INTRODUCTION

Nutrition is the study of the foods and fluids we eat and how our bodies use them for energy. The study of nutrition also involves understanding how poor or inadequate nutrition affects our health.

Understanding the basic concepts of nutrition is important. Many of the patients you will be working with have illnesses that will affect their nutrition needs. Also, many of your patients may be unable to properly care for their own nutrition needs. As a CNA and a healthcare professional, one of your responsibilities will be to make sure that your patients are well hydrated and well nourished.

OBJECTIVES

When the student has finished this module, he/she will be able to:

1. Identify a definition of a calorie.
2. Identify the definition of a nutrient.
3. Identify the three ways fluids are lost by the body.
4. Identify the five categories of solid nutrients.
5. Identify the correct definition of NPO.
6. Identify the correct definition of gag reflex.
7. Identify one important rule of regarding the patient’s food and fluid intake.
8. Identify three rules to remember when helping a patient to eat.
9. Identify the correct definition of aspiration.
10. Identify the correct position of patients when they are being fed.

BASICS OF NUTRITION

The human body is very active, and it needs energy to survive. The body also must be able to grow, it needs to repair damage, and it must fight off infections. All of these processes require us to take in food and fluids.

Food and fluids provide our bodies with two things. The first is calories. Calories are the basic fuel that our bodies use for energy. A calorie is basically a measurement of the amount of energy a particular amount of food provides; that is the definition of a calorie. Regardless of how well balanced a diet is, and regardless of how well a diet supplies the body with the essentials, if you do not eat sufficient calories, you would starve. Different foods have different calorie content: fats have the highest calorie content. The average male needs approximately 2100 calories a day; the average female needs about 1900 calories a day.

Learning Break: The calorie needs listed above are averages. Calorie needs are different for each person and can change. Many of the patients you will take care of will have a specific amount of calories that their doctor has determined is best for them. This information can be found in the patient’s chart.
The second thing that food and fluids provide us with is nutrients. A nutrient is a chemical substance found in food that is essential for life. Just as the body needs adequate calories to survive, it also needs the right nutrients in the right amounts. A diet may be high in calories and provide a lot of energy, but it can be lacking in nutrients. Nutrients can be divided into two basic categories: fluids and solids.

**Fluids**

Fluids are absolutely essential. The body can survive for weeks without solid food, but no one can survive for more than a few days when he/she is completely deprived of fluids. Someone can lose close to half of his/her body weight and survive, but losing close to one-fifth of one's body fluid can be fatal.

Water is the most important fluid. The daily water requirement varies greatly with age, activity, and basic health status. The larger and more active someone is, the more fluid he/she will need. Water does not have calories, but fluids such as juices and milk do.

Most of the time, fluid intake and fluid output are fairly well balanced. We take fluid in by drinking liquids. There is also a substantial amount of water in some of the foods we eat such as fruits and vegetables. Fluid output/loss occurs in three ways: by sweating, by urination, and by evaporation from the lungs when we breathe.

**Learning Break:** Measuring the fluid intake and output is often a responsibility of the CNA.

**Learning Break:** People who are sick, and especially people who have a fever, need more water because the metabolic rate increases during illness or when there is a fever; their bodies literally “burn off” fluid because of the high temperature.

**Solids**

Solids are obviously the foods we take in that are not liquids. Solid foods contain the calories we need (liquids are not often a high source of calories) but they also provide most of the essential nutrients our bodies need to function. These essential nutrients can be divided into five categories. Each of these nutrients has a specific role in keeping the body healthy and functioning, and each of them is absolutely essential.

- **Carbohydrates:** Carbohydrates are found in grains, fruits, vegetables, and sugars. Some people refer to carbohydrates as starches. These nutrients are an essential source of calories for energy. Depending on the carbohydrate, they may also contain other nutrients such as vitamin and minerals. Simple carbohydrates such as sugar are basically just calories.

