruction in the intestine reduce the actual food intake of an infected child contributing to further weight loss and undernutrition. The health of a child worsens when the parasitic worms destroy the tissues and organs they live in. Because of undernutrition and poor health, an infected child fails to attend and perform well in school. His physical and mental development is impaired.

This type of infection may also occur among pregnant women, which poses negative outcomes like: low birth weight babies, impaired milk production, and increased risk of death for the mother and the baby.

In summary, poor hygiene is the most common cause of diarrhea and intestinal worm infection. These health problems may not immediately result to death but according to WHO, 50 % of undernutrition cases are related to repeated diarrhea and intestinal worm infection.

Undernutrition may not only lead to death; it also results to low intellectual ability and economic productivity entrapping its victims into a life of poverty.

Know More About Your Enemy: 3 Common Types of Worm

Parasitic infection is common in children with poor hygiene practices and comes in contact with soil and dirt during playing. The 3 main types of worms that affect humans are called threadworms (sometimes known as the pinworm), roundworms, and tapeworms.

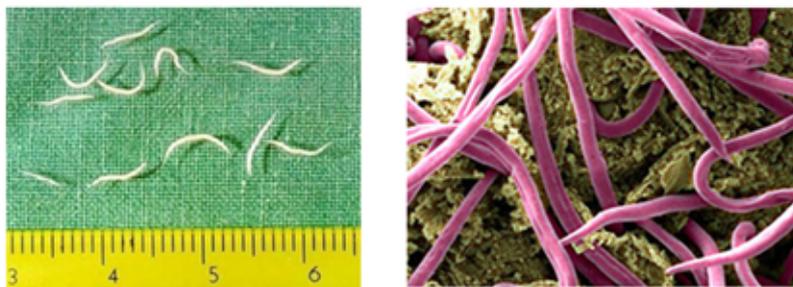


Figure 1 Threadworms also known as pinworms

Threadworms are spread mainly by contact with infected people, poor hygiene, and ineffective or lack of handwashing. The eggs can lay under the finger nails until passed on. They cause itchy anus and genitals and can be seen in the feces or on the toilet paper after wiping.

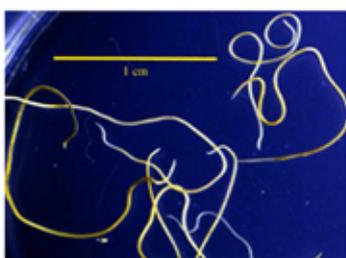
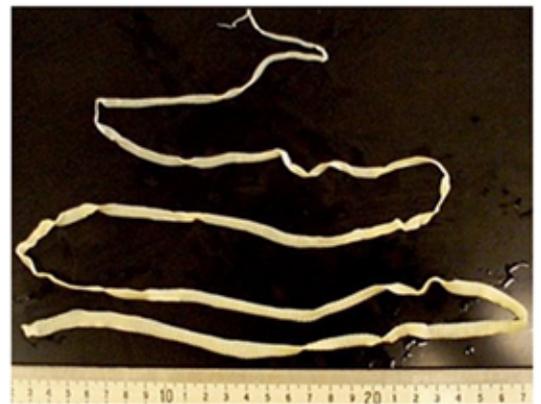


Figure 2 Roundworms



Figure 3 Tapeworms

Roundworms lay eggs in the gut and then hatch and grow into mature worms that also lay more eggs. These eggs are then passed out in the feces. The adult worm will continue to live in the gut and when it dies, it will also be passed out in the stool.



Tapeworms are far more common in animals than humans but transmission is still possible through consumption of undercooked and infected meats. Tapeworms are usually flat and ribbon-like made up of segments. These worms can lay eggs and multiply, too. Suffering with tapeworms is not normally serious initially, but if left untreated can cause hunger and loss of weight.

In summary, poor hygiene is the most common cause of diarrhea and intestinal worm infection. These health problems may not immediately result to death but according to the 2015 report of the WHO, 50 % of all cases of undernutrition are related to repeated diarrhea and intestinal worm infection. Undernutrition may not only lead to death; it also results in low intellectual ability and economic productivity entrapping its victims into a life of poverty.

