



# Health Matters

## Facilitator Guide

FOR THOSE WHO SERVE AND THOSE WHO SUPPORT  
[WWW.YELLOWRIBBON.MIL](http://WWW.YELLOWRIBBON.MIL)

## Health Matters

### Facilitator Note:

*The following two symbols are used as indicators:*

 (computer) indicates it is time to advance the slide on the associated PowerPoint;

 (hand) indicates there is an exercise associated with the content.

*Essential class content is noted in **bold**.*

All class handouts are available for download on the [YRRP website](http://www.yellowribbon.mil/cms/event-handout) at [www.yellowribbon.mil/cms/event-handout](http://www.yellowribbon.mil/cms/event-handout). Unless otherwise specified in the Materials section below, all handouts should be printed for distribution to class participants.

### Class Description:

This class will discuss the current recommendations made by the U.S. Department of Health for adults regarding nutrition, physical activity, and sleep in connection to the key roles these components play in one's overall health and well-being.

### Stage

Pre-deployment, During deployment, Post-deployment

### DoDI:

1342.28 DoD Yellow Ribbon Reintegration Program (YRRP)

The content of this class has been developed for the Department of Defense Yellow Ribbon Reintegration Program. The Clearinghouse for Military Family Readiness at Penn State has reviewed the class and is responsible for content management.

If you have additional information or updated research to be considered for inclusion in this class, please send your suggestions to [yrrp@psu.edu](mailto:yrrp@psu.edu).

### Audience:

YRRP attendees

### Time:

45 minutes

### Equipment:

- Projector
- Laptop

- Pens
- Paper

## Materials:

- Facilitator Guide
- Core Material Checklist
- PowerPoint Presentation
  1. Health Matters
  2. Objectives
  3. Goals of Nutrition
  4. Measuring Caloric Requirements
  5. Calculate Your RMR
  6. Determine Your PAL
  7. Applying Caloric Requirements
  8. What Does Your Diet Look Like?
  9. What Does Your Plate Look Like?
  10. Dietary Guidelines at a Glance
  11. Tips for Sticking with Dietary Guidelines
  12. Importance of Physical Activity
  13. U.S. Physical Activity Guidelines
  14. Breaking Down Barriers
  15. Strategies to Fit in Physical Activity
  16. Sleep for Optimal Health
  17. Strategies to Improve Your Sleep
  18. Review of Objectives
  19. Health Matters
- Handouts
  1. Calculating Your Daily Caloric Needs
  2. Recalling Last Night's Dinner
  3. Potential Strategies for Improving Health (online only)



## Exercises:

1. Calculating RMR and Daily Caloric Needs
2. Diet Recall
3. Identifying Healthy Diet Adjustments

## Objectives:

After completing this class, participants will be able to do the following:

1. Identify current U.S. Department of Health recommendations for nutrition and physical activity.
2. Calculate your estimated daily Caloric needs.
3. Identify strategies to fit physical activity into your life.
4. Identify strategies to improve your sleep.

## Introduction

### SHOW Slide 1: Health Matters

#### Facilitator Note:

*Introduce yourself as the facilitator. State your name, military experience or affiliation, and perhaps one additional brief bit of relevant personal information that establishes your credibility (i.e., your professional training or experience).*

*Please limit your personal introduction to no more than 2 minutes to maximize the time attendees are able to engage with course content, practice skills, and participate in self-reflection activities.*

*Throughout this class, make sure to emphasize that participants should not judge others' diets, physical activity levels, or sleep habits.*

There are 24 hours in a day. We spend that time doing many things, including eating, engaging in physical activity, and sleeping. In this class, we will discuss the importance of each of these behaviors for you and your family's health. We will review the current recommendations for healthy nutrition, physical activity, and sleep. There will be time to reflect on your current diet, physical activity, and sleep habits, and you will be able to identify strategies to make incremental improvements in your lifestyle.

### SHOW Slide 2: Objectives

After completing this class, you will be able to do the following:

- 1. Identify current U.S. Department of Health recommendations for nutrition and physical activity.**
- 2. Calculate your estimated daily Caloric needs.**
- 3. Identify strategies to fit physical activity into your life.**
- 4. Identify strategies to improve your sleep.**

Before we begin, please take 30 seconds to consider a goal you have regarding your nutrition, fitness, or sleep habits.

*PAUSE for 30 seconds.*

Hopefully, this class will provide you with tools to help you achieve your goals related to health.



## Eating Right

### SHOW Slide 3: Goals of Nutrition

At its most basic level, **the purpose of food is to provide fuel to meet the demands of the human body** (Clark, 2014). Some of these tasks are voluntary like going outside for a walk, washing dishes, or running up a flight of stairs. However, your body requires energy for many activities you may not even realize are happening. For example, your body requires energy to power the muscles in your diaphragm that are used for breathing. Your heart muscle needs energy to beat. Your brain needs energy to think. You even need energy to digest food and absorb the nutrients you eat! All of these activities are completely involuntary. In the human body, **Calories are our unit of energy**. We take in Caloric energy through the food we eat. We must consume adequate Calories every day to provide our body with enough energy to meet its demands. However, **if you do not eat adequate Calories, your body will adapt and will rely on stored energy sources**. In this case, **the body's largest energy reserve is fat**. **Regulating proper nutrition and physical activity is a balancing act**. You want to eat enough food to provide fuel for everything you need and want to do in a day and to meet the energy demands of the body. **If you are successful in maintaining balance, your weight will be constant. If you eat more Calories (from any type of food) than your body needs to use, your body will store those Calories as fat.**

Of course, the biggest question is how do you know how many Calories you should eat in a day?

