This lecture has been created to provide a brief and introductory course on the basic principles of nutrition.
In today’s lecture, you will identify the importance of nutrition and it’s role in a healthy lifestyle. We will only scratch the surface on some of the details of nutrition, including definitions and general foods for the basic nutrients, healthy snacking tips, as well as portion control. Finally, We will look at a few of the excellent resources available to us which provide relevant and accurate information.
Incorporating positive eating habits can make a huge impact and improve a variety of factors and conditions in your life. This encompasses more than just your work performance; it affects your personal health and well-being for both the short and long term. The overall goal is to feel good and energized, which can be greatly affected by what you are putting in your body on a daily basis.

**Benefits of Nutrition**

Good nutrition can positively impact & influence the following:

- Weight Regulation
- Mental & Physical Performance
- Overall Energy Level
- Reduced risk of short and long term diseases
- Healthier & stronger immune system
In contrast, following a poor diet and bad eating habits can increase the risk of developing a variety of undesirable health conditions. The negative effects go far beyond gaining weight, which is the most common association to poor eating. Poor nutrition does not always lead to gaining weight, and may negatively affect us in a variety of other ways, including decreased energy levels and loss of sleep, as well as joint pain and muscle soreness.
Let's quickly review all of the nutrients and discuss the importance of each nutrient in our daily diets.

Nutrients are classified into 6 categories. Today, our primary focus will be on the 3 nutrients that provide energy: carbohydrate, protein, and fat. Vitamins, minerals, and water are the other classes, and will be discussed briefly.
Protein is one of the three nutrients that provides energy, at 4 kilocalories per gram. It does have a role in muscle synthesis and rebuilding, however an excess in protein does not automatically equal increased strength or larger muscles!

While it can be used as an energy source, it’s important to understand that it has a variety of other roles in the body and excess consumption is just as likely to lead to fat storage and weight gain as the other two nutrients.

All animal products offer an abundance of protein and it’s important to choose lean and low fat options. A small portion of meat, 2-3 ounces, can offer between 20-25 grams of protein. Grains, beans, and nuts also provide protein as well.
Moderate amounts of fat are needed in the diet to support a variety of internal functions. Fat also contributes desirable tastes and textures to foods and can be used to create more palatable food sources. Beneficial sources include unsaturated fats from fish, nuts and seeds, olive and canola oil, as well as peanut and almond butters. Other fats that should be limited include saturated fats like creams, butters, high fat dairy products, and fatty meats. Most foods that are prepared via deep frying or similar methods should also be avoided.
Carbohydrates are the primary fuel source for our body and are needed for optimal performance and energy levels. There are many forms and variations of carbohydrates and it’s important to focus on less processed options when possible. Whole, frozen, dried, or canned fruits without added sugar or ingredients are best. When considering breads and grains, half your choices should be 100% whole grain and whole wheat products. Portion size, especially for pastas, rice, and cereals, is often an issue. With any food option, especially carbohydrate foods, it is important to ensure other nutrients, such as protein and fat, are also included in the meal. For example, a piece of fresh fruit like a banana or apple could be accompanied by a Tbsp of peanut butter or ½ cup of cottage cheese.
A diet that consists of wholesome fruits and vegetables will offer an abundance of minerals and vitamins. Good sources include fresh, frozen, canned (without any added sugar). 100% fruit juice will provide a variety of nutrients, but should be limited due to the excess sugar. Whole grain products and a variety of lean meats will also provide multiple nutrients as well.
The functions and importance of water in the body are limitless. How we feel and our energy levels are often closely related to our hydration status. Throughout the day, it is always important to promote water and other calorie-free beverages, which may also help curve your appetite. Coffee, sodas, alcohol and other similar beverages will negatively influence your hydration status among other problems. Beyond what you drink, many fresh foods, especially fruits and vegetables, will also provide an additional water source.
Hydration status will also affect your performance and work output in a variety of ways. If you sweat one Liter of water, which would equate to approximately 30-40 minutes of exercise in a warm climate, your heart will have to beat eight extra times per minute, your heart will also pump out 1 liter less blood, and your body temp will increase. All of these conditions will lead to decreased production and body efficiency, and negatively impact your performance. Also, this problem may not occur immediately, it may develop from one or even several days of inadequate hydration. Taking note of your urine color is one simple and quick method to estimate your hydration status.

The darker the color, the more dehydrated you may be. Food and vitamins can also affect urine color, but this is still a good general guideline.