Simple practices in reducing risks of acquiring diseases, especially intestinal worm infection:

1. Cook meat thoroughly.
2. Wash all fruits and vegetables before serving.
3. Always use slippers or shoes.
4. Build a sanitary toilet and use this properly.
5. As with all treatments for worms, all the family should be treated in case of cross-contamination and any pet feces should be examined for the same reason.

Basic Personal Hygiene Habits

Poor hygiene is the most common cause of diarrhea and intestinal worm infection. It is important to maintain cleanliness of one's self. Studies prove that hand washing is the most effective way of reducing the risk of acquiring diarrhea and intestinal worms. It should be done regularly, most especially during these situations:

- ✓ Before preparing or eating food
- ✓ After using the toilet
- ✓ After coughing or sneezing
- ✓ After handling garbage to prevent the spread of bacteria and viruses

Other good hygiene habits to maintain health and good nutrition:

Trim your nails

Keep your finger and toenails trimmed to prevent worm eggs and bacteria from hiding underneath.

Bathe Regularly

Clean your body with soap and shampoo your hair.

Brush and Floss

Brush teeth after meals or twice a day and floss daily. Brushing minimizes the accumulation of bacteria, which can cause tooth decay and gum diseases. Visit the dentist every 6 months for check-ups and cleaning.

Sleep tight

Get plenty of rest. Sleep 8- 10 hours to keep refreshed and ready to take on the day every morning.



Self-assessment Questions

Multiple Choices: Choose the correct answer.

1. These are very small white parasites that look similar to a tiny piece of white cotton.
 - a. Threadworms
 - b. Roundworms
 - c. Tapeworms
2. These are larger parasites and can grow up to 30 cm in length
 - a. Threadworms
 - b. Roundworms
 - c. Tapeworms
3. These worms are far more common in animals than in humans but transmission is still possible through consumption of undercooked and infected meats.
 - a. Threadworms
 - b. Roundworms
 - c. Tapeworms
4. This is the most common reason for the spread of worms.
 - a. Hand washing
 - b. Poor hygiene
 - c. Trimmed finger nails
5. It is the most effective way of reducing the risk of developing worms.
 - a. Hand washing
 - b. Poor hygiene
 - c. Trimmed finger nails

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Simple Physical Activities for Healthy Mind and Body



Nutrition Education Module 5

Learning objectives:

1. Understand the importance of physical activity and exercise for optimum health.
2. Be able to encourage children to engage in physical activities and exercises;
3. Be able to differentiate exercise and physical activity;
4. Appreciate the benefits of physical activity and exercise; and
5. Learn suggested physical activities and exercises for school age children.

Exercise is integral in achieving overall health. When partnered with proper nutrition, optimum well-being is highly attainable.



In the current era of digital devices, encouraging children to engage in physical activities is as difficult as influencing them to eat their vegetables and fruits. They are increasingly exposed to hand held devices causing them to develop habits with very minimal physical activity. It is now more challenging to invite them to outdoor activities like gardening or to the different *laro ng lahi* we have such as *patintero*.

Quick Facts

In the 2013 National Nutrition Survey of the Food and Nutrition Research Institute (FNRI-DOST), 3 out of 10 Filipino adults are overweight or obese, a very high prevalence of physical inactivity was found among adults. **Globally, physical inactivity has also been identified as the fourth leading risk factor for mortality, causing an estimated 3.2 million deaths (WHO).**

Act now!

Teach our young school children the importance of physical activity. Introducing them to its benefits and roles on health can make an impact on their daily habits as early as now. And if paired with proper nutrition, children can achieve optimal health and development.

What is Physical Activity?

Any bodily movement produced by skeletal muscles that requires energy. This includes:

- ✓ Household chores
- ✓ Transportation
- ✓ Leisure
- ✓ Occupational activities
- ✓ Home and family care
- ✓ Recreational activities or sports.

Classifications:

Baseline Physical Activity

It pertains to daily, light-intensity activities we usually do such as standing, walking, and lifting.