### SHOW Slide 4: Measuring Caloric Requirements

As we talked about on the previous slide, your body needs enough Calories to support involuntary activities, like breathing and pumping your heart, and voluntary activities, like exercise and household chores. **The number of Calories that you need to sustain life (i.e., Calories to support involuntary activities) is called your resting metabolic rate (RMR)**. In general, **this number is influenced by your age, height, weight, and gender** (Flack, Siders, Johnson, & Roemmich, 2016; Harris & Benedict, 1918). If you were unable to get out of bed and move around, this number would be close to your total daily Caloric requirement.

Most of us will do some physical activity in the day, even if it is not structured exercise. **In order to factor in the Calories you burn by being physically active, you can multiply your RMR by a physical activity level (PAL) factor**. Today, we are going to estimate both of these numbers, so you have an idea of approximately how many Calories you burn in a day.

## SHOW Slide 5: Calculate Your RMR

### EXERCISE 1: Calculating RMR and Daily Caloric Needs

#### Facilitator Note:

*Handout 1 will be used. The purpose of this exercise is to calculate RMR. Prior to the class, the facilitator should complete this worksheet to ensure the facilitator can help participants in the class. If there is internet access, participants can also use the [Omni Calculator website](http://www.omnicalculator.com/health/bmr-harris-benedict-equation) at [www.omnicalculator.com/health/bmr-harris-benedict-equation](http://www.omnicalculator.com/health/bmr-harris-benedict-equation) to calculate their RMRs. This should take approximately 2 minutes.*

Let's start with your RMR. The equations on **Handout 1: Calculating Your Daily Caloric Needs** were developed to estimate RMR. Because gender is a big factor in determining RMR, there are separate equations for men and women.

Using your handout, determine your RMR (Harris & Benedict, 1918). Feel free to use your phone calculator, if needed. If you have any questions, please let me know.

*The following equations are listed on the handout:*

- *For women:  $RMR = 655 + (4.35 \times \text{weight}_{[\text{pounds}]}) + (4.7 \times \text{height}_{[\text{inches}]}) - (4.7 \times \text{age}_{[\text{years}]})$*
- *For men:  $RMR = 66 + (6.23 \times \text{weight}_{[\text{pounds}]}) + (12.7 \times \text{height}_{[\text{inches}]}) - (6.8 \times \text{age}_{[\text{years}]})$*

*PAUSE for 3 minutes.*

Would anyone like to share their RMR?

*PAUSE for responses. (Possible answers: everyone's RMR should be approximately 1000-3000)*

## SHOW Slide 6: Determine Your PAL

### **EXERCISE 1: Calculating RMR and Daily Caloric Needs (continued)**

#### Facilitator Note:

*Handout 1 will be used. The purpose of this exercise is to calculate total daily Caloric needs. This slide will discuss how we go from RMR to how many Calories someone needs to eat to maintain normal body functioning.*

*If you are short on time, you can tell participants to take the handouts home to do their final calculations. This should take approximately 1 minute.*

Let's continue using **Handout 1: Calculating Your Daily Caloric Needs**. On the screen, you can see that there are several PALs for adults to choose from. Let's review each of these PALs (Otten, Hellwig, & Meyers, 2006, p. 84).

- Sedentary: This is someone who only performs daily living activities (e.g., household tasks, walking to the bus). If this is your PAL, multiply your RMR by 1.00.
- Low active: This is someone who performs daily living activities *plus* 30-60 minutes of daily moderate activity (e.g., walking at 5-7 km/h). If this is your PAL, multiply your RMR by 1.11 (men) or 1.12 (women).
- Active: This is someone who performs daily living activities *plus* at least 60 minutes of daily moderate activity. If this is your PAL, multiply your RMR by 1.25 (men) or 1.27 (women).
- Very active: This is someone who performs daily living activities *plus* at least 60 minutes of daily moderate activity *plus* an additional 60 minutes of vigorous activity or 120 minutes of moderate activity. If this is your PAL, multiply your RMR by 1.48 (men) or 1.45 (women).

Are there any questions on the PAL categories?

*PAUSE for responses.*

If you have not already done so, please complete steps 2 and 3 on your handout.

*PAUSE for participants to complete their handout.*

Would anyone like to share their total energy requirements?

*PAUSE for responses.*



Is the number higher, lower, or the same as what you would have expected?

