

Master of Public Health Field Experience Report

EDUCATING RILEY COUNTY SENIORS IN BASIC NUTRITION

by

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submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

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Summary

The average age of the population of the United States continues to increase. Older adults are one group of people that are often missed when programs are developed for nutrition. Even though they largely consume food that younger and middle-aged adults do, there are specific things to keep in mind when choosing food for an older adult. There are certain nutrients that they need and others that may cause medical complications if they are consumed in large amounts. The purpose of this project was to develop and present a six-week course in basic nutrition to an older audience with the hopes of educating them on small changes they can make that can lead to a higher quality of life. A pre-assessment and a post-assessment were used to determine if the program had an impact on participants.

Subject Keywords: nutrition, older adults, food safety, shopping tips, proportions, labels

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Chapter 1 - Field Experience Scope of Work

My field experience was completed in conjunction with the Riley County Research and Extension Office in Manhattan, Kansas during the Spring of 2016. I completed a total of 180 contact hours.

The Riley County Research and Extension Office is part of a larger network of Extension Offices that spread throughout the state of Kansas. K-State Research and Extension serve all 105 counties in Kansas¹, and provide research on a variety of topics, including agriculture, horticulture, the 4-H program, community development, youth development, and Family and Consumer Sciences.²

In a broader sense, the Cooperative Extension was created in 1914 in order to provide information to rural and urban areas collected in research at land-grant universities. In the beginning, the Extension addressed rural and agricultural issues, as half of the American population lived in rural areas and a third were involved in farming.³ With the changing culture in the last century, the Extension also had to change. Now, only 17 percent of Americans live in rural areas with less than 2 percent of Americans farming. Because the majority of the population now lives in cities and suburbs, as well as working in industries other than farming, the Extension had to reevaluating the areas of research and information. Overall, the Cooperative Extension is focused on improving the lives of the greater population.

I completed my field experience under the guidance of Virginia (Ginny) Barnard. Ms. Barnard is the designated Family and Consumer Sciences Agent for the Riley County Research and Extension Office. She focuses on developing and implementing educational programs focused around food and nutrition, food safety, health and safety, and indoor environments. She also completed her Master's in Public Health from Kansas State in 2006.

While working with Ms. Barnard, I was tasked with creating and delivering a 6-week nutrition program at the Riley County Seniors' Service Center focused on basic nutrition for older adults. The Riley County Seniors' Service Center provides programs for older adults on a variety of topics, including health and wellness, personal growth,

arts and crafts, safety, financial planning, and community involvement. The Center also provides a place for older adults to gather and socialize.⁴

Proper Nutrition and Aging

Proper nutrition for older adults is a growing concern in the United States, which is driven by the overall aging of the population. Over the last 100 years, the proportion of adults 65 years old and older has gradually increased, reaching a high in the 2010 census. The rate of adults 65 years old and older also grew quicker than the overall population from 2000 to 2010.⁵ We are now in an environment where there are more adults 65 years old and older than in any time in history. This group of adults require different focuses in nutrition and wellness, which is the primary reason I wanted to work with them. Many times, nutrition education focuses on the general public or on specific groups, such as pregnant women, infants, and children. There are only a handful of basic nutrition programs focused on senior adults, which is why I wanted to try to better educate the seniors in Riley County.

As we age, our bodies may experience a change in makeup.⁶ This means that we may see a loss in muscle mass, increased frailty, and a decrease in metabolism.⁶ Even though less calories are necessary to prevent weight gain, the body still needs nutrients to perform properly. The best way to get nutrients is through food⁷, therefore as we age, we need to focus on nutrient dense foods. One way to combat a decrease in metabolism is to use the “calories in, calories out” method. This basic method helps to maintain a proper weight.⁴

We also know how important it is to be at a proper weight. It is extremely important for older adults to maintain a proper weight because many health issues may be avoided when one is at an ideal weight.⁶ Being overweight can lead to an increased risk of type 2 diabetes, heart disease, high blood pressure, and other ailments.⁶ Following a proper diet may help manage any chronic diseases that an older adult already has.⁷ It is important for older adults to continue physical activity, such as weight bearing exercises, as they are able. It is also important for older adults to not become underweight. There are many issues that may cause one to become underweight⁷, such as not being as interested in eating, not having enough to eat, not

getting the proper nutrients, or having an illness that prevents hunger or proper nutrient absorption. It is important for older adults to avoid becoming too underweight, which could stress the body and organ systems more.⁶

The average sodium intake in the United States is higher than recommended.⁸ Even though most foods have sodium naturally, most of the sodium consumed in the United States is from sodium added to foods. This added sodium can be added during processing or added after the food is cooked.⁹ High levels of sodium can be dangerous for everyone, but older adults may see worse consequences to high sodium intake due to a decrease in efficiency of organs. Older adults are more susceptible to high blood pressure compared to younger age groups because there is an increased risk of high blood pressure as we age.¹⁰ As of 2014, 10.8% of adults age 20-44 had high blood pressure, 41.6% of adults age 45-64 had high blood pressure, and 63.8% of adults age 65 and older had high blood pressure. High blood pressure can lead to many issues, such as heart failure, aneurysms, kidney failure, vision problems or blindness, heart attacks, and strokes.¹⁰

Many older adults are on a fixed income, and it is important to be able to afford the basics in life, such as food, water, warmth, shelter, safety, and security.¹¹ Maslow's Hierarchy of Needs lays out just how important being able to have the basics in life are to psychological health and well-being.¹¹ The foundation of survival is having the most basic need met, and it is the primary reason for motivation in life. The basic needs, according to Maslow are split into two categories: physiological needs and safety needs. Physiological needs include food, water, warmth, and rest. Safety needs include security and safety of the body, home, and property.