Health Enhancing Physical Activity

Physical activity, when added to baseline activity, produces health benefits. Brisk walking, jumping rope, dancing, lifting moderate to heavy objects, climbing on playground equipment at recess, and doing yoga or Zumba are some examples.



Sitting is the new smoking of this era.

Benefits of Regular Physical Activity at Correct Intensity:

- ✓ Reduces the risk of death by 40%
- ✓ Lower risks of colon cancer by 60%
- ✓ Reduces incidence of diabetes by almost 40%
- ✓ Reduces incidence of high blood pressure by almost 50%
- ✓ Can reduce the risk of developing Alzheimer's disease
- ✓ Can decrease depression as effectively as medications or behavioral therapy
- ✓ Regular physical activity has been shown to lead to higher scores for adolescents
- ✓ In elementary school setting, regular physical activity can decrease discipline incidents involving violence by 59% and decrease out-of-school suspensions by 67%

Exercise is indeed a medicine. Looking at the list above, these are the common diseases among adults. Hence, it is crucial to avoid physical inactivity at the early age of school children and fight one of the leading causes of ill-health. Otherwise, it can pose a greater risk to individuals than other risk factors.

Be Active and Be Productive

Allow children to be physically active. Let them play or involving them to do some household tasks can be a good practice.

Exercise may not only help in achieving overall health but may also assist a child's holistic development. It can even help improve school performance and discipline.

Increasing Daily Activities:

- ✓ For all individuals, doing some activities is better than doing none at all. Even small increases in baseline activity can improve overall health. Increasing baseline activity (e.g. activities of daily living) increases energy expenditure, which can help maintain a healthy body weight. If these baseline activities are weight-bearing, they may improve bone health as well.
- ✓ Walking short distances instead of taking a vehicle may help reduce traffic congestion and may decrease pollution. Baseline activities has other benefits than health.
- ✓ Baseline activities help build a culture where physical activity is the social norm.
- ✓ Short duration of activities are appropriate for people who were inactive and have started to gradually increase their level of activity. These are also for other individuals whose activity may be limited by other conditions.

Keep moving!

Physical Activity Recommendations for Children (5-12 years)

Active Travel:

Walking, cycling, stair climbing



Active Daily Tasks:

Some household and school chores are scrubbing or mopping floors, fetching water in a pail, raking leaves, bathing a dog, rearranging household furniture, or similar activities at home or school.

Encourage children to help-out in some of the household or school chores not only to develop responsible character but also to keep them healthy and active. Ensure that chores given to children are manageable and safe. Guidance and supervision is advised for the safety of the children.

Exercise, Dance or Sports:

Program physical activity for 20-30 minutes daily such as sports or active games. Activities that are being done in physical education subjects may help add to children's active lifestyle.

A 10 minute daily exercise is beneficial to health. It will improve your fitness level. Enjoy quick breaks or short episodes of activities leading to complete daily physical activity requirements for long-term health benefits.

Encourage children to choose their own sport or physical game they truly enjoy. This will help keep them be active.

High Impact Play (unstructured spontaneous):

Activities pertaining to high impact active play on most, if not, all, days of the week such as running, jumping, hopping, skipping, *luksong tinik*, *patintero*, *tumbangpreso*, *agawan base*, and other *laro ng lahi*. Walking, stair climbing, climbing trees, and playground activities such as jungle bars, ropes, and other similar activities are also recommended. Guidance and supervision is advised for the safety of children.

Physical Activity Recommended for Adolescents to Young Adults (13-20 years)

Filipino adolescents and young adults should engage in at least 60 minutes of daily physical activity consisting of any or combination of the following physical activities.



Active Travel:

Walking, cycling, stair climbing



Active Daily Tasks:

Same as activities for children ages 5-12 years old.

Exercise, Dance or Sports:

Teens and young adults need at least 40 minutes of programmed physical activities such as fitness related, rhythmic, or sports activities. For fitness goals, the minimum is a continuous 20-30 minutes for at least 3-5 times a week.