*PAUSE for responses.*

**Remember, these numbers are estimates of your total daily energy requirements.** The numbers you calculated could be overestimated or underestimated (Douglas et al., 2007; Marantz, 2010), depending on many factors. One of these factors is the muscle mass you have in your body (Baskin, Winders, & Olson, 2015; Zurlo, Larson, Bogardus, & Ravussin, 1990). **A person with a higher muscle mass in his or her body will burn more Calories than a person with a lower muscle mass.** Since most people do not know their body composition (i.e., percent lean body mass and fat mass), these equations only ask for height and weight. However, you can have two people with the exact same height and weight but dramatically different body compositions. **According to the equations we used today, these individuals would have the same RMR, but, in reality, their RMRs would be quite different.** It is important to understand these equations do a good job of estimating your daily energy needs, but they are not perfect. If you are considering making changes to your diet based on these values, you should consult with your personal physician first.

## **SHOW Slide 7: Applying Caloric Requirements**

Knowing how much to eat is only half of the battle. In modern day society, we have so many different food choices that it can be difficult to know what choices are right for you.

Is anyone familiar with the U.S. government dietary guidelines?

*PAUSE for responses.*

**The U.S. government releases an updated set of guidelines every 5 years, and these guidelines are rooted in scientific discovery.** The government assembles a panel of experts in nutrition research who review studies and compile a set of recommendations that are intended to be followed by the public. You can access the specific guidelines by visiting the [Dietary Guidelines for Americans website](https://www.dietaryguidelines.gov) at **[www.dietaryguidelines.gov](https://www.dietaryguidelines.gov)** (DeSalvo, Olson, & Casavale, 2016).

A substantial amount of material is included on the website, so it is recommended that you visit this site for more information. Today, we are going to review the five major dietary guidelines and explore how your diet aligns with those guidelines. This is meant to be an informative exercise to help you identify ways to make your diet healthier. Let's all agree to let this space be a non-judgement zone as we begin to discuss diet.

## SHOW Slide 8: What Does Your Diet Look Like?

### EXERCISE 2: Diet Recall

#### Facilitator Note:

*Handout 2 will be used. The purpose of this exercise is for participants to recall their dinner from the previous night and determine ways to make it just a little healthier. This should take approximately 2 minutes.*

Before we talk about the dietary guidelines specifically, let's think about what you normally eat. To recall an entire day of eating is very tedious and can be challenging, so, today, we are only going to focus on one meal. Think about what you ate for dinner last night. Using **Handout 2: Recalling Last Night's Dinner**, record everything you ate and drank for dinner last night, the serving size, and the preparation method if applicable. The example on the top of your handout lists the following: two pieces of fried chicken; one cup of steamed white rice; one ear of steamed corn; one tablespoon of butter; one Diet Coke; and one cupcake. If last night's dinner was not a typical dinner for you, consider listing what you would typically eat for dinner.

Remember, this exercise is meant to be helpful, and this is a non-judgmental space. Include as much detail as you can and be honest with yourself.

*PAUSE for 5 minutes.*

## SHOW Slide 9: What Does Your Plate Look Like?

### EXERCISE 2: Diet Recall (continued)

#### Facilitator Note:

*Handout 2 will be used. The purpose of this exercise is for participants to determine the variety of food groups they typically eat. This should take approximately 1 minute.*

OK, let's look at the variety and nutrients in our meals. You may recognize MyPlate as it is widely used in schools. However, **MyPlate is actually intended to be used as a tool to help bring a variety of nutrients into everyone's meals.** What you see on the screen represents the space each food group (e.g., protein, grains, vegetables) should occupy on each plate. **Note that alternatives in the *dairy* food group, such as coconut milk, or non-meat alternatives in the *protein* food group, such as tofu, can be counted toward those food group spaces as long as the alternative foods**

**represent a similar nutrient profile.**

Using the second page on **Handout 2: Recalling Last Night's Dinner**, draw the space each of the major food groups occupied on your dinner plate last night. If last night's dinner was for whatever reason not a typical meal for you, consider how much space each of the major food groups occupy on your dinner plate on a typical night.

*PAUSE for 1 minute for participants to complete the handout.*

OK, did anyone have all of the major food groups on his or her plate? Would anyone like to share something he or she noticed about his or her plate compared to the MyPlate guidelines?

*PAUSE for responses. (Possible answers: no fruit on their plates at dinner; protein or grains took up a lot more space on their plate; vegetables did not occupy that much space)*

What would be one thing that you could change about your dinner to make it better align with MyPlate? If your goal is to increase the amount of vegetables, would you just increase your serving size or could you do something different?

*PAUSE for responses.*

## **SHOW Slide 10: Dietary Guidelines at a Glance**

Let's read through the **five major dietary guidelines** (DeSalvo et al., 2016).

**Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate Caloric level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.

**Focus on variety, nutrient density, and amount.** To meet nutrient needs within Caloric limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.

**Limit Calories from added sugars and saturated fats, and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages that are higher in these components to amounts that fit within healthy eating patterns.

In addition, be mindful of the added sugars that you may be consuming. While you may have a general idea about how nutritious certain foods are, the specific amount of sugar and Calories in each serving of that food may surprise you.

**Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.

**Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide from home to school to work to communities.

What do you notice about the guidelines? Do you see any specific recommendations about how many grams of carbohydrates or fat or protein you should eat? What about recommendations on diet types (e.g., vegetarian, Mediterranean)?