- **Fats:** Fats are found in butter, oils, meats, milk, nuts, and many snack foods. Fats are an important source of energy. Most of the time, our bodies are burning fat for energy, not carbohydrates. Fats are not usually an important source of other nutrients.
• **Proteins:** Proteins are found in meats, fish, cheese, and beans. Proteins are used by the body to build muscle and to repair damage to tissues. Proteins can also be used for energy, but this usually happens only when the body can’t get carbohydrates or fats.

• **Vitamins:** Vitamins are chemical compounds that are essential for the proper functioning of many complex body processes. For example: Vitamin K (found in leafy green vegetables such as spinach and kale) is needed so the body can manufacture clotting products that help stop bleeding. There are fat-soluble vitamins, A, D, E, and K. There are also water-soluble vitamins, the B vitamins, and C. Vitamins are found in a wide variety of foods.

• **Minerals:** Minerals, like vitamins, are found in a wide variety of foods and like vitamins, they are needed for complex body processes. Example: Calcium (found in dairy products) is needed to grow and maintain bones. Other important minerals are iron, sodium, potassium, phosphorus, fluoride, zinc, and iodine. Some of these minerals are needed in only very small amounts, so people refer to them at times as trace minerals.

It is not completely clear what the “perfect” diet would look like, and it is probably not possible to have a diet that would be appropriate for all people all the time. Nutrition needs vary from person to person and these needs will change depending on someone’s age, gender, and health status.

However, there are some basic rules of nutrition that should be followed. Food and fluids are needed for us to survive and grow, but the wrong foods – either in quantity or quality – can definitely be harmful. For example, a diet that is high in saturated fats and cholesterol (lots of butter, lots of red meats, etc) can definitely help contribute to the development of heart disease and increase the risks of suffering a stroke.

There are guidelines that can help people eat a healthy diet. However, remember that these are *basic* guidelines:

• Most people need 2 to 3 liters of fluid a day.

• Most people need approximately 2000 calories a day.

• Most people should eat 6 to 8 servings of fruits and vegetables a day.

• Proteins should be about 20% of the daily calorie intake.

• Carbohydrates should be about 50% of the daily calorie intake.

• Fats should not be more than approximately 30% of the daily calorie intake.
SPECIAL DIETS

The word diet is often misused. Many people assume it means that someone is eating less in order to lose weight. That can be true; however, the word diet simply refers to the food and fluids that we eat.

Some patients will have no significant restrictions and can essentially eat whatever they like. Yet there are many of the patients you will care for who will have special dietary needs. Many patients may also be restricted in the amount of fluids they can take each day. The patient may have a medical condition such as diabetes; these patients must carefully watch the intake of their food because their blood sugars can be very unstable. Some patients – patients who are going to surgery or just coming back from surgery – may not be allowed to have any food or fluids at all. The following are some of the specific diets that are commonly prescribed by physicians:

- Regular or house diet: There are no restrictions (within reason) to what the patient eats
- Soft diet: The patient cannot tolerate “hard” foods; everything must have a smooth, soft texture.
- Low sodium: The amount of salt is carefully restricted.
- Clear liquids: The patient is only allowed to have liquids that are clear: coffee and tea without milk, clear juices, etc.
- NPO: NPO is an abbreviation for a Latin phrase, nothing by mouth. A patient with a dietary restriction of NPO is not allowed any food or fluid; there is no exception.

In certain situations, the patient will not be able to ingest food or fluids, but he/she will receive nutrition by the IV route (total parenteral nutrition or TPN). These patients can also be fed a liquid diet through a nasogastric (NG) tube that is inserted through the nose into the stomach, or through a PEG (percutaneous endoscopic gastrostomy) tube, a short, plastic tube that is permanently placed into the stomach through the abdominal wall. Feedings through an NG tube or a PEG tube are called enteral feedings.