High Impact Play (Unstructured Spontaneous Play):

At least 20 minutes of sustained moderate to vigorous physical activities resulting in rapid breathing such as brisk walking, jogging, local games (*tumbang preso*, *agawang base*, etc.) and dancing.

Muscle Strengthening and Flexibility Activities:

At least 2-3 times a week of activities that build muscle, bone strength and flexibility such as weight bearing calisthenics and load bearing exercises involving major muscle groups.

References:

Ian Curt Sarmiento, Nutrition for Exercise and Sports, 2014
Philippine National Guidelines on Physical Activity, 2015
Strength and Conditioning Inc. Philippines, 2015
Your Prescription Health Series, Exercise-Is-Medicine, Philippines, 2015

Feeding Babies Aged 0-6 months: Exclusive Breastfeeding



thenounproject.com

Breast milk is the only food a baby needs during the first six months

- It makes the baby grow strong and healthy.
- Breast milk gives babies all the food and water they need during the first six months of life.
- A baby's stomach cannot digest any foods except breast milk.
- Exclusive breastfeeding until the baby is six months old protects the baby against sicknesses. Exclusive breastfeeding means giving the baby breast milk only and nothing else.

Feed your baby only breast milk during the first 6 months

- Put the baby to your breast immediately after birth. A new born baby can suckle (feed) strongly.
- Give the first milk (colostrum) to your baby. It protects him/her from many diseases.
- Your breast milk has all the food and water your baby needs. Do not give any other water or foods in the first 6 months, it could make your baby sick (Example: with diarrhea).
- Breastfeed when the baby wants to feed, at least 8-10 times during the day and night.
- Regular breastfeeding will help your body to produce enough milk and keep your breasts from becoming swollen and painful.
- Never practice mixed feeding (which means combining breastfeeding with infant formula or other foods).
- Discuss with your health care centre which feeding method is suitable for your baby.

Breastfeeding your baby:

- Start breastfeeding immediately after birth and do not give any other food or drink.
- Immediately go to the clinic if you have cracked nipples or swollen breasts, or if your baby has sores or thrush in the mouth.
- After six months stop breastfeeding quickly (e.g. over 2 days to 3 weeks maximum).



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If you decide to give your baby infant formula (replacement feeding) you need to have:

- enough money to buy infant formula
- clean water and good sanitation
- a clean home and a cool, safe place to store the milk (a fridge or clean closed cupboard)
- enough cooking fuel to prepare the food- the means? to prepare your baby's food both day and night
- access to healthcare facilities
- good family support.
- do not breastfeed your baby once you have started giving infant formula.

TAKE NOTE!

Skin-to-skin contact between you and the baby is good for you and your baby in many ways. It also helps you to breastfeed your baby successfully.

- Have skin-to-skin contact with your baby right after birth. You and your child should not be separated after birth.
- Let the baby sleep close to you. That also makes it easier to feed him/her.

WATCH over your baby's weight and health through regular visits to the health care centre.

TAKE NOTE!

When breastfeeding, you need more food than usual because you have to feed two – yourself and your baby. Eat a healthy, balanced diet with plenty of foods that give you energy and help to protect you and your baby's health.

REMEMBER!

Wash your hands after changing the baby's clothing. This avoids spreading germs that can cause illness.

Grow Healthy and Smart with Iodine



Iodine is important because:

- ✓ It makes the brain and body function properly.
- ✓ It is essential to the healthy development of unborn babies and young children.
- ✓ It helps pregnant women deliver healthy babies.

Everybody needs iodine!

Sources of Iodine:

- ✓ Fish
- ✓ Seafoods
- ✓ Seaweeds
- ✓ Iodized Salt

In areas where it is hard to get seafish and seafood, iodized salt is an important part of every diet.



Lack of iodine results in:

- ✓ Poor school performance in children
- ✓ Mental retardation
- ✓ Impaired mental and physical development of the child during pregnancy (Cretinism)
- ✓ Goiter

Everybody needs enough iodine in their diet to stay healthy and prevent goiter. Pregnant women and breastfeeding women, and young children need enough iodine to make sure the child develops well, mentally and physically. Iodine helps regulate nerve and muscle function, body temperature, growth, reproduction, and other body functions.