*PAUSE for responses.*

**There is a lack of hard numbers and food choices listed within the guidelines. The dietary guidelines do not advocate for a specific diet but, rather, a general healthy way of eating.** This is in part because the guidelines are intended to be delivered to the entire U.S. population (Marantz, 2010). Creating a one-size fits all approach is inherently flawed (Maki, Slavin, Rains, & Kris-Etherton, 2014). People have diverse nutritional needs depending on a number of factors, including health status, age, gender, and activity level. Therefore, releasing guidelines that dictate that 50% of Calories should come from whole grains, for example, is not practical or generalizable to the entire population.



### **EXERCISE 3: Identifying Healthy Diet Adjustments**

Facilitator Note:

*The purpose of this exercise is for participants to identify how their current diet aligns with U.S. Dietary Guidelines and identify a minimum of one healthy shift that can be implemented. This should take approximately 5 minutes.*

There are many paths to healthy eating. The U.S. Dietary Guidelines provide a set of guiding principles to help you navigate a life of healthy eating. However, **there is not one best diet or optimal diet for health. As highlighted by the U.S. Dietary Guidelines, there are many different examples of healthy eating patterns.** You should choose a healthy eating pattern that works for you. It is not recommended that you engage in extreme techniques for weight loss as this may be harmful to your health. Because of time constraints, **we are not going to talk about any specific diet; however, the U.S. Dietary Guidelines have many available resources online if you are interested** (DeSalvo et al., 2016).

We are now going to take about 5 minutes to evaluate your diet and determine ways that you can make adjustments to better align your dinner from last night with the guidelines. **Can you identify at least one healthy shift in your diet that you can make?** Take a few minutes to reflect on your diet, and, then, find a partner with whom to discuss and share your thoughts.

*PAUSE for class to discuss with each other.*

Would anyone like to share your ideas with the class?

*PAUSE for responses. (Possible answers: using skim milk instead of full-fat milk; using olive oil instead of butter; switching from white bread to wheat bread; drink water at dinner instead of soda; non/low fat Greek yogurt instead of sour cream; baked tortilla chips instead of fried tortilla chips; baked chicken instead of fried chicken; one piece of fried chicken instead of two; dessert three times a week instead of seven; reduce sugar intake; increase intake of nutrient-dense foods)*

## SHOW Slide 11: Tips for Sticking with Dietary Guidelines

**It takes time and conscious effort to plan and execute a healthy diet. Understand that making any kind of change to your lifestyle is difficult, and it is OK if you do not get it perfect every time.**

One way you can help yourself stick with a change in your diet is to track what you are doing. There are free resources available to help you do this. **The [ChooseMyPlate website](http://www.choosemyplate.gov) at [www.choosemyplate.gov](http://www.choosemyplate.gov) and the MyFitnessPal app both offer options to track your behavior. Simply tracking your activities and food choices will make you aware of things you may not realize you are doing.** For example, how many mini butterfingers did you mindlessly snack on after dinner? You may think it was only two, but, if you were actually counting, you might have had six and not even realized it.

Does anyone have any other tools that they have used in the past?

*PAUSE for responses.*

## Fitting in Physical Activity

## SHOW Slide 12: Importance of Physical Activity

We have spent a fair amount of time talking about what you eat, but that is only half of the equation. Now that you know the major purpose of eating is to power your body's movements, let's talk about physical activity.



Physical activity is incredibly important for maintaining health. **Inactivity contributes to 1 in 10 premature deaths** (Matthews et al., 2012; Piercy et al., 2018), yet a large percentage of Americans are not physically active (Blackwell & Clarke, 2018; Troiano et al., 2008).

There are dozens of benefits of physical activity beyond reducing your risk for cardiovascular disease. **Physical activity improves cardiovascular and metabolic health; reduces risk of cardiovascular disease, diabetes, and weight gain; and helps maintain a healthy weight** (Piercy et al., 2018).

Physical activity helps people feel better and sleep better. In addition, **physical activity offers many mental health benefits that translate to improved quality of life, reductions in depression and anxiety, and improved cognition** (Ensari, Greenlee, Motl, & Petruzzello, 2015).

**Physical activity can also improve your sleep quality, so you fall asleep faster and wake up less frequently during the night** (Flausino, Da Silva Prado, de Queiroz, Tufik, & de Mello, 2012; Yang, Ho, Chen, & Chien, 2012).

In addition to these general health benefits for adults, **there are a number of chronic conditions that can be managed by increasing physical activity** (Nunan, Mahtani, Roberts, & Heneghan, 2013).

### SHOW Slide 13: U.S. Physical Activity Guidelines

Just like the dietary guidelines we talked about earlier today, the U.S. government also has a set of guidelines for physical activity. The key message is: **move more and sit less**.

The figure you see on the screen represents someone's health as his or her amount of sitting and physical activity change. At the top left corner, the color is dark red. The person who falls in this section sits almost all of the time, moves very little, and has very poor health.

If you take that same person and get him or her to sit a little less and move a little more, his or her health improves significantly. He or she is now in the yellow zone, which denotes improvement.

If this person moves even more and sits even less, his or her health improves dramatically, and he or she is now in the green section, which indicates great health.

The take-home message is that significant health improvements can be achieved just by moving a little. In fact, **some of the most significant health improvements can occur when someone goes from zero physical activity to some physical activity**

(Healy et al., 2008; Zhao, Veeranki, Li, Steffen, & Xi, 2019).

**The goal is to accumulate 150 minutes of moderate-intensity physical activity over the course of a week. That equates to about 30 minutes of activity performed on 5 days of the week. Ideally, this activity is a combination of aerobic (e.g., walking, swimming, running, bicycling) and muscle strengthening activity (Arem et al., 2015; Pate et al., 1995). If that goal is more than you can do right now, do what you can! Even 5 to 10 minutes of physical activity can have demonstrated health benefits (Dempsey et al., 2016; Dempsey et al., 2017; Healy et al., 2008; Zhao et al., 2019).**

Earlier in the class, you calculated your daily Caloric requirement. Which category did you choose to represent your level of activity? At this point, **we are not so concerned with whether you are meeting the guidelines for physical activity.** Instead, **if you are not yet meeting the guidelines for physical activity, let's determine how to get you to be a little more active.** Adding or increasing physical activity can significantly change your total Calorie requirement.

### **SHOW Slide 14: Breaking Down Barriers**

Raise your hand if you are currently physically active for at least 150 minutes over the course of a week (i.e., about 30 minutes a day, 5 days a week).

*PAUSE for a show of hands.*

How many of you are not as active as you want to be?

*PAUSE for a show of hands.*

For those who are not as active, why is this the case? What gets in the way?

*PAUSE for responses. (Possible answers: no time to do it; don't enjoy exercise; no place to be active)*

For those individuals who are physically active, what motivates you?

*PAUSE for responses. (Possible answers: to maintain or improve health; it helps with relaxation; it is a job requirement; I feel better when I exercise; my back does not hurt as much when I get up frequently and move around; I have friends who are counting on me to be there and walk with them; my kids love to go on family bike rides)*

For those individuals who are physically active, what strategies do you use to fit physical activity into your day?

*PAUSE for responses. (Possible answers: build it into daily routine; find a physical activity that is enjoyable; walk while talking on the phone; exercise with a partner)*

Just as too little exercise is detrimental to health, extreme exercise (e.g., waiting until the last minute to get in shape for a physical fitness test) could also result in health issues (Morris & Jennings, 2019; Rathi, 2014).

## SHOW Slide 15: Strategies to Fit in Physical Activity

**Being physically active does not necessarily mean you need to get a gym membership. It can be as simple as walking with your family to the corner store to buy milk. Let's talk about some common barriers to physical activity and potential solutions.**

- **No time.** This is the most common barrier to exercise (American Heart Association [AHA], n.d.).
  - Potential solution: Incorporate physical activity into daily activities (e.g., **park farther away from your destination in parking lots, take stairs**).
- **Busy with children** (AHA, n.d.).
  - Potential solution: Exercise with children (e.g., **family bike rides, family walks or hikes, bring older children to exercise classes**) or exercise during nap time, if feasible.
- **No gym membership** (AHA, n.d.).
  - Potential solution: Be active outside (e.g., **after dinner walks, commuting to work using a bike or public transportation**). Even taking a bus may force you to walk more than just driving your car and parking in a parking lot.
  - Potential solution: Invest in home gym equipment (e.g., **dumbbells, kettlebells, exercise bands, exercise videos, jump rope**)
  - Potential solution: Join local sports leagues (e.g., **pick-up leagues, local parks and recreation programs**)
- **Don't enjoy exercising.**
  - Potential solution: Discover activities that bring you joy (e.g., **gardening, woodworking, dance, summer softball league, yoga, kayaking**). **Research shows that if you enjoy an activity, you are more likely to stick with it in the long term** (Dalle Grave, Calugi, Centis, El Ghoch, & Marchesini, 2011; Ingledew & Markland, 2008)

**Another, unconventional way to encourage physical activity might be to adopt a dog if this is feasible for you. Research has shown that dog owners tend to walk more than non-dog owners** (Dall et al., 2017; Ham & Epping, 2006). Remember, having a dog is a big commitment.

If you are interested in learning about more ideas for how to incorporate healthy strategies into your life, take a look at Handout 3: Potential Strategies for Improving Health, which is available on the [YRRP website](http://www.yellowribbon.mil/cms/event-handout) at [www.yellowribbon.mil/cms/event-handout](http://www.yellowribbon.mil/cms/event-handout).

**Much like with making a lifestyle change to improve your diet, incorporating more activity into your routine can be difficult, and it is OK if you do not do it perfectly every day.**

## Sleeping Well

### **SHOW Slide 16: Sleep for Optimal Health**

We have spent the majority of our time discussing modifications you can make to your nutrition and physical activity to improve your health. Both of these behaviors occur during waking hours; however, it is also important to consider your sleep. Sleep has become recognized as an important determinant of your health. **Getting enough sleep is critical for managing weight; reducing risk of chronic disease; supporting memory, mood, and learning; and maintaining the immune system** (Diekelmann & Born, 2010; Engeda, Mezuk, Ratliff, & Ning, 2013; Stickgold, 2005; von Ruesten, Weikert, Fietze, & Boeing, 2012).

How many hours of sleep do you think you need to function optimally?

*PAUSE for responses.*

**The National Sleep Foundation has stated that adults should sleep for 7-8 hours every night.** How many of you slept for at least 7 hours last night, or, if last night was not a typical night for you, how many of you sleep for at least 7 hours in a typical night?

*PAUSE for responses.*

How many people slept for 6 hours or less?

*PAUSE for responses. COUNT the number of individuals who slept for 6 hours or less.*

Looking around the room [*insert number*] people are not getting the nightly recommended amount of sleep.

In addition to the total amount of sleep, the quality of your sleep is also important for your health.

How many people had either trouble falling asleep, woke up more than once during their night of sleep, or did not feel rested after their night of sleep?

*PAUSE for responses.*

Since sleep is so important for your health, let's spend some time talking about how to improve your sleep.

## SHOW Slide 17: Strategies to Improve Your Sleep

It may seem like improving your sleep is next to impossible, but there are **several strategies you can use to improve your sleep habits (also known as sleep hygiene)** (Irish, Kline, Gunn, Buysse, & Hall, 2015). The following recommendations were compiled by the American Academy of Sleep Medicine:

- **Keep a consistent sleep schedule.**
  - Get up at the same time (or within a reasonable window of time) every day, even on weekends or during vacations. Getting your body to anticipate sleeping and waking up will help you sleep better over time. It can be hard to establish a routine, but it is worth it.
- **Set a bedtime that is early enough for you to get at least 7 hours of sleep.**
  - It is going to take you some time to fall asleep. If you want to get 7 hours of sleep, you need to make sure you are in bed for more than 7 hours to allow yourself time to fall asleep.
- **Do not go to bed unless you are sleepy.**
- **If you do not fall asleep after 20 minutes in bed, get out of bed.**
  - It is important to make sure you associate your bedroom with sleep. If you are not sleeping (or having sex), you should not be in bed. Get out of bed, and do something unstimulating (e.g., read a boring book). Also, make sure you are not doing other things while you are in bed (e.g., watching TV).
- **Establish a relaxing bedtime routine.**
  - Taking a bath before bedtime may help create this routine. Other examples include listening to a story telling podcast, playing some soft music or white noise to calm your body, or practicing meditation.
- **Make your bedroom quiet and relaxing.**
  - Keep the room at a comfortable, cool temperature, if possible. Warm temperatures can make it harder to fall asleep. If you sleep with a partner, keep the room temperature cool enough for both people. The rule of thumb is that no one should be warm when they are falling asleep. You can always put on more blankets.



- **Limit exposure to bright light in the evenings, and turn off electronic devices at least 30 minutes before bedtime.**
  - Light gives our brain the signal that it is time to be awake. Limiting your exposure to bright light and screens near bedtime will help give your brain the cue that it is time for sleep.
- **Do not eat a large meal before bedtime.**
  - If you are hungry at night, eat a light, healthy snack. However, the best thing that you can do is to avoid eating.
- **Exercise regularly and maintain a healthy diet.**
- **Avoid consuming caffeine in the late afternoon or evening.**
  - Depending on your caffeine tolerance, you may be more or less sensitive to it. Ensure you are aware of how your body reacts to caffeine.
- **Avoid consuming alcohol before bedtime.**
  - While alcohol helps people fall asleep, as soon as your body clears the alcohol from your blood stream, you are more likely to wake up and not get as much deep restorative sleep in the last half of the night.
- **Reduce your fluid intake before bedtime.**

Like making changes to your diet and physical activity, you can also make changes to your lifestyle to support better sleep. If you want to practice some better sleep hygiene, start by trying to change one part of your bedtime routine. Creating and maintaining a bedtime routine can be challenging, particularly on weekends. **One of the most important things to remember is that your body likes routines and regularity.** The more regularity you can create with your sleep timing, bedroom conditions, and behaviors around bedtime, the better you will sleep over time.

## Summary

### **SHOW Slide 18: Review of Objectives**

Let's look back at the goals you set at the beginning of the class. Given what you learned today, reflect on some steps that you could take in order to achieve these goals.

*PAUSE for one minute.*

Evaluating your behavior and determining ways to improve your health can be an overwhelming experience. You may not get it perfectly right the first time. But, I hope that some of the strategies we discussed are helpful in allowing you to see areas in your lifestyle where you can make small changes to make big improvements to your health.

Let's see if we met our objectives:

1. **Can you briefly describe the current U.S. Department of Health recommendations for nutrition and physical activity? If not, do you know where you can find these guidelines? PAUSE for responses.**  
(Possible answers: follow a healthy eating pattern; focus on variety, nutrient density, and amount; limit Calories from added sugars and saturated fats; shift to healthier food and beverage choices; support healthy eating patterns for all; move more and eat less; exercise at moderate intensity for at least 150 minutes a week)
2. **Do you know approximately how many Calories your body needs in a day to support your daily routines? PAUSE for responses.**
3. **What is one strategy that you are going to employ to increase your physical activity? PAUSE for responses.**  
(Possible answers: incorporate exercise into daily activities; exercise with your children; be active outside; find physical activities that you enjoy)
4. **What is one thing you can do tonight to help improve your sleep? PAUSE for responses.**  
(Possible answers: do not go to bed unless you are sleepy; get out of bed if you do not fall asleep after 20 minutes; limit exposure to bright light in the evening; do not eat a large meal before bedtime; avoid consuming alcohol before bedtime; avoid consuming caffeine in the late afternoon or evening; reduce your fluid intake)

## **SHOW Slide 19: Health Matters**

Before we conclude, does anyone have any final questions or comments they wish to share?

*PAUSE for responses.*

Thank you, and please complete your evaluation for this class.

## References

- Ainsworth, B. E., Haskell, W. L., Herrmann, S. D., Meckes, N., Bassett, D. R., Tudor-Locke, C., ... Leon, A. S. (2011). 2011 Compendium of physical activities: A second update of codes and MET values. *Medicine & Science in Sports & Exercise*, 43(8), 1575-1581. doi:10.1249/MSS.0b013e31821ece12
- American Heart Association (AHA). (n.d.). Breaking down barriers to fitness. Retrieved from the [AHA website](http://www.heart.org/en/healthy-living/fitness/getting-active/breaking-down-barriers-to-fitness) at www.heart.org/en/healthy-living/fitness/getting-active/breaking-down-barriers-to-fitness
- Arem, H., Moore, S. C., Patel, A., Hartge, P., De Gonzalez, A. B., Visvanathan, K., ... Linet, M. S. (2015). Leisure time physical activity and mortality: A detailed pooled analysis of the dose-response relationship. *JAMA Internal Medicine*, 175(6), 959-967. doi:10.1001/jamainternmed.2015.0533
- Baskin, K. K., Winders, B. R., & Olson, E. N. (2015). Muscle as a "mediator" of systemic metabolism. *Cell Metabolism*, 21(2), 237-248.
- Blackwell, D. L., & Clarke, T. C. (2018). State variation in meeting the 2008 federal guidelines for both aerobic and muscle-strengthening activities through leisure-time physical activity among adults aged 18-64: United States, 2010-2015. *National Health Statistics Reports* 112, 1-22.
- Clark, N. (2014). *Nancy Clark's sports nutrition guidebook* (5th ed.). Champaign, IL: Human Kinetics.
- Dall, P. M., Ellis, S. L. H., Ellis, B. M., Grant, P. M., Colyer, A., Gee, N. R., ... Mills, D. S. (2017). The influence of dog ownership on objective measures of free-living physical activity and sedentary behaviour in community-dwelling older adults: A longitudinal case-controlled study. *BMC Public Health*, 17(1), 496.
- Dalle Grave, R., Calugi, S., Centis, E., El Ghoch, M., & Marchesini, G. (2011). Cognitive-behavioral strategies to increase the adherence to exercise in the management of obesity. *Journal of Obesity*, 2011, 1-11. doi:10.1155/2011/348293
- Dempsey, P. C., Blankenship, J. M., Larsen, R. N., Sacre, J. W., Sethi, P., Straznicky, N. E., ... Kingwell, B. A (2017). Interrupting prolonged sitting in Type 2 Diabetes: Nocturnal persistence of improved glycaemic control. *Diabetologia*, 60(3), 499-507. doi:10.1007/s00125-016-4169-z

- Dempsey, P. C., Larsen, R. N., Sethi, P., Sacre, J. W., Straznicky, N. E., Cohen, N. D., ... Dunstan, D. W. (2016). Benefits for Type 2 Diabetes of interrupting prolonged sitting with brief bouts of light walking or simple resistance activities. *Diabetes Care*, 39(6), 964-972. doi:10.2337/dc15-2336
- DeSalvo K. B., Olson R., & Casavale K. O. (2016). Dietary guidelines for Americans. *JAMA*. 315(5), 457-458. doi:10.1001/jama.2015.18396
- Diekelmann, S., & Born, J. (2010). The memory function of sleep. *Nature Reviews Neuroscience*, 11(2), 114-126.
- Douglas, C. C., Lawrence, J. C., Bush, N. C., Oster, R. A., Gower, B. A., & Darnell, B. E. (2007). Ability of the Harris-Benedict formula to predict energy requirements differs with weight history and ethnicity. *Nutrition Research*, 27(4), 194-199. doi:10.1016/j.nutres.2007.01.016
- Engeda, J., Mezuk, B., Ratliff, S., & Ning, Y. (2013). Association between duration and quality of sleep and the risk of pre-diabetes: Evidence from NHANES. *Diabetic Medicine*, 30(6), 676-680. doi:10.1111/dme.12165
- Ensari, I., Greenlee, T. A., Motl, R. W., & Petruzzello, S. J. (2015). Meta-analysis of acute exercise effects on state anxiety: An update of randomized controlled trials over the past 25 years. *Depression and Anxiety*, 32(8), 624-634. doi:10.1002/da.22370
- Flack, K. D., Siders, W. A., Johnson, L., & Roemmich, J. N. (2016). Cross-validation of resting metabolic rate prediction equations. *Journal of the Academy of Nutrition Dietetics*, 116(9), 1413-1422. doi: /10.1016/j.jand.2016.03.018
- Flausino, N. H., Da Silva Prado, J. M., de Queiroz, S. S., Tufik, S., & de Mello, M. T. (2012). Physical exercise performed before bedtime improves the sleep pattern of healthy young good sleepers. *Psychophysiology*, 49(2), 186-192. doi:10.1111/j.1469-8986.2011.01300.x
- Ham, S. A., & Epping, J. (2006). Peer reviewed: Dog walking and physical activity in the United States. *Preventing Chronic Disease*, 3(2), 1-9.
- Harris, J. A., & Benedict, F. G. (1918). A biometric study of human basal metabolism. *Proceedings of the National Academy of Sciences of the United States of America*, 4(12), 370-373.
- Healy, G. N., Dunstan, D. W., Salmon, J., Cerin, E., Shaw, J. E., Zimmet, P. Z., ... Owen, N. (2008). Breaks in sedentary time: Beneficial associations with metabolic risk. *Diabetes care*, 31(4), 661-666.

- Ingledeu, D. K., & Markland, D. (2008). The role of motives in exercise participation. *Psychology and Health*, 23(7), 807-828. doi:10.1080/08870440701405704
- Irish, L. A., Kline, C. E., Gunn, H. E., Buysse, D. J., & Hall, M. H. (2015). The role of sleep hygiene in promoting public health: A review of empirical evidence. *Sleep Medicine Reviews*, 22, 23-36. doi:10.1016/j.smr.2014.10.001
- Maki, K. C., Slavin, J. L., Rains, T. M., & Kris-Etherton, P. M. (2014). Limitations of observational evidence: implications for evidence-based dietary recommendations. *Advances in Nutrition*, 5(1), 7-15. doi:10.3945/an.113.004929
- Marantz, P. R. (2010). Rethinking dietary guidelines. *Critical Reviews in Food Science and Nutrition*, 50(S1), 17-18. doi:10.1080/10408398.2010.526846
- Matthews, C. E., George, S. M., Moore, S. C., Bowles, H. R., Blair, A., Park, Y., ... Schatzkin, A. (2012). Amount of time spent in sedentary behaviors and cause-specific mortality in US adults. *The American Journal of Clinical Nutrition*, 95(2), 437-445. doi:10.3945/ajcn.111.019620.
- Morris, R. W., & Jennings, M. C. (2019). Exertional rhabdomyolysis. *Applied Radiology*, 48(4), 36-37.
- Nunan, D., Mahtani, K. R., Roberts, N., & Heneghan, C. (2013). Physical activity for the prevention and treatment of major chronic disease: an overview of systematic reviews. *Systematic Reviews*, 2, 56.
- Otten, J. J., Hellwig, J. P., & Meyers, L. D. (Eds.). (2006). *Dietary reference intakes: The essential guide to nutrient requirements*. Washington, DC: National Academies Press.
- Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., ... Kriska, A. (1995). Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA*, 273(5), 402-407.
- Piercy, K. L., Troiano, R. P., Ballard, R. M., Carlson, S. A., Fulton, J. E., Galuska, D. A., ... Olson, R. D. (2018). The Physical Activity Guidelines for Americans. *JAMA*, 320(19), 2020-2028. doi:10.1001/jama.2018.14854
- Rathi, M. (2014). Two cases of CrossFit®-induced rhabdomyolysis: A rising concern. *International Journal of Medical Students*, 2(3), 132-134.
- Stickgold, R. (2005). Sleep-dependent memory consolidation. *Nature*, 437(7063), 1272-1278. doi:10.1038/nature04286



- Troiano, R. P., Berrigan, D., Dodd, K. W., Masse, L. C., Tilert, T., & McDowell, M. (2008). Physical activity in the United States measured by accelerometer. *Medicine and Science in Sports and Exercise*, 40(1), 181-188. doi:10.1249/mss.0b013e31815a51b3
- Von Ruesten, A., Weikert, C., Fietze, I., & Boeing, H. (2012). Association of sleep duration with chronic diseases in the European Prospective Investigation into Cancer and Nutrition (EPIC)-Potsdam study. *PloS ONE*, 7(1), e30972. doi:10.1371/journal.pone.0030972
- Yang, P. Y., Ho, K. H., Chen, H. C., & Chien, M. Y. (2012). Exercise training improves sleep quality in middle-aged and older adults with sleep problems: A systematic review. *Journal of Physiotherapy*, 58(3), 157-163. doi:10.1016/S1836-9553(12)70106-6
- Zhao, M., Veeranki, S. P., Li, S., Steffen, L. M., & Xi, B. (2019). Beneficial associations of low and large doses of leisure time physical activity with all-cause, cardiovascular disease and cancer mortality: A national cohort study of 88,140 US adults. *British Journal of Sports Medicine, Published Online First*, 1-8. doi:10.1136/bjsports-2018-099254
- Zurlo, F., Larson, K., Bogardus, C., & Ravussin, E. (1990). Skeletal muscle metabolism is a major determinant of resting energy expenditure. *Journal of Clinical Investigation*, 86(5), 1423-1427. doi:10.1172/JCI114857