When you are properly hydrated, it’s common to go to the bathroom every 3-4 hours, which makes it easier to monitor. However, as you get dehydrated, the ability to urinate will decrease as the body is trying preserve as much water as possible.
Basal metabolism, also known as basal metabolic rate (BMR), is the minimal number of calories your body would need without including any activity or function. Many individuals that try to calorie count or use online counting tools, start with their BMR as a baseline. One of the most important concepts for energy balance is to understand that no two individuals are the same. What works for one may not work for another and it’s because of the variety of factors listed above. One individual may need 2000 calories a day, while another may need 5,000 calories. Many individuals try restrictive and low calorie diets, however, at a very minimum, the body still needs to be fueled for a variety of internal factors.
On the basic principal, energy in=energy out. However, the types of food you eat, such as fiber-rich fruits and vegetables and lean, low fat meats, can be just as important and our body may respond differently to what we consume.

Important to look at this model and understand that no matter what you eat, too much of anything will equal the same thing: fat storage!

For any change, the importance is on small adjustments, either above or below the normal requirements, depending on your goal.
There are many good eating habits that reflect a healthier lifestyle. Adopting good eating habits usually focuses on behavior change and something that can be sustained for the long term.

Eating breakfast close to when we wake up sets us up for the day and helps prevent overeating and even some cravings.

Currently, one of our biggest and most common problems in our eating style is portion control. Slowing down when we eat and pre-portioning our servings are just a few tips to reduce our portions. A visual of adequate portion sizes for a variety of food groups is attached in a few slides.

Beyond meals, snacking plays a huge part in if our eating habits are good or bad. We’ll look at both good and bad habits of snacking.
Forget what can be a healthy snacking choice…As long as the focus remains on a variety of foods and includes an assortment of nutrients, it’s probably a good option. Keep balance and moderation in mind. The focus for snacks is to get you to the next meal, while providing a good amount of nutrients and moderate amount of calories. As mentioned earlier, always try to “pair” foods together to ensure you get multiple nutrients which will help with filling you up and keeping you satisfied until your next meal.
Snacks can be useful throughout the day as previously shown, however improper snacking can be just as detrimental to one’s diet as anything else. Choosing highly processed items as our common snack leads to weight gain and other negative outcomes.

Depending on the food type, even small portions can quickly add up on total calories. Look at some of the “convenient” snack foods above and observe how easily a small portion can equal 200 calories.

Portions of everything we eat become extremely important throughout the day. Let’s get a better understanding of what a normal portion size is.
The images on the right represent a portion size of a certain type of food. Please be aware that most serving sizes are smaller than the portion sizes. This is especially important for most grain options. For example, one cup of rice or mashed potatoes is equivalent to a fist or tennis ball. However, one serving of either option is only ~1/3 of a cup. Meaning, one fist or tennis ball would give us 3 servings of that item. When considering what we eat and how much, this is extremely important. This is where choosing vegetables and a variety of foods can be extremely important and providing balance to our diet.

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<tr>
<th>Quick Tips:</th>
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<tr>
<td>3-4 ounces of meat is about the size and thickness of a deck of playing cards.</td>
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<tr>
<td>A medium sized piece of fruit is the size of a tennis ball.</td>
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<td>1 ounce of cheese is about the size of four stacked dice.</td>
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<td>1/2 cup of ice cream is the size of a tennis ball.</td>
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<td>1 cup of mashed potatoes is the size of your fist (depending on your size; commonly the size of a female fist).</td>
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<td>1 ounce of nuts should fit into the small of your hand.</td>
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<td>1 teaspoon of margarine or butter is about the size of the tip of your thumb.</td>
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The United States Department of Agriculture website www.Choosmyplate.gov is a great resource that provides a wealth of handouts and information and also gives us a simple idea of what a plate should look like. This is one handout that provides 10 simple tips/guidelines to improving your plate.
Mission nutrition is a standardized nutrition course that provides practical and relevant information. This course is offered by certified instructors at variable Navy Fitness centers and open to anyone.

**Additional Resources**

- **Mission Nutrition Course**
  - 2 day science-based nutrition education course
  - Topics include
    - Basic Nutrition
    - Performance Nutrition
    - Fad Diets
    - Dietary supplements
    - Grocery shopping
    - Reading food labels
  - Offered by trained MWR fitness specialists
    - Check your local Navy Fitness center for more information

[www.navyfitness.org/nutrition/mission_nutrition/](http://www.navyfitness.org/nutrition/mission_nutrition/)
The physical readiness program website provides relevant and great information for the sailors and also includes a variety of internal links and places to search for familiar information. Within this website, you can also search for Registered Dietitians that may be available at your local MTF.

http://www.public.navy.mil/bupers-npc/support/physical/
The Human Performance Resource Center is a website that is regularly updated and answers a variety of questions and topics that are currently in the news. They also have a wealth of resources and information for any topic related to nutrition, fitness, and overall health.
The listed resources give an abundance of information on nutrition and optimal health. Within each website, they also provide you a variety of internal links and additional resources to explore. These are just a few of the resources available, but a great starting point when looking for accurate and relevant information.