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Sources of iodine found in our diet:

- 1 large egg can provide 15-25 % of the recommended daily intake of iodine for Filipinos (depending on age group).
- 1 cup of boiled mature *patani* beans has a little more than 10% of the recommended daily intake of iodine for both children and adults.
- 1 serving (85 grams) of shrimp contains around 25% of recommended daily intake of iodine for Filipinos (6 years old and above) and almost 40% for children 5 years and below.

Use Iodized Salt!

- ✓ Always use iodized salt when cooking and eating family meals.
- ✓ Make sure the salt you buy carries the label "iodized".
- ✓ Add iodized salt to food on the table or when it is nearly cooked. Do not cook iodized salt too long, it destroys the iodine.



Use Salt in Moderation

- ✓ Too much salt is not good for your heart and blood pressure. **A teaspoon of salt** is the recommended intake per day.
- ✓ Use herbs, spices, garlic and onions, or vegetables to flavor foods instead of too much salt.
- ✓ Instant food, condiments, chips and other preserved goods may contain high amounts of salt. Make sure to check the labels.
- ✓ The more processed foods you consume, the less table salt you should use.

Adapted from Healthy Eating Resources, FAO, 2009

Healthier Bodies with Vitamin A



We need Vitamin A because:

- ✓ Protects against illness
- ✓ Helps body to recover more quickly from illness
- ✓ Promotes eye health for good vision
- ✓ Helps to keep the skin, gut, hair and lungs healthy.

Vitamin A can be found in variety of plant and animal-based foods.

Sources of Vitamin A:

Orange and yellow vegetables:

- ✓ Orange and yellow *kamote*
- ✓ *Kalabasa*
- ✓ Carrots

Green leafy vegetables:

- ✓ *Saluyot, talinum, kamote tops*
- ✓ *Kulitis, pechay, sigarilyas*
- ✓ *Kangkong, mustasa, malunggay*

Orange and yellow fruits:

- ✓ Ripe mangoes, *papaya*
- ✓ *Tiesa*, and tomatoes

Animal Sources:

- ✓ Liver (chicken, pork, beef)
- ✓ Eggs (egg yolk)
- ✓ Milk, butter, margarine and cheese

Foods for recommended daily Vitamin A intake:

½ medium piece (or 1/2 cup) of boiled orange *kamote* can provide 100% of recommended daily intake of Vitamin A for children (6-12 years old) and almost 80% for adults (19 years old and above)

1 cup of *kalabasa* (boiled) can give children (6-9 years old) 15 % of their daily recommended Vitamin A intake

1 cup of boiled leaves of *katuray* or *kulitis* can provide more than 100 % of the recommended vitamin A intake for children, teenagers (except 16-18 year-old males) and adults (19 years old and above). Nonetheless, the same amount of this food can give males (16-18 years old) almost 80% of recommended daily vitamin A intake

1 cup of *saluyot* leaves (boiled) can give more than 100% of the recommended daily Vitamin A intake of children (6-9 years old) and almost 90% for 10-12 year old children.

1 serving (3/4 cup) of boiled *lagikway* leaves can give children (6-12 years old) more than half of their vitamin A recommended intake

1 slice (3/4 cup) of ripe *papaya* contains Vitamin A equivalent to 15% of the recommended daily Vitamin A intake of children (6-9 years old)



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Lack of Vitamin A results in:

- ✓ Low body resistance to disease
- ✓ Poor growth
- ✓ Eye sensitivity to bright light
- ✓ Inability to see in dim light or “night blindness”
- ✓ Dryness of the eye
- ✓ Blindness (in severe deficiency)
- ✓ Rough dry skin and membranes of nose and throat

Vitamin A deficiency is a threat to the health, sight, and lives of millions of children in the developing countries. People who do not get enough vitamin A are more likely to become sick and die. Children especially are at high risk. Thousands of children die every year because of lack of vitamin A.

Get Enough Vitamin A!

