NUTRITION AND FOOD

SERVICE

Nutrition and Food Service

Table of Contents

`Section 1-- BASIC NUTRITION

▸ LEARNING OBJECTIVES

1.	**State that good nutrition is basic to good health.**
2.	**List the six key nutrients for good health.**
3.	**Identify the six food groups in the Food Guide Pyramid; give recommended serving ranges from each group.**
4.	**State six reasons why menu planning is important.**

BASIC NUTRITION

Good nutrition is the foundation of good health. Eating a variety of foods in proper amounts provides essential nutrients needed for normal body functions. Nutrients are needed to supply energy for growth, maintenance and repair, and to regulate body processes. A poor diet, poor choice of foods, or an unbalanced nutrient intake can result in a change in health.

The chart on the following page lists the six key nutrients, and their primary functions.

THE SIX KEY NUTRIENTS FOR GOOD HEALTH

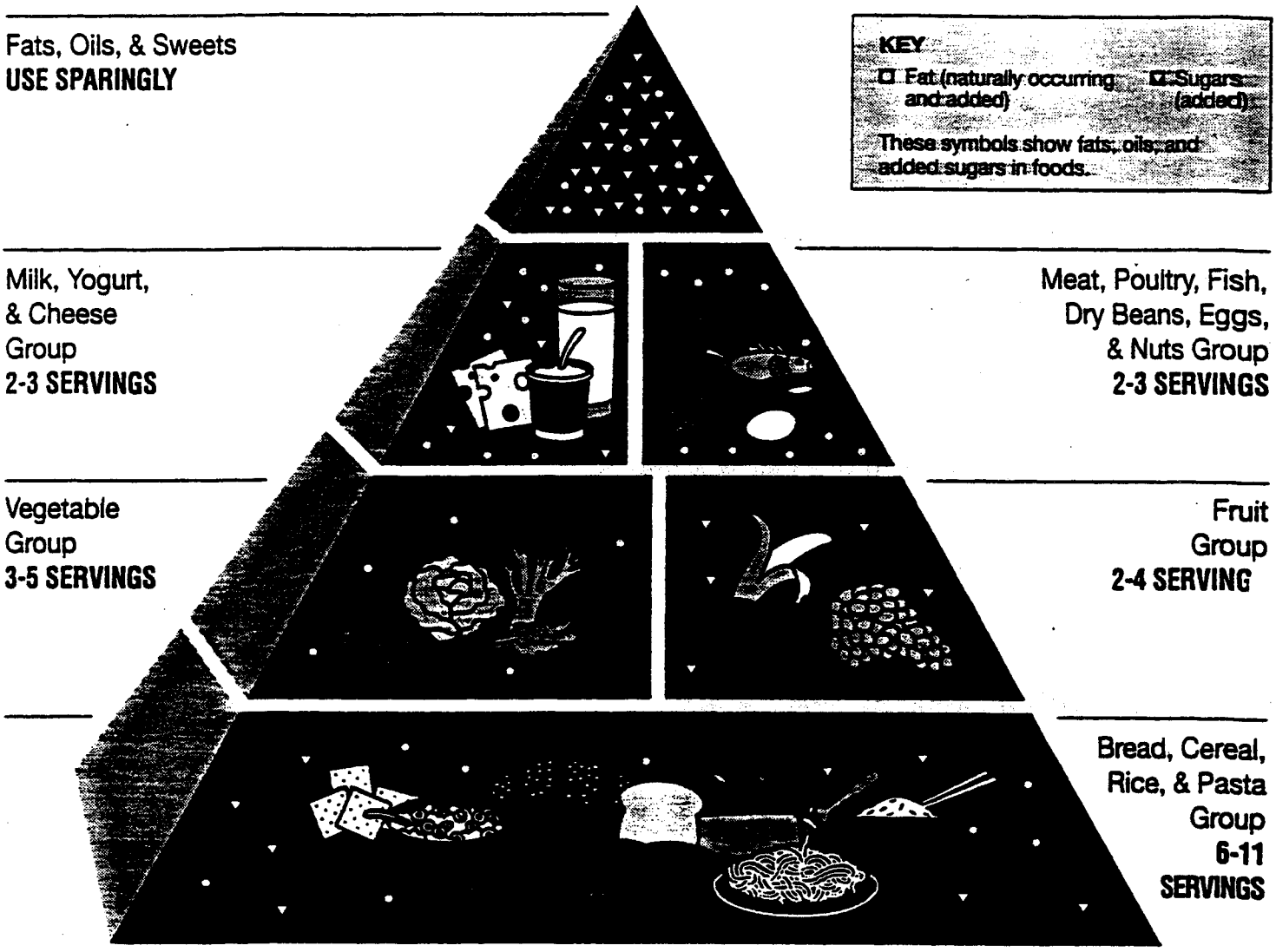
NUTRIENTS	ENERGY CONTENT	SOME MAJOR FUNCTIONS	
		BUILD & MAINTAIN BODY CELLS	REGULATE BODY PROCESSES
PROTEINS	4 calories per gram	*Part of every cell such as muscle, blood and bone. *Supports growth.	*Part of enzymes, some hormones and body fluids. *Helps carry oxygen to tissues. *Part of antibodies which increases resistance to infection.
CARBOHYDRATES	4 calories per gram	Supplies energy so protein can be used for growth and to repair body cells.	*Supplies fiber for regularity. *Helps use fats properly. *Helps regulate metabolism.
FATS	9 calories per gram	*Part of every cell; supports growth. *Protects and cushions organs	*Provides and carries fat-soluble vitamins (A, D, E, and K). *Reduces loss of body heat in cold weather.
VITAMINS (A, D, E, K, C, B complex, folic acid)	0 calories	*Assists in building and maintaining skin and mucous membranes. *Help the cells use energy. *Helps wounds and bones heal. *Increases resistance to infection.	*Promotes healthy skin, eyes, and vision. *Helps the nervous system to function normally. *Aids in digestion and a normal appetite. *Helps the body to make energy.
MINERALS (Calcium, Iron, Magnesium, Zinc)	0 calories	Part of every cell, especially bone, teeth, and nails.	*Helps muscles and nerves function properly. *Part of enzymes.
WATER	0 calories	Part of every cell. Protects and cushions cells.	*Regulates body temperature. *Helps remove waste from the body. *Aids in digestion and absorption of nutrients.

THE FOOD GUIDE PYRAMID

The U.S. Department of Agriculture has developed a Guide to Daily Food Choices called the Food Guide Pyramid. The Pyramid is an outline of what to eat each day. It is not a rigid prescription, but a general guide that lets you choose a healthful diet that fits individual circumstances.

The Pyramid calls for eating a variety of foods to obtain needed nutrients and the calories to maintain a healthy weight for individual heights, body builds and age ranges. The Pyramid also focuses on fat, because most American diets are too high in fat - especially saturated fat. Become familiar with the Food Guide Pyramid shown on the next three pages. Learn the types of food and number of recommended servings from each food group. Learn to plan meals and snacks which include these recommendations.

THE FOOD GUIDE PYRAMID*
My Guide to Daily Food Choices



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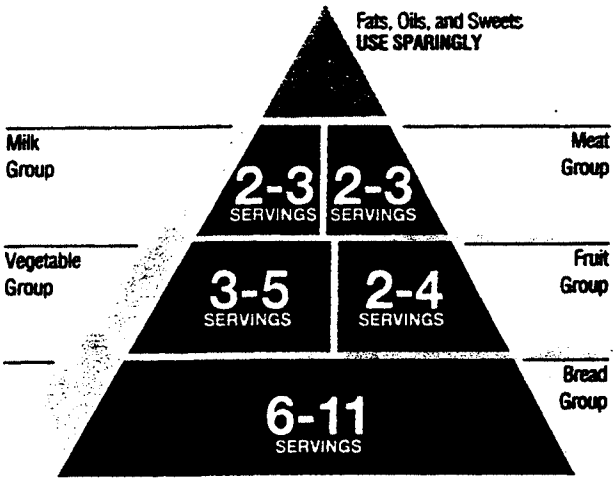
The Pyramid calls for eating a variety of foods to get the nutrients you need and, at the same time, the right amount of calories to maintain a healthy weight. Use this Pyramid to help you plan your daily food choices.

*Derived from USDA Human Nutrition Information Service

How to Make the Pyramid Work for You



How many servings are right for me?

The Pyramid shows a range of servings for each food group. The number of servings that are right for you depends on how many calories you need, which in turn depends on your *age, sex, size,* and how *active* you are. Almost everyone should have at least the lowest number of servings in the ranges.

The following calorie level suggestions are based on recommendations of the National Academy of Sciences and on calorie intakes reported by people in national food consumption surveys.

For adults and teens

1,600 calories is about right for many sedentary women and some older adults.

2,200 calories is about right for most children, teenage girls, active women, and many sedentary men. Women who are pregnant or breastfeeding may need somewhat more.

2,800 calories is about right for teenage boys, many active men, and some very active women.

For young children

It is hard to know how much food children need to grow normally. If you're unsure, check with your doctor. Preschool children need the same variety of foods as older family members do, but may need less than 1,600 calories. For fewer calories they can eat smaller servings. However, it is important that they have the equivalent of 2 cups of milk a day.

For you

Now, take a look at the table below. It tells you how many servings you need for your calorie level. For example, if you are an active woman who needs about 2,200 calories a day, 9 servings of breads, cereals, rice, or pasta would be right for you. You'd also want to eat about 6 ounces of meat or alternates per day. Keep total fat (fat in the foods you choose as well as fat used in cooking or added at the table) to about 73 grams per day.

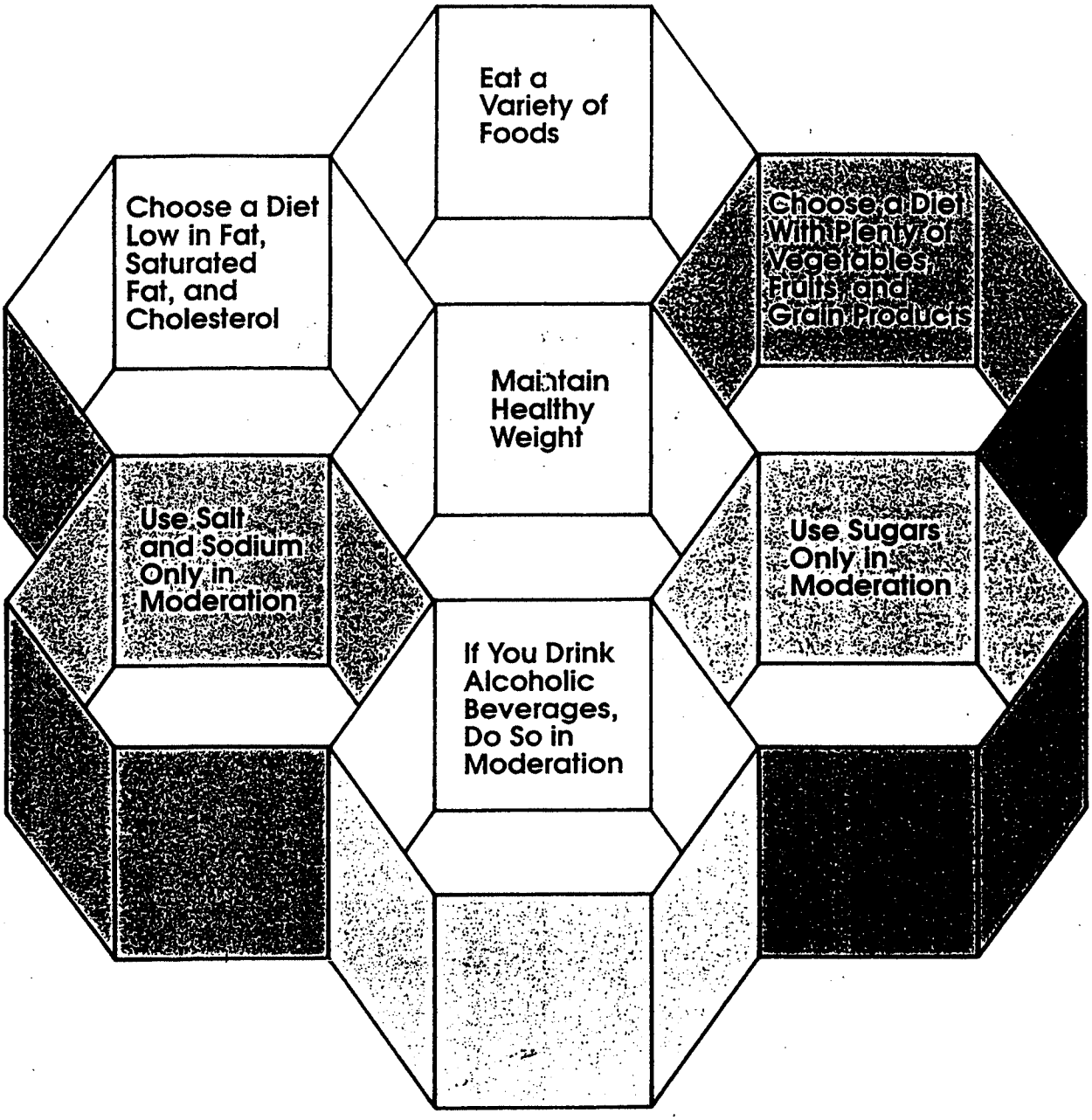
If you are between calorie categories, estimate servings. For example, some less active women may need only 2,000 calories to maintain a healthy weight. At that calorie level, 8 servings of breads would be about right.

SAMPLE DIETS FOR A DAY AT 3 CALORIE LEVELS

	Lower about 1,600	Lower about 2,200	Lower about 2,800
Bread Group Servings	6	9	11
Vegetable Group Servings	3	4	5
Fruit Group Servings	2	3	4
Milk Group Servings	2-3[1]	2-3[1]	2-3[1]
Meat Group[2] (ounces)	5	6	7
Total Fat[3] (grams)	53	73	93
Total Added Sugars (teaspoons)	6	12	18

1Women who are pregnant or breastfeeding, teenagers, and young adults to age 24 need 3 servings.
2Meat group amounts are in total ounces. (See Blackline Master 7 for details on how to count amounts of meat and other foods in this group.)
3See the Pyramid Food Choices Chart for details on how to count total fat (Blackline Masters 8 and 14).
4See charts on Blackline Masters 21 and 22 for details on how to count teaspoons of added sugars.

DIETARY GUIDELINES FOR AMERICANS



Use the seven guidelines together as you choose a healthful and enjoyable diet.

IMPLEMENTING GOOD NUTRITION

Menu Planning

Menus are the plan for good nutrition. Menus translate nutrition information into meals. Factors to be considered when planning menus include:

1. Menus should be planned using the Food Guide Pyramid.
2. Menus should be written at least one week in advance.
3. Portion sizes should be identified on the menus.
4. Other factors such as budgets, seasonal availability of foods, food preferences, kitchen equipment and schedule should also be considered.

A "cycle menu," which includes the above factors, promotes good nutrition and saves time. **A cycle menu is a series of written menus covering three to six weeks.** At the end of the three to six weeks, the entire series of menus is repeated. Two cycle menus are suggested to incorporate seasonal foods and cooking methods.

Importance of Using a Cycle Menu

Community residential settings are encouraged to use a cycle menu because:

1. The menu is planned to include the recommended foods and portions according to the Food Guide Pyramid and U.S.D.A. Dietary Guidelines.
2. It provides a basis for grocery shopping and food preparation.
3. It may be required for licensing and certification.
4. It saves time and money.

Each community residential setting should have someone designated to coordinate grocery shopping and meal preparation. Although you may not have major responsibility for menu planning, it is important to understand how nutritious meals are planned. For example, there may be times when a substitution must be made for part of a planned meal. Being familiar with the guidelines for menu planning will help you make the best substitution.

Snacks

Snacks may be a source of calories and nutrients. They may be a planned part of the cycle menu or served occasionally at other times. Snacks should be low in fat and high in fiber, or supply other nutrients or fluid necessary for good health. Factors to be considered in planning snacks are:

1. Individual nutrient needs
2. Food Guide Pyramid/Dietary Guidelines
3. Dental health
4. Chewing ability
5. General health

Examples of nutritious snacks and fluids are:

1. Low-fat cheese and whole wheat crackers
2. Graham crackers and low-fat milk
3. Low-fat yogurt with fresh fruit
4. Fruit juice
5. Fresh vegetables and low-fat dip

SECTION 2 - NUTRITION-RELATED ISSUES

▸ LEARNING OBJECTIVES

1. **Recognize that change in food intake or weight is a problem that must be reported.**

2. **Recognize that individuals may have prescribed modified diets to treat or control health conditions.**

3. **Recognize the importance of fiber in the diet.**

4. **Recognize and report signs of swallowing problems.**

5. **Recognize that individuals taking medications may require a change in food or fluid intake.**

6. **Recognize that food intake may be influenced by an individual's emotional health.**

A change in food intake or weight may be one of the first signs of illness or of a change in health status. Food acceptance and weight can also be altered due to changes in mental or emotional health, medication side effects, changes in environment, limited access to foods, or over-indulgence.

CHANGES IN APPETITE OR WEIGHT:

Occasional fluctuations in appetite, or refusal of a meal or particular food may be normal. However, if foods from one or more food groups are consistently refused, a registered dietitian should be notified. A significant change in weight should be reported to the

appropriate health care providers. Taking and recording weights regularly and accurately is an important part of monitoring a person's health.

FOOD INTAKE MAY BE INFLUENCED BY AN INDIVIDUAL'S EMOTIONAL HEALTH

Persons with short-term or chronic mental disorders are at increased risk for nutrition-related problems. They may not be able to prepare or eat adequate meals for themselves due to:

- Limited motivation
- Poor judgment
- Limited education
- Low income
- Inadequate living environment
- Limited social support
- Lack of independent living skills
- Unusual eating habits and behaviors
- Medication side effects
- Substance abuse

The above factors may promote or worsen chronic health conditions, such as malnutrition, extreme weight changes, ulcers, or diabetes. When these conditions occur along with a mental disorder, they may be more difficult to control. Individuals with mental disorders require ongoing monitoring, care, teaching, and support. Emphasizing nutritional care as part of daily activities will improve quality of life by maintaining health, reducing complications of chronic disease, and improving opportunities for independent living.

SWALLOWING PROBLEMS

Persons with chewing or swallowing difficulties (dysphagia) may be or may become poorly nourished if they are unable to take in adequate food or liquids. They may be at risk for choking or aspiration - that is, food, liquid, or other materials entering the airway or lungs, instead of the stomach.

Some signs of dysphagia or chewing and swallowing difficulty are:

- Gagging or coughing during or after eating or drinking
- Swallowing one bite many times
- A gurgly or "wet"-sounding voice
- Drooling
- Food pocketing, or food remaining in the mouth or throat after eating
- Breathing difficulties during eating or drinking
- Unexplained weight loss
- Unable to gain weight
- Low body weight
- Persistent unexplained fever or temperature
- Frequent respiratory infections or pneumonia
- Excessive movement of tongue, mouth, or head while eating or drinking

If a person shows signs of chewing or swallowing problems, an evaluation by a speech therapist, occupational therapist, and registered dietitian is needed. A videofluoroscopy (x-ray of swallowing) may also be done in a hospital or other health care facility. Recommendations will be made after the evaluation for specific ways the individual needs to eat and drink.

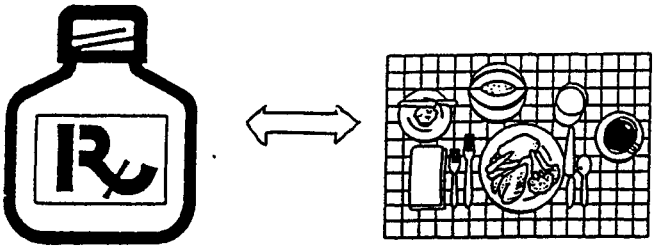
Recommendations may include:

- The use of adaptive eating aids
- Positioning, or ways to sit while eating or drinking
- The best type of food consistency
- Whether liquids should be altered to make them thicker

If a person with a chewing or swallowing difficulty has a specific eating plan, it is important to follow that plan. Modifications in eating, positioning, or consistency of foods or liquids should not be made unless specifically recommended by the professional team.

MEDICATIONS AND FOOD

Medications may affect the way food is used by the body; food can affect the action of the medication; or the medication may interfere with one's ability to eat. It is important to know whether the medication should be given with or without food. Follow the physician's and pharmacist's instructions and observe for any possible side effects. Report any unusual symptoms to the appropriate health professional, and ask questions if you need more information.



On the following page are examples of common side effects that affect nutritional status and ways to alleviate them:

SIDE EFFECTS	SUGGESTIONS TO MINIMIZE SIDE EFFECTS
Loss of appetite	1. Eat smaller, more frequent meals. 2. Eat high calorie/protein snacks.
Dry mouth	1. Drink plenty of fluids, both with and between meals. 2. Suck on sugarless hard candy or sugar-free chewing gum. 3. Moisten food by adding gravy, sauces, or margarine. 4. Avoid dry or salty foods or snacks.
Constipation	1. Eat plenty of high fiber foods such as vegetables, fruits, whole grain breads and cereals, dried peas and beans. 2. Drink plenty of water and fluids.
Increased appetite	1. Eat many high fiber, low calorie foods such as vegetables and fruits. 2. Drink plenty of water and low calorie fluids. 3. Avoid fats and sweets.
Nausea and vomiting	1. Take your medications with meals or right after meals (check with a health professional before making this change). 2. Try eating dry meals, and taking liquids between meals. 3. Avoid high fat and spicy meals. 4. Eat smaller, more frequent meals.

If a physician-prescribed modified diet has been ordered, consult with a registered dietitian or physician before implementing any of the above suggestions. For further suggestions, consult the appropriate health professional.

PAY CAREFUL ATTENTION TO THE FOLLOWING SUGGESTIONS:

1. **Read labels on all medication.**

2. **Follow the physician's and pharmacist's instructions about when to take medication and with what food or beverage (and, if any food or beverage should be avoided).**

3. **Inform the physician or health professional if any unusual symptoms occur after eating certain foods.**

4. **Ask questions if you do not understand instructions about the medication, or if the information you need has not been provided.**

5. **Eat a nutritionally balanced diet from a variety of foods, especially when taking medication on a long-term basis.**

DIETARY FIBER

An adequate intake of fiber and fluid will help prevent constipation.

WHAT IS FIBER?

Fiber is usually defined as the part of the plant material of foods we eat that is resistant to action by the digestive enzymes of the small intestine. Fiber cannot be digested or broken down and absorbed by the body.

HOW DOES FIBER WORK?

As fiber passes through the intestinal system, it works like a sponge attracting water. Fiber expands and holds water, resulting in a bulkier, softer stool that is more easily passed.

WHY IS DIETARY FIBER IMPORTANT?

An adequate intake of fiber helps maintain regular bowel elimination. Fiber intake may need to be increased in certain conditions, such as constipation, diverticulosis, and irritable bowel syndrome. Some studies show fiber may act as a protective mechanism against some cancers. Fiber may also help lower blood cholesterol levels, and may control blood sugar.

HOW TO INCREASE FIBER INTAKE -

So called "health foods," "special foods," or fiber supplements are not necessary. Daily intake of fiber can be increased by including two or more servings of the following foods at each meal. Choose snacks from the list on the next page:

BREADS: Choose products made from unrefined bran, whole wheat, buckwheat, rye, pumpernickel or cracked wheat. Read the ingredient label on store-bought baked goods. Look for **WHOLE** wheat flour listed as the first or second ingredient, not just wheat flour. The color of the bread in not necessarily an indicator of the fiber content of the bread. Raisin juice, caramel color, and artificial dyes may make the bread look more like whole grain, but the fiber content may be low.

CEREALS AND GRAINS: Eating a high-fiber cereal at breakfast is an easy way to increase fiber intake. Some examples of fiber rich cereals are: All Bran, Bran Buds, bran flakes, raisin bran, corn bran, shredded wheat, Grape Nuts, granola, and oatmeal. Tip - look for "bran" in the name. High fiber grains include: wild rice, rice bran, brown rice, corn meal, millet, wheat germ, wheat bran, whole wheat flour, buckwheat, groats, and bulgur.

FRUITS: When preparing fresh fruits, leave edible skins on whenever possible. Dried fruits such as figs, raisins, prunes, apricots, and dates are good fiber sources. Add fruit to breakfast cereals, muffins, breads, or pancakes.

VEGETABLES: Vegetables rich in fiber are: broccoli, brussels sprouts, carrots, corn, parsnips, peas, potatoes with skin, and spinach. Other vegetables also contain fiber. When preparing vegetables, leave on edible skin whenever possible and avoid overcooking vegetables.

DRIED PEAS AND BEANS: Soybeans, red beans, black eye peas, lentils, white beans, and split peas are examples.

FLUID INTAKE

For fiber to work in the body, adequate fluid must be available. Plain water is fine, but any liquids will do except those with caffeine. Caffeine increases excretion of water from the body. Healthy adults should aim for a total fluid intake of at least 64 oz. daily (eight 8-ounce glasses), including beverages at meals.

ADDITIONAL INFORMATION: Make diet changes gradually to allow time for the body to adjust to a higher fiber intake. Intestinal gas and bloating may occur at first, but this is only temporary. Very large amounts of fiber can have long-term adverse effects. Vitamin and mineral depletion, diarrhea, and bowel impaction can occur. Bowel impaction can also occur with moderate amounts of fiber, if not enough fluid is consumed. It is important to balance intake of fiber and fluid according to individual needs. Prune juice, although not high in fiber, helps promote motility (movement) of the intestinal tract, and may be recommended.

Modified Diets

Modified diets may be ordered to treat medical or chronic health conditions. A physician will write the appropriate diet order. There must be a written diet order before making a change or alteration in food intake. A registered dietitian or physician will provide specific information about the diet.

A modified diet is part of the individual plan of service. Foods used in training programs and activities must be coordinated with the modified diet. The registered dietitian can help identify appropriate snacks and reinforcers.

Diets may be altered in calories, nutrients, and/or textures. List examples of modified diets:

1.

2.

3.

4.

5.

*****Always notify the registered dietitian when a modified diet is ordered!**

SECTION 3 - MEAL TIMES

▸ LEARNING OBJECTIVES

1. **State two reasons for serving food within 15 minutes after removing from stove, oven or refrigerator.**

2. **State that meals and food-related activities provide opportunities for socialization, skill development, community integration, and developing positive attitudes toward food and eating.**

Meal times are a significant part of everyone's day. They satisfy nutritional, social and emotional needs. They give persons and staff a chance to talk, enjoy food, and be with their friends.

Preparing for Meal Time

Prior to every meal, hands should be washed. Food should be served within 15 minutes after removing it from the stove, oven or refrigerator. Foods heated in a microwave may develop "hot spots" or excessively high temperatures. Use caution when serving to avoid a burn.

Reasons why food should be served within 15 minutes:

1. **Food safety:** Food kept too long at room temperature provides ideal growing conditions for food-borne bacteria that can cause illness.

2. **Hot food may cool down** and not be as acceptable.

3. **Cold food may warm to room temperature** and not be as enjoyable.

If an individual eats slowly, it may be necessary to re-heat hot food after approximately 20 minutes. Or, give only a portion of the food at one time. Keep the rest of the food hot on the stove or in the oven at 140° F or higher; keep cold food in the refrigerator.

Food Reinforcers/Rewards

Food is enjoyed by most people and is frequently used as a reward. Use of food rewards/reinforcers should be reviewed by the Interdisciplinary Team. Certain foods may not be appropriate for people with diet restrictions. Other reasons why a food reward may not be appropriate:

1. A person on a special/modified diet may not be allowed food between meals.

2. A person on a special/modified diet may not be allowed certain types of food (example: person on a low-sodium diet should not have salted popcorn; a person on a chopped diet should not have a whole raw carrot.)

3. A reward given directly before a meal may interfere with mealtime appetite.

The Interdisciplinary Team works together to provide appropriate food for each individual.

Some ways of individualizing food intake and meals include:

1. Some individuals with physical limitations may need adaptive eating equipment.

2. Some people need their food chopped, ground, or pureed because of chewing/swallowing disorders.

3. Some people need a special diet for weight reduction, diabetes, heart disease, or other health reasons.

4. Some people may need their fluids thickened due to a swallowing disorder.

5. Some people with physical disabilities need to be positioned properly to help them eat.

Using Meals As A Learning Tool

Staff should serve as role models for individuals during meals. When staff set a good example, individuals have the opportunity to learn good manners and eating habits. Meal times also offer the opportunity to develop the skills listed below.

SOCIALIZATION:

1. Encourage individuals to interact by serving family-style meals.
2. Role modeling: staff interacting with individuals and other staff.
3. Encourage food-related activities outside of the home.

SKILL DEVELOPMENT:

1. Staff model the appropriate way to eat.
2. Individualized meal-time programs to teach utensil use and table manners.

DEVELOPING POSITIVE ATTITUDES ABOUT FOOD/EATING:

1. Expose individuals to a variety of different foods and eating experiences.
2. Encourage individuals to assist in meal preparation and menu planning.
3. Provide a pleasant meal time environment (soft music, attractive place settings, etc.)

COMMUNITY INTEGRATION:

1. Take individuals to a restaurant for a meal.
2. Attend community activities that involve food.

SECTION 4 - CHOICE AND INDEPENDENCE

▸ LEARNING OBJECTIVES

1. **Identify five factors that influence food choice or preference.**
2. **Identify three ways to incorporate individual food preferences into menus.**
3. **Recognize that meals and food-related activities provide opportunities to develop independent living skills.**
4. **State three ways or methods to teach independent living skills.**
5. **State that individuals living in community residential settings have the right to receive three nutritious meals a day, served in a safe and sanitary manner.**

Meals and food-related activities provide opportunities for individuals to express food preferences and develop independent living skills. Examples of activities that individuals should be involved in are: menu planning, shopping, putting food away, cooking, portioning, and clean-up. Nutrition and its relationship to health can be discussed and reinforced during these activities. Benefits range from: sensory stimulation from observation, touch or smell, to using math, reading, and organizational skills in all areas of meal preparation. Teaching and learning occur in a number of ways. Observation, hands-on participation, and formal classes are some examples. Staff serve as important role models during the learning process. Individuals should be encouraged to express food preferences.

Factors that influence food preferences:

- Ethnic background/religion
- Budget
- Media messages TV, radio, print ads
- Availability
- Convenience in preparation
- Peer group/status
- Coupons
- Available equipment
- Cooking skills
- Reading skills

Factors influencing food preferences (cont.):

- Health conditions
- Activity/Age
- Eating at home vs. restaurant (type of restaurant)
- Holidays
- Family food preferences
- Altered taste due to medication side effects
- Age
- Attitudes of meal planners

Ways to incorporate individual food preferences:

1. Include individuals in menu planning sessions.
2. Use a selective menu.
3. Maintain a list of food likes and dislikes for each person.
4. Maintain a list of food substitutions for food dislikes. These substitutions should be nutritionally similar to the disliked food.
5. Work food preference into a specially-planned menu that periodically honors a particular individual.

Recognizing individual preferences, and incorporating those preferences into meals, while following good nutrition guidelines can help ensure a more enjoyable meal and good food acceptance by the individual.

SECTION 5 - FOOD SAFETY

▸ LEARNING OBJECTIVES

1. **State that improper food handling can cause food-borne illness.**
2. **State that proper handwashing may prevent food-borne illness.**
3. **List four signs/symptoms of food-borne illness.**
4. **State that expectations for safe food handling are the same for both staff and individuals in community residential settings.**

Bacteria are present everywhere - in the air, in food, on our hands, mouth, and skin, on animals and insects, on land, and in the water. Most of the time, these bacteria are not present in large enough quantities to be harmful. But when they are in or on food, they can multiply quickly and cause food-borne illness, or food poisoning. Food-borne illness can be very serious - even fatal. Individuals who are elderly, have chronic health conditions, or are poorly nourished are more likely to be severely affected.

Symptoms of Food-Borne Illness

There are several different kinds of bacteria that can cause food-borne illness. The symptoms, however, are usually similar, and include:

- severe abdominal cramps
- diarrhea
- nausea
- vomiting

These symptoms can appear anywhere from 30 minutes to 2 weeks after eating contaminated food, but most often, people get sick within 4 to 48 hours. Sometimes, it's not easy to tell if the symptoms were caused by food poisoning or another illness.

REMEMBER: If nausea, vomiting, diarrhea, or cramps occur, notify a health professional immediately!

BOTULISM

There is one type of food-borne illness that is much more serious: botulism. **Botulism is the deadliest, although the rarest, kind of food poisoning.** The bacteria causing botulism produces a poison. Symptoms of botulism are: double vision, swallowing or breathing problems, and paralysis.

The risk of botulism is greater when canned foods are not processed properly. That is the reason home canning is not allowed in most community residential settings. **Never taste, or allow individuals to taste or eat food from leaking, bulging, or damaged cans; from cracked jars or jars with loose or bulging lids; from containers that spurt liquid when opened; or taste any canned food that has an abnormal odor or appearance.**

The most common food-borne illnesses are caused by improper handling during shopping, storing, preparing or serving food. If food becomes contaminated with bacteria through coughing or sneezing, through drainage from open cuts or sores, or through soiled hands, bacteria may have time to multiply before the food is eaten. The large number of bacteria is then capable of causing illness.

Three very important ways to help reduce the risk of food-borne illness:

1) **HANDLE FOOD SAFELY**
2) **MAINTAIN PROPER FOOD TEMPERATURES**
3) **WASH HANDS FREQUENTLY.**

1. Handle Food Safely

Foods that are more likely to cause food-borne illness if not handled properly are: meats, poultry, gravies, eggs, milk, custards, stuffing, fish and shellfish, cream sauces, and mixed dishes containing any of these foods.

To reduce the risk of contaminated foods:

- Wash and sanitize utensils, counters, cutting boards. Wash your hands thoroughly before and immediately after handling these items.

- Always use a sanitized cutting board and knife for preparing foods that will not be cooked.

- Avoid eating foods containing raw or undercooked eggs because they are frequently contaminated with salmonella bacteria.

- Discard foods portioned in serving bowls for family-style meal service and which remained on the table during the meal. These food items may have become contaminated.

2. Maintain Proper Food Temperatures

Bacteria need warm temperatures and moisture to multiply in food. **The DANGER ZONE for bacteria to grow is 40°F to 140°F. Room temperature is within THE DANGER ZONE.** When foods are being prepared for a meal, they will be exposed to these temperatures. It is important to limit the time food is at room temperature during preparation. Through all stages of shopping, food storage, preparation and service, foods should be maintained at temperatures either above or below the DANGER ZONE as much as possible.

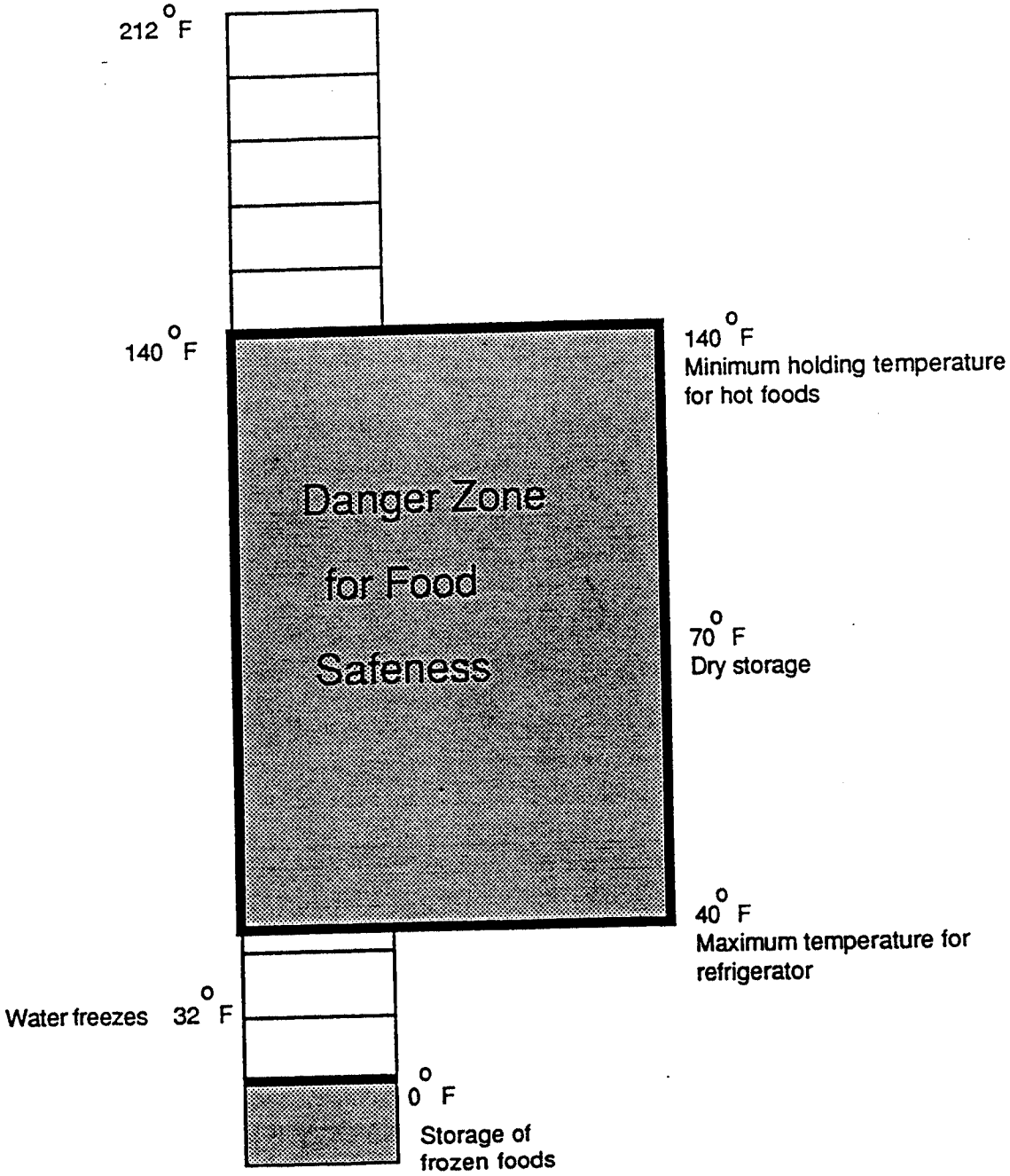
To help maintain safe food temperatures:

1. When shopping, buy cold food last. Take it straight home, and refrigerate it immediately. Never leave food in a hot car!
2. Check the temperature of the refrigerator and freezer frequently to ensure foods are cold enough:

   -below 40° F. for a refrigerator, and
   -below 0° F. for a freezer.

3. Thaw foods in the refrigerator or, in the microwave just before preparation. Do not thaw foods on the kitchen counter or in the sink. The thawing process usually takes 24-48 hours in the refrigerator.
4. Prepare foods as close to mealtime as possible.
5. Cook foods thoroughly to kill harmful bacteria. Use a thermometer to check temperatures before serving the food.
6. If necessary, hold food above 140° F until serving time by keeping it on a low or warm setting on the stove, or in a 250° F oven.
7. Portion food just prior to service. Serve within 15 minutes.
8. Return extra portions of hot food to a source of heat until the meal is over.
9. Divide large amounts of leftovers into small, shallow containers for quick cooling. Cover, label and date all leftovers and refrigerate immediately.
10. Keep cold foods refrigerated at 40° F or lower until just prior to the meal. Once food is portioned, return extra food to the refrigerator.

CRITICAL TEMPERATURES FOR FOOD



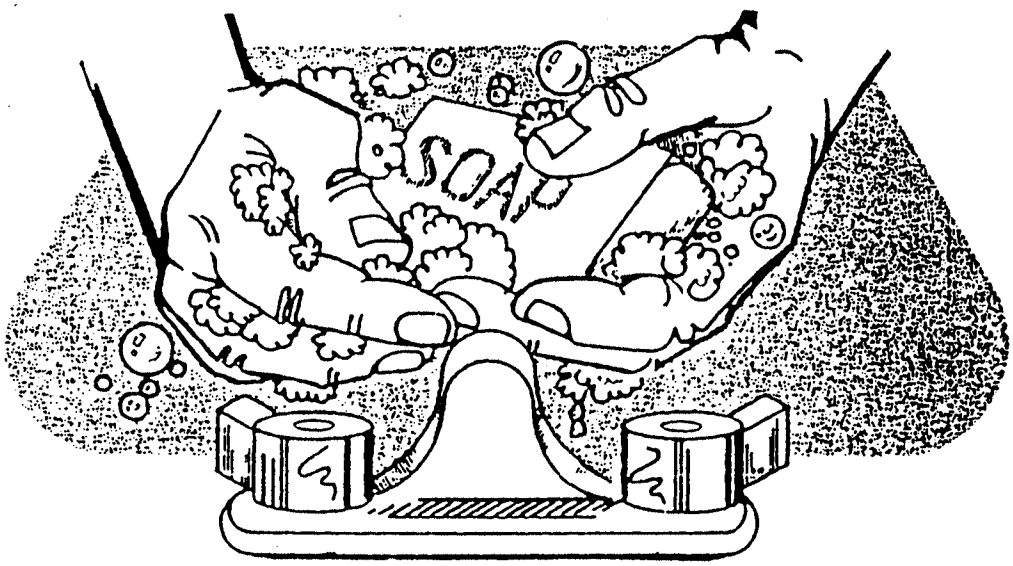
3. Proper Handwashing

The single most important factor of safe food handling is the control of bacteria through handwashing. Bacteria hitch rides on insects, animals and humans, and then transfer to food. Washing hands thoroughly and frequently can reduce the spread of bacteria. Here are some examples of when and why handwashing is important when preparing and serving food:

Whens and Whys of Washing Hands

WHEN	WHY
after using a handkerchief or tissue, after coughing or sneezing.	Bacteria in the nose and mouth can be spread to food by coughing or sneezing.
After handling hair.	Hair is prime breeding ground for bacteria.
After using the toilet & helping others in the bathroom.	Fecal matter contains harmful bacteria.
After eating or smoking.	Saliva on hands or cigarette is transmitted to food. Exhaling smoke launches saliva drops into air & onto food.
Before beginning to prepare food, & whenever you return after leaving the kitchen.	Activities such as petting animals, handling items soiled with body waste or fluids, or touching door knobs transfer bacteria to hands.
After handling raw, unclean food - particularly meat & poultry.	These products in raw form most likely contain bacteria.
After contact with unclean equipment, floors, work surfaces, soiled clothing, and rags.	Bacteria hitch-hike from dirty surfaces to hands to food.
After handling soiled dishes & flatware.	Soiled dishes & flatware are an excellent breeding ground for bacteria.
Before handling clean dishes & flatware.	To avoid contaminating clean surfaces.

METHOD OF HAND WASHING



- **Use SOAP and WARM RUNNING WATER**
- **RUB your hands and forearms vigorously for 15-20 seconds**
- **WASH ALL SURFACES, including:**
  - **backs of hands**
  - **wrists**
  - **between fingers**
  - **under fingernails and rings**
- **RINSE Well**
- **DRY hands with a paper towel**
- **Turn off the water using a PAPER TOWEL**

SECTION 6 - SHOPPING

▸ LEARNING OBJECTIVES

1. **State that a shopping list is based on written menus.**
2. **List signs that food may not be safe, wholesome or fresh.**
3. **State at least four types of information that can be found on a food label.**

Shopping for groceries is a challenging assignment for community residential setting staff. The food needed to prepare meals according to the cycle menu must be purchased on a regular schedule to ensure quality and freshness. Limited availability of foods due to season or price may require menu adjustments. Shopping trips also give individuals in community residential settings an opportunity to learn independent living skills.

Preparing the Shopping List

The shopping list is a complete list of foods compiled from the cycle menu and recipes. Food for one week is usually purchased at one time. A list helps to remember all of the products needed, and saves time in the store. Steps to preparing the shopping list include:

1. Review the menu for the week and all the recipes.
2. List all foods and ingredients needed to prepare all the meals.
3. Think about individual likes and dislikes, and make substitutions, if necessary.
4. Confirm the amount of food to purchase by checking whether some foods are already present. For example, if the shopping list calls for three cans of tomato soup, and there is one can in the cupboard, then only two cans need to be purchased. Checking food and supplies already available helps eliminate over-buying, keeps food costs down, and decreases food waste.

5. Organize your list by similar foods. Adapt the list to the layout of the store where shopping is usually done.

6. When a cycle menu is followed, shopping lists written for each week of the cycle can be reused to save time writing a new list each week. It will still be necessary to check the food supplies already on hand.

To help guarantee freshness, quality, and be safe for human consumption, foods must be clean and free from spoilage. Damaged packages and dented or rusty cans should never be purchased. Meat, poultry, milk products, and canned and frozen foods must be government-inspected.

- Home canned foods are NOT allowed in adult foster care small and large group homes or congregate facilities, child care centers, child-caring institutions, and children's camps.

- Home canned foods may be used in adult foster care family homes, foster family homes for children, foster family group homes for children, family day care homes, and group day care homes. In these homes, the preparer of the canned food MUST follow the Michigan Cooperative Extension procedures for safe canning.

HELPFUL HINTS TO MAKE SHOPPING EASIER AND LESS COSTLY:

- Study store ads while preparing the shopping list; make appropriate menu substitutions to take advantage of sale items.
- Use coupons for <u>needed</u> items.
- Shop when you are not rushed or distracted by crowds of other shoppers. Avoid shopping when hungry!
- Shop from the planned list to avoid buying items on impulse.

- Select store brands and generic products when available if they are cost-effective.
- Buy food in quantity if adequate storage space is available, and if it can be used within a reasonable amount of time.
- Use the unit pricing information on the shelves to help make price comparisons on similar products.
- Choose the quality or grade of food according to how the food will be used.
- Select quality meats and produce:

    - Fresh fruits and vegetables that are clean, crisp, and free of bruises.
    - Lean, well-trimmed cuts of meat that are bright red (beef and lamb) or light pink (pork).
    - Clean poultry without bruises or discoloration.
    - Fish with firm flesh, shiny scales and fresh smell.

- Observe the dates on packages that tell when a product should be purchased or used.
- Purchase refrigerated and frozen foods last so they remain cold.
- Take food home and store immediately after purchasing. Meat and poultry should be re-wrapped (remove store wrapper) and labeled and dated. Freeze ground meat if it will not be used within two days.

WHAT'S ON A LABEL?

The label on food packages tells you what is inside the package. The picture on the label shows what the product looks like. The Food and Drug Administration and the U.S. Department of Agriculture regulate food labeling laws. Some of the information required for all food labels includes:

- Common name of the product (example: soup, bread, crackers).

- Form of the product (example: whole, chopped, sliced).

- Name and address of the manufacturer, packer, or distributor.

- Net weight of the product (example: ounces, pound).

- List of ingredients, in descending order by weight.

- Nutrition information.

Nutrition information is given for a "serving" of the food. A label will tell how many calories, and how many grams of fat, protein and carbohydrate, are in one "serving." Sometimes, the serving size is different from the amount eaten. When this is the case, the nutrition information has to be adjusted to be accurate. The label also describes the percent of specific vitamins and minerals contained in the food.

Since May, 1994, manufacturers of all food products are required to modify their food labels to make them easier to use and compare with similar foods. These changes will help make shopping easier.

SECTION 7 - SAFE FOOD STORAGE

▸ LEARNING OBJECTIVES

1. **Identify the food temperature danger zone.**
2. **Identify the correct temperature for refrigerator, freezer and room temperature (dry) storage.**
3. **List one way to safely store food in each of the following areas:**
    a. **Cupboard or pantry**
    b. **refrigerator**
    c. **freezer**
4. **State that foods should be stored away from poisonous or toxic materials, including cleaning supplies.**

Because of the high cost of food, it makes good sense to maintain the quality of the food purchased. Knowing how to store food properly, and how long it will keep brings many benefits:

- **The food will be safe to eat.**

- **Flavor and texture will be retained.**

- **Nutrient content will be preserved.**

- **Money isn't wasted on spoiled food.**

Food storage is divided into three types: **refrigerator, freezer, and dry, or cupboard storage.** In each of these areas, proper and safe temperatures are important to control the growth of disease-producing organisms. These organisms grow fast in food at temperatures between 40° F. and 140° F. **(DANGER ZONE!).**

Refrigerator and freezer storage keeps food below the temperature danger zone for bacterial growth. Cupboard storage is usually at room temperature, but foods have been packaged and preserved in other ways to make them resistant to bacterial growth. In all types of storage, proper resealing of packages and observing package dates for safe storage also preserves food quality.

TIPS ON SAFE REFRIGERATOR STORAGE

- Recommended temperature is from 34-40° F.

- Keep a thermometer in the warmest spot of the refrigerator - usually the door or top shelf.

- Leave space between items, to allow for better air circulation.

- Package foods in foil, plastic wrap or bags, or airtight containers.

- Remove spoiled food promptly.

- Keep raw and cooked food separate.

- Cover, label and date all foods.

- "Leftovers" should be refrigerated immediately after a meal in shallow containers, and covered, labeled and dated. If not used within 48 hours, they should be discarded.

- Refrigerate packages of raw meat, poultry, or fish on a plate, so juices don't drip on other food.

- **POWER FAILURE?**

  Without power, the refrigerator section will <u>usually</u> keep food at a safe temperature for 4-6 hours, depending on the kitchen temperature. Avoid opening the door. Once power has returned, discard any food that has risen to a temperature above 40°F. Discard anything with a strange color or odor.

TIPS ON SAFE FREEZER STORAGE

- Recommended temperature is at 0° F or lower. Keep a thermometer in the warmest spot in the freezer - usually the door, or top shelf or basket.

- Wrap food tightly in moisture-vapor proof plastic wrap or bags, freezer wrap, or watertight freezer containers. Label and date packages and containers. Use of aluminum foil is discouraged as it may puncture or develop small holes or tears when folded, resulting in freezer burn.

- Foods purchased with thin store wrap should be removed from the package and re-wrapped with packaging intended for freezer use.

- **POWER FAILURE?**

  A full, well-functioning freezer should keep food frozen for two days. A half-full freezer unit should keep things frozen about one day. Dry ice can be added to the freezer unit if power will be out longer than cold temperatures can be maintained. Never touch dry ice with bare hands, or breathe its vapors in an enclosed area.

When Power Has Returned:

1. Discard any thawed food that has risen to room temperature.

2. Foods still containing ice crystals can be re-frozen.

3. Foods that have thawed, but remain below 40°F, should be cooked and eaten within 24 hours.

TIPS ON SAFE CUPBOARD AND PANTRY STORAGE

- Storage areas should be clean and dry.

- Maintain a temperature of approximately 70° F to retain texture, color and nutrients.

- Avoid storing dry goods in cabinets over the range, near the dishwasher, by the refrigerator, and in other areas with high humidity/temperatures. Warm temperatures (above room temperature) and high humidity increase the rate of food spoilage. Garages and basements are not recommended for food storage.

- Store opened packages (example: cereal, pasta) in tightly-closed containers or plastic bags to prevent insect infestation. Periodically check food packages for signs of infestation: presence of living or dead insects, holes or tears in packaging, and rodent droppings. Discard packages if signs of infestation are present.

- Inspect canned foods periodically for signs of spoilage, such as rust or bulges. Throw any leaky cans away. Cans with dents on the side seam or on the rim seam at the top or bottom of the can should also be discarded. **DO NOT TASTE THE FOOD IF SPOILAGE IS SUSPECTED!**

- Store pet foods and all poisonous or toxic supplies, including cleaning materials, away from food supplies.

- Keep all food off the floor.

- Avoid food storage in cupboards with exposed pipes or openings, such as under the sink.

SECTION 8 - FOOD PREPARATION

▸ LEARNING OBJECTIVES

1. **State that a menu and recipes must be reviewed before beginning meal preparation.**
2. **List three situations that may require a menu substitution.**
3. **Identify an appropriate food substitution for a particular menu item.**
4. **Accurately measure ingredients by number, volume and weight.**
5. **Describe/define five food preparation methods used in recipes.**
6. **Identify three ways to incorporate individual food preferences into menus.**
7. **Recognize that meals and food-related activities provide opportunities to develop independent living skills.**
8. **State three ways or methods to teach independent living skills.**
9. **State that individuals living in community residential settings have the right to receive three nutritious meals a day, served in a safe and sanitary manner.**

Understanding basic nutrition, menus, shopping, safe food handling and storage techniques make cooking (food preparation) easier, and ensure a nutritious, appetizing meal.

Before starting to prepare a meal, review the menu and recipes for the meal, and determine in which order tasks need to be completed. Gather all ingredients and equipment before beginning.

The following steps should be followed in preparing a meal:

Step 1. **<u>The Menu</u>**

- Review the menu and recipes in advance to help organize and prioritize tasks needed to complete a meal.
- Check to make sure all needed items are available. If all items are not available, a substitution may be necessary (see next section).
- Check menu one to two days in advance to remove freezer items and allow

for thawing in the refrigerator, and allow adequate time for preparing all food items on a particular menu

Note: Are frozen items thawing in the refrigerator and not on the counter?

Step 2. **Substitutions**

- Menus should be reviewed in advance by the designated food service person and/or manager.
- There may be occasions when substitutions must be made for particular menu items.
- When changes are made, the nutritional adequacy of the meal must be maintained, approved, and documented.

OCCASIONS FOR MENU SUBSTITUTIONS

a. Seasonal availability of foods; special promotions at the grocery store.
b. Weather and temperature (Example: On a hot day, serve a chilled tuna-pasta salad instead of a tuna casserole. On a cold day, serve vegetable soup instead of cold vegetables).
c. Holidays, birthdays, special activities (Example: picnics).
d. Time limitations due to special activities.
e. Programs involving meal planning and preparation.
f. Use of extra foods not planned into menus (example: foods near expiration date).
g. Emergency situations.

HOW TO MAKE SUBSTITUTIONS

a. Identify the menu items to be changed. For combination dishes, refer to recipe and substitute for all major ingredients.

b. Using a substitution guideline (see example or alternate guidelines provided by your registered dietitian), identify the food group to which the menu item belongs.

c. To use the sample substitution guideline, select a substitute from within the same food group. Choose foods as similar to the original as possible. Items should be of similar texture, color, preparation, and serving temperature.

d. Check previous day and next day meals to avoid serving the same food two days or two meals in a row.

e. If a individual is on a modified or prescribed diet, follow instructions provided by the registered dietitian.

f. If specific foods/recipes are consistently rejected by individuals, requiring constant substitutions, notify the registered dietitian and request a menu evaluation.

DOCUMENTATION

a. Use a Menu Substitution Record Form (or)

b. Document changes directly on the dated menu.

c. Keep menus for review at least 30 days.

SUBSTITUTION GUIDELINES

Bread, Cereal, Rice, Pasta

6-11 Servings/Day

Breads (1 serv. = 1 slice)
English muffin or bagel (1 serv. = 1/2)
Crackers (1 serv. = 1 oz.)
Ready-to-eat-cereal (1 serv. = 1/2 cup)
Cooked Cereal (1 serv. = 1/2 cup)
Pasta (1 serv. = 1/2 cup cooked)
Rice (1 serv. = 1/2 cup cooked)
Grits (1 serv. = 1/2 cup cooked)
Noodles (1 serv. = 1/2 cup cooked)

Vegetables Fruits

3-5 Servings/Day 2-4 Servings/Day

1 serv. = 1/2 cup juice
1/2 cup cooked vegetable or fruit
1 cup raw vegetable or fruit

Vitamin C - Rich	Vitamin A - Rich
Broccoli	Broccoli
Brussels Sprouts	Carrots
Cabbage	Dk. Green Leafy Vegetables
Cauliflower	Spinach
Green Pepper	Sweet Potato
Potato (baked)	Winter Squash
Tomato Juice	Apricots
Cantaloupe	Mixed Peas/Carrots
Vita C Fortified 100% Fruit Juice	Pumpkin
Grapefruit/Juice	
Orange Juice	
Kiwi Fruit	
Strawberries	

*Remember: Items within a column can only be substituted for another item within the same column. If a fruit is not on the vitamin A or C list, any fruit may be substituted. If a vegetable is not on the vitamin A or C list, any vegetable may be substituted.

Meat, Poultry, Fish, Dry Beans, Eggs, Nuts

2-3 Servings/Day

Beef Pork Poultry
Veal Lamb Fish
Luncheon Meats Hot Dogs
(1 serving = 2-3 oz.)
Dry Beans or Peas (1 serv. = 1 C. cooked)
Tuna (1 serv. = 1/2 c. flaked)
Tofu (1 serv. = 6-9 oz.)
Egg (1 serv. = 2 large)
Cottage Cheese (1 serv. = 1/2 c.)
Peanut Butter (1 serv. = 4 Tbsp.)

Milk, Yogurt, Cheese

2-3 Servings/Day

Milk (1 serv. = 8 oz.)	Cottage Cheese (1 serv. = 2 c.)
Yogurt (1 serv. = 8 oz.)	Pudding (1 serv. = 1 c.)
Cheese (1 serv. = 1 1/2-2 oz.)	Ice Cream (1 serv. = 1 3/4 C.)

MENU SUBSTITUTION RECORD

DATE/DAY	SCHEDULED ITEM	SUBSTITUTIONS	REASON FOR SUBSTITUTIONS	STAFF INITIALS

Step 3. **Organize Preparation According To Time**

- Identify foods that need to be prepared in advance (i.e., gelatins).
- Identify length of time needed for cooking each item.

  Remember to include preparation time before and after the actual cooking process. (Example: for mashed potatoes, include time for peeling and mashing). Be sure to include the time required for any special diets, such as ground or pureed textures.

- Time preparation of each food item so cooking is completed just before meal is served.
- Food should not be prepared early in the day and "kept warm" on the back of the stove or in the oven.

Step 4. **Recipes and Meal Preparation**

- **Definition:** A recipe contains a listing of ingredients and the instructions that guide you through the preparation to produce foods that are consistent in quality, quantity and nutritive value.
- A cookbook and/or recipe file is essential.
- Measure ingredients accurately (see section on "Measuring and Measuring Utensils.")
- Use spices and herbs when called for.
- Always cook at the recommended temperature - do not try to speed up the cooking process. This often results in foods that are overcooked on the outside and undercooked on the inside.

• ADJUSTING THE YIELD OF THE RECIPE

Recipes may be adjusted to produce the right number of servings. The adjustment takes two steps:

1. Obtain the **MULTIPLIER** by dividing the **DESIRED YIELD** by the **CURRENT YIELD** of the recipe.

2. Multiply the quantity of each ingredient in the recipe by the **MULTIPLIER.**

These steps work both for increasing and decreasing recipe yields.

EXAMPLE: To increase recipe for 4 servings to 8 servings:

1.	8	4	=	2
	(Desired yield)	(Current Yield)		(Multiplier)
2.	Ingredients for 4 servings:	X multiplier	=	8 servings
	2 c. shredded carrots	x 2	=	4 cups
	1/4 c. raisins	x 2	=	1/2 c.
	1 Tbsp. (T) mayonnaise	x 2	=	2 T.
	3 Tbsp. (T) plain non-fat yogurt	x 2	=	6 T.

EXAMPLE: To decrease recipe for 8 servings to 4 servings:

1.	4	8	=	0.5
	(Desired Yield)	(Current Yield)		(Multiplier)

2. Ingredients for 4 servings:	x multiplier	= 2 servings
2 cups shredded raw carrot	x 0.5	= 1 cup
1/4 cup raisins	x 0.5	= 1/8 cup
1 Tbsp. (T) mayonnaise	x 0.5	= 1/2 Tbsp.
3 Tbsp. (T) plain non-fat yogurt	x 0.5	= 1 1/2 Tbsp.

Guidelines to Efficiently Prepare Safe and Appetizing Meals:

To make meal preparation as efficient and pleasant as possible:

1. Only food preparation activities should take place in the kitchen when meals are being prepared and served.
2. The use of tobacco is prohibited in kitchen and dining areas during food preparation, mealtimes and clean-up.
3. Animals should be excluded from the kitchen and dining area during meal preparation, service and clean-up.
4. Individuals involved in food preparation should follow defined handwashing procedures and wear clean clothes.
5. Individuals having symptoms of communicable disease should not be permitted to work in any capacity in food preparation or service. An open infected wound or area of the skin should be adequately covered with a waterproof bandage or glove to prevent the spread of bacteria.

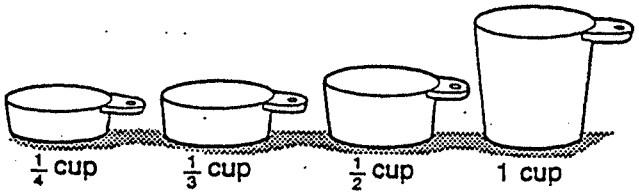
Measuring and Measuring Utensils

- A crucial step when following a recipe is to measure ingredients accurately with appropriate measuring utensils.
- If care is not taken to measure accurately, quality, consistency, and nutritional content will suffer.
- Ingredients are measured by number, volume, and weight.

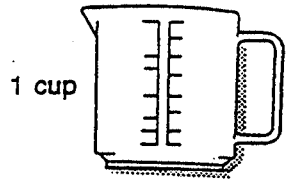
Measuring by number: Involves simply counting the items (Example: 2 eggs)

Measuring by volume: Means measuring amt. of space an ingredient occupies

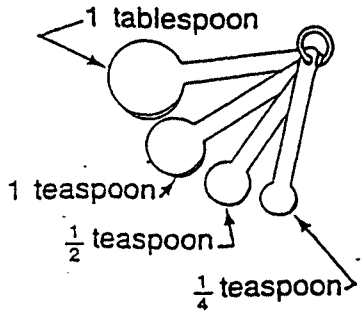
To measure dry foods use:



To measure liquids use:



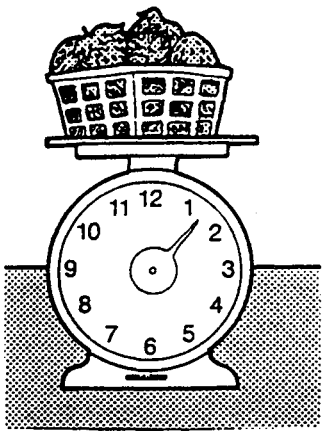
To measure dry foods and liquids use:



Measuring and Measuring Utensils (cont.)

Measuring by weight: Involves ounces and pounds

4 ounces =	1/4 pound
8 ounces =	1/2 pound
16 ounces =	1 pound

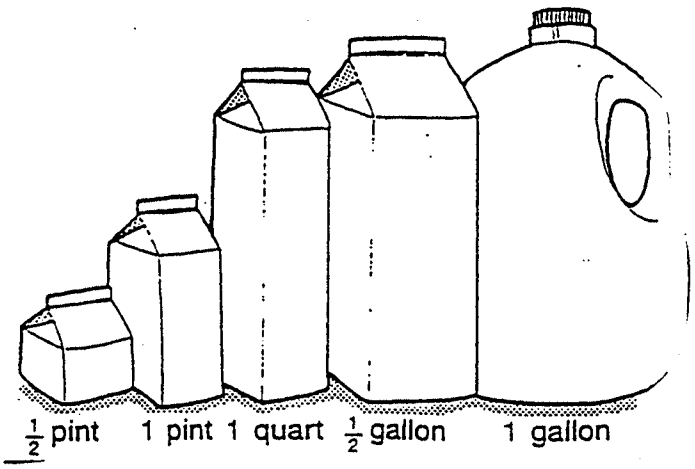


When weighing on a food scale, place empty container that will hold the ingredient on the scale and set scale at zero. Then place ingredient in the container until the scale indicates the desired weight.

Measuring Equivalents:

Measuring Equivalents:

1 Tablespoon	=	3 Teaspoons
2 Tablespoon	=	1 Fluid ounce (fl. oz.)
16 Tablespoons	=	8 Fl. oz. = 1 cup = 1/2 pint
		16 Fl. oz. = 2 cups = 1 pint
		32 Fl. oz. = 4 cups = 2 pints = 1 quart
		64 Fl. oz. = 8 cups = 4 pints = 2 quarts = 1/2 gallon
		128 Fl. oz. = 16 cups = 8 pints = 4 quarts = 1 gallon



Abbreviations frequently used in recipes:

tsp. or t. = teaspoon
tbsp., Tbsp, T., Tb. = tablespoon
c. = cup
pt. = pint
qt. = quart
gal. = gallon
oz. = ounce
fl. oz = fluid ounce
lb., # = pound
sq. = square
sec. = second
min. = minute
hr. = hour
C = degrees Centigrade
F = degrees Fahrenheit

Average Can Sizes

Can Size	Weights	Cupfuls
8 oz. can	8 oz.	1 cupful
#300	15 1/2 oz.	1 3/4 cups
#303	1 pound	2 cups
#1 Tall	1 pound	2 cups
#2	1 lb. 4 oz.	2 1/2 cups
#2 1/2	1 lb. 13 oz.	3 1/2 cups
#3 (cylinder)	46 oz.	5 3/4 cups
#10	6 lb. 9 oz	12 cups

SECTION 9 - SAFETY IN THE KITCHEN

▸ LEARNING OBJECTIVES

1. **State that physical injury can be prevented by following safety rules and practices.**

2. **List two ways to prevent each of the following:**

   a. **Burns**
   b. **Falls**
   c. **Cuts**
   d. **Electrical shock**

Safety is often thought about only after an accident has happened. Being aware of certain safety rules and using safe cooking practices can help prevent serious injuries. It is everyone's responsibility to know the safety rules, and set a good example by following them. The kitchen and dining area will be a safer place to work if everyone follows the rules.

General Guidelines:

1. Provide a place for everything; keep everything in that place.

2. Close cabinet doors and drawers immediately after use.

3. Provide good lighting for kitchen and dining areas.

4. Be sure hair is controlled and secure loose clothing. Always wear shoes in the kitchen.

5. Keep floor clean and dry. It should be free of grease, wet spots and all loose objects.

6. Use dustpan and broom to sweep up pieces of broken glass or dishware. Then use a damp paper towel to pick up slivers. Never use bare hands or fingers to pick up broken glass or dishware. Wrap broken glass or dishware in several layers of paper before discarding in the trash.

7. A cutting board should always be used for cutting. Never cut on the countertop or other surfaces not intended for cutting. Paring and cutting in the palms of the hand is a dangerous practice.

8. Always pick a knife up by the handle. Cut down with a knife on a cutting board; never cut toward the hand, body or someone else. If the knife starts falling, don't grab it - move out of the way.

9. Wash knives immediately - keep them visible. Store knives in a rack; never leave them in a sink of water, loose in a drawer, or on a work surface where they may be covered by food or equipment. Keep knives sharpened - dull blades tend to slip. Carry knives and other sharp pointed tools with the tip down and wrapped in cloth or paper.

10. Use knives for cutting food only. It is unsafe to use them for other tools, such as a can opener, screwdriver, or serving utensil.

11. Keep fingers, hands, spoons and spatulas away from moving parts of mixers, food grinders, blenders and food processors. Be sure to wait until an appliance stops before adding or removing food. Do not put fingers or utensils into any appliance, including toasters, unless they are unplugged.

12. Be sure handles of cooking utensils are not turned to the front of the stove or over burners, where elbows or arms could upset foods onto the stove or floor.

13. Tip covers of pans away from you so steam can escape without burning you. Handle hot pans and utensils with dry potholders.

14. Stand to the side when lighting gas stoves, ovens or outdoor grills. Turn off all burners and ovens when cooking is completed.

15. Keep vents, stoves and ovens grease-free to prevent fires.

16. Hands and floor must be dry when using electrical appliances. Appliances should be unplugged before cleaning, and when not in use. Remember to grasp the plug, not the cord, when unplugging an appliance from the outlet.

17. Keep electrical switches, plugs and outlets in good repair. Do not use extension cords. Report all broken or defective equipment. Do not use broken or defective equipment until it is repaired or replaced.

18. Chipped or cracked dishes or pots and pans with broken or loose handles may cause injuries. These items should be repaired or replaced.

19. Lift properly. Lift using your legs, and not with your back muscles. Ask for help in lifting heavy loads.

20. Use a sturdy stool or stepladder to stand on; do not use a chair.

21. Store pet food, cleaning supplies, poisons and detergents separate from food. If possible, they should be stored below eye level in a locked cabinet. Leave these items in their original containers. If you must transfer to another container, label the new containers completely and accurately with contents and directions for use. Never mix cleaning products together.

22. Follow the directions on the container when using cleaning or caustic solutions.

23. Concentrate on what you are doing; watch for and correct any unsafe conditions.

24. Microwave safety:

- Be sure to keep oven clean, including door seal.

- Do not operate oven if damaged - especially if door does not close.

- Consult operating manual so you understand how to cook foods safely.

- Use only microwave safe dishes, utensils, and paper products.

- After heating a dish with a tight-fitting lid or plastic wrap, be sure to remove lid or wrap carefully and away from you to prevent steam burns. Paper towels and wax paper are acceptable covers that do not cause steam build-up.

- Only make popcorn in special microwave poppers or use "microwave popcorn." Open microwave bags carefully to prevent steam burns.

- Always monitor cooking times carefully to avoid fires.

- Never microwave eggs in a shell. Always pierce the membrane around the yolks of eggs when poaching them in a dish.

- Never put a narrow-necked bottle, open or closed, in a microwave oven. The bottle may shatter.

- Pierce the skin of vegetables and fruits, such as potatoes, squash, apples. This allows steam to escape and prevents explosions.

- Foods heated in a microwave may develop "hot spots" or excessively high temperatures. Use caution when handling and serving microwave foods to avoid a burn.

- Do not attempt to cook in plastic storage bags unless labeled for use in a microwave.

- When heating liquids in a microwave oven, cover with paper towel to avoid splatters.

- Clean and sanitize microwave oven after each use.

- Do not use metal in the microwave (example: aluminum foil, twist ties, aluminum labels) unless manufacturer's instructions allow it.

When individuals are learning to work in a kitchen, safety practices must be taught. Special equipment is available to assist in using kitchen equipment safely.

SECTION 10 - KITCHEN CLEAN-UP

▸ LEARNING OBJECTIVES

1. **State two acceptable ways to wash and sanitize dishes.**
2. **Describe one acceptable method of cleaning counters and tabletops.**
3. **State one reason for discarding broken, worn or damaged dishes, glasses, cups and other safety equipment.**

Thorough and regular cleaning of the kitchen and equipment is important to protect against food contamination and pest infestation. Cleaning is the removal of soil from a surface where it does not belong. Sanitizing is the removal of harmful bacteria. To be properly sanitized, surfaces must be cleaned before the sanitizing solution can be applied. All surfaces and utensils used in food preparation must be cleaned and sanitized before meal preparation. A solution of household liquid chlorine bleach and water is the most common and least expensive method for sanitizing these surfaces. Other commercial products may be acceptable, but directions must be carefully followed.

Dishwashing

Use of an automatic dishwasher is recommended for dishes, flatware, cups, glasses, utensils and adaptive eating devices. Follow manufacturer's directions for dishwasher use. Use the sanitizing (hottest water wash) cycle and the heated drying cycle. Use chlorinated detergent specifically made for dishwashers. If an automatic dishwasher is not available, a hand Dishwashing procedure that will clean and sanitize must be followed. The following procedure is suggested on the next page:

Procedure for Cleaning and Sanitizing Dishes -

1. Scrape and rinse glassware, utensils and dishware free of food debris.

2. Clean sinks and dishpans.

3. Fill sink with hot water and dish detergent.

4. **WASH** glassware, utensils, and dishware in hot, sudsy water using a clean dishcloth. Change water as often as necessary to keep water clean and grease-free. (Do not use a sponge or sponge-type pad to wash dishes.)

5. **RINSE** glassware, utensils and dishware in clear, hot water.

6. **SANITIZE** glassware, utensils and dishware:

   A. Fill sink or dishpan with water at temperatures between 75°F and 110°F. For each gallon of water, add 1 and 1/2 teaspoons liquid chlorine bleach.

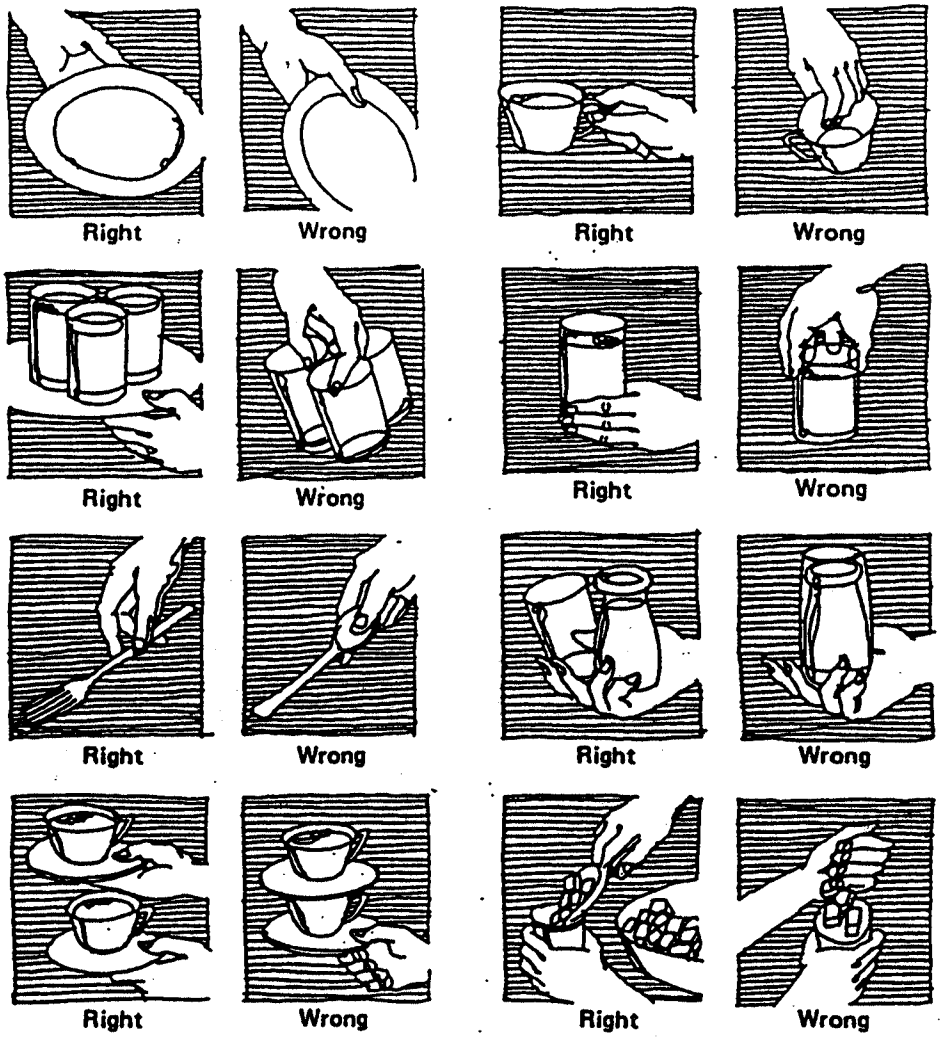
   B. Completely immerse glassware, utensils and dishware in bleach and water for one minute.

   C. Remove glassware, utensils and dishware from bleach and water, and place on rack to drain. (Do not rinse.)

7. **AIR DRY**. Do not towel dry. Towel drying is not allowed because towels and handling re-contaminate surfaces.

Proper handling of dishes

Handle dry dishes in a manner that avoids re-contamination. See the following examples:



Reference: Applied Foodservice Sanitation - Educational Foundation of the National Restaurant Association

KITCHEN CLEAN-UP (cont.)

While storing dishes, glasses, cups, pots, pans and other equipment and utensils after cleaning, take time to inspect their condition. Items that are worn, cracked, chipped, scratched or damaged cannot be properly cleaned and sanitized. They should be discarded and replaced. Disposable paper, plastic or foam dishes, cups and utensils should not be saved and reused, as they cannot be properly sanitized.

Counters and tables

To clean counters and tabletops:

1. Clean surfaces using warm water and liquid dish detergent and a clean dishcloth.

2. Rinse soap residue off with clear water.

3. Spray or wipe with a chlorine bleach and water solution:

   - 1/4 tsp. bleach in 1 pint water (75°F), or
   - 1/2 tsp. bleach in 1 quart water (75°F) or
   - 1-1/2 tsp. bleach in 1 gallon water (75°F).

4. Allow surfaces to air dry.

5. Make fresh bleach and water solution daily.

Garbage and Trash

Garbage and trash should be kept in a covered leakproof non-absorbent container. Garbage and trash should be removed from the kitchen daily. Containers should be cleaned and sanitized at least weekly. If plastic trashbags are not used, containers should be cleaned and sanitized daily.

General Cleaning

A general cleaning schedule, detailed list of cleaning procedures, and list of acceptable cleaning products should be available and followed. Make sure all appliances, equipment, windows, sinks, walls, doors, floor and kitchen storage areas are kept in a clean and sanitary manner.

NUTRITION AND FOOD SERVICE SECTION

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