**Learning Break:** Always check the patient’s chart before giving them food or fluids. This is one of the most important rules of feeding and nutrition you need to remember. The specific dietary needs and restrictions of food and fluids for each patient should be clearly written and easy to find.

**Learning Break:** Some patients have an NPO order written because they do not have a gag reflex. The gag reflex is an automatic response of the lungs that protects against aspiration. When food or fluids are aspirated into the lungs, or about to be aspirated into the lungs (“going down the wrong pipe”), this stimulates a very strong cough; the body is trying to expel this foreign material or prevent it from entering the lungs. Some patients who have had a stroke or some other kind of neurological damage lose their gag reflex. Anything those patients take orally can be aspirated.
ASSISTING THE PATIENT WITH FEEDING

Patients will at times need assistance with eating. These patients have a functioning gastrointestinal tract and they are allowed to have fluids and solid foods. However, the patient may have had a stroke and cannot move his/her arms. The patient may be visually impaired. There are many reasons why someone might not be able to feed himself/herself.

Feeding someone is not difficult; it simply takes patience and common sense. There are some important points that you must remember.

- Be patient: Someone who needs assistance eating will very often not be able to consume his/her food very rapidly. Although you should encourage your patients to eat, never rush the patient or force feed someone. Doing so can cause the patient to aspirate the food.

Learning Break: Aspiration is a medical term that means a foreign substance – food, for example – moving into the lungs. As aspiration of food into the lungs can have serious medical consequences.

- Budget time. Because the patient who needs assistance eating will be a bit slow, you must remember to plan your day accordingly. This will take some practice; just remember that you can’t use the amount of time it takes you to eat as a reference. Try and allot enough time so that neither you nor the patient feels rushed, and that the patient has enough time to eat all of the food.

- Use small portions. The patient who needs assistance with eating often cannot chew and swallow large pieces of food. Food portions that are too large may be aspirated.

- Never leave the patient with the food tray. If the patient is disoriented or confused, there is a chance that he/she might aspirate a piece of food.

Those simple rules will make the process safer and more satisfying. Wash your hands. The next step in assisting the patient with eating is to identify the patient by checking his/her name band. Following that, you should check the food tray. There should be some identifying information attached to the food tray – usually on a printed sheet or card – with the patient’s name and the type of diet that has been ordered for that patient.

Learning Break: Always check the patient’s chart for diet information before helping the patient to eat. Giving a patient the wrong meal can be like giving the patient the wrong medication or the wrong treatment; not quite as serious, but still a potential problem.

When you have identified the patient and determined that the proper meal has been delivered, elevate the head of the bed. Most of the time, an angle of approximately 90
degrees of the hips is sufficient. The patient’s head should be supported and leaning forward slightly. **The key is to keep the patient in an upright position.** This allows food to travel down into the stomach, and prevents food from being aspirated into the lungs.

Place a towel or absorbent bed protector across the patient’s chest and under the chin. When you feed the patient, it is recommended to use a spoon; this is not an absolute rule, but a spoon is as effective as a fork, and using a spoon eliminates the chance that the patient could be injured by the points of a fork. (This may sound implausible, but a patient who is confused and disoriented and especially hungry may bite down hard on a fork, or grab the fork and place it forcefully in his/her mouth).

Ask the patient what he/she would like to eat first, second, etc. If the patient is unable to view the tray, describe the food. Feed the patient in small portions. Don’t be afraid to underestimate what the patient can tolerate; it is better to use smaller rather than larger bites to avoid the risk of aspiration. Again, if the patient cannot view the tray or cannot see, let him/her know what you are giving with each bite. Make sure there are fluids available and occasionally offer something to drink.

Encourage the patient to eat as much as possible. An adequate calorie intake and good nutrition is vital for people who are sick. Make sure you document on the patient’s chart how much of the meal he/she finished and how much fluid was consumed. If the patient was unable to finish a substantial portion of the meal, ask why (if he/she can tell you) and make sure your supervisor is informed.