- ✓ Eat at least one vitamin-rich food per day. Alternately eat from variety of plant food and animal sources of vitamin A. Example, one medium-sized boiled orange sweet potato with butter for snack or 1 serving papaya or ripe mangoes after meals.
- ✓ Add green leafy vegetables to stews or soups or even in dishes like *sinigang*, *nilaga*, *tinola*, *sopas* and other soups. This will help add to your vitamin A intake at the same time enjoy your regular dishes without compromising flavor, most of the local green leafy vegetable have a neutral flavor except for *malunggay*.
- ✓ Introduce leafy vegetables at an early age. Give plenty of vitamin A-rich foods to children 6 months and older. It will prevent illnesses and night blindness.
- ✓ Let children enjoy their vegetables. Let them learn or see how to cook vegetables. Tell them how it can make them healthier or stronger every time they eat these vegetables.
- ✓ Vitamin A-rich food is recommended for pregnant and breastfeeding mothers to stay healthy and ensure their child grows healthy.

The darker the green vegetables are, the more vitamin A they have. Some fats and oils helps increase vitamin A absorption.

Breastmilk is the best source of vitamin A for babies under 6 months.

Warning!

Vitamin A supplements might be given to young children and women within 6 weeks after giving birth. High dosages of vitamin A supplements should not be given to women during pregnancy because it may pose harm to the unborn baby. Consult local health centers or a health care professional before taking any vitamin A supplements.

Stronger Bodies with Iron



Iron makes our bodies strong!

- ✓ Strengthens blood
- ✓ Builds muscles and brain
- ✓ Helps body to work properly



Well-balanced diet provides enough iron.

Sources of Iron:

- ✓ Legumes: beans, peas, lentils
- ✓ Dark green leafy vegetables: *kulitis*, *talinum*, *malunggay*, *pechay*, *saluyot*, *kamote* tops
- ✓ Liver, blood and other organ meat
- ✓ Red meat
- ✓ Eggs
- ✓ Whole grain cereals: *adlai*, purple glutinous
- ✓ Rice, brown rice

Iron from animal foods can be easily used by the body.



Lack of iron results in:

- ✓ Iron deficiency anemia
- ✓ Reduced physical capacity
- ✓ General weakness
- ✓ Reduced alertness and concentration
- ✓ Pale complexion
- ✓ Poor resistance to cold temperatures

Iron from plant-based foods is best eaten with animal-based foods or fruits.

Good fruits to eat with iron-rich plant foods are *dalandan*, *kalamansi*, *dayap*, *guava*, *kamias* and other local fruits rich in vitamin C



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1 cup of boiled *kulitis* leaves can give:

More than 1/2 of recommended iron intake for following age groups:

>6-9 years old children, both male and female

>males aged 10-12 years old and 16-29 years old

More than 25 % of the recommended daily iron intake for females aged 13 to 29 years old

1 cup of boiled leaves of Japanese malunggay, *katuray* and *saluyot* can provide:

Around 20% of the daily recommended iron intake of children aged 6-9 years old

Breast milk is the best source of iron for babies under 6 months.

Iron for Women

- ✓ Women and older girls should have more iron-rich foods because they lose iron during menstruation.
- ✓ During pregnancy, anemia can cause problems during delivery and hinders the healthy development of the child. Thus, pregnant women are often advised to take supplementary Iron.



Get More Iron

- ✓ Eat variety of foods everyday
- ✓ Eat fruits with or after meals to ensure better use of iron from food.
- ✓ Do not drink tea or coffee until 1 or 2 hours after meal to prevent reduction of iron absorption.
- ✓ Drink fresh fruit juice for beverages (*dalandan, santol, kalamansi* juice, *kamias* shake) – Vitamin C assists in iron absorption.
- ✓ Ensure that women and older girls in household eat plenty of iron-rich foods.
- ✓ Give iron-rich foods to children 6 months and older. Teach schoolchildren the value of local vegetables as source of nutrients. It helps them learn to eat green leafy vegetables (aside from meat) at an early age.

Adapted from Healthy Eating Resources, FAO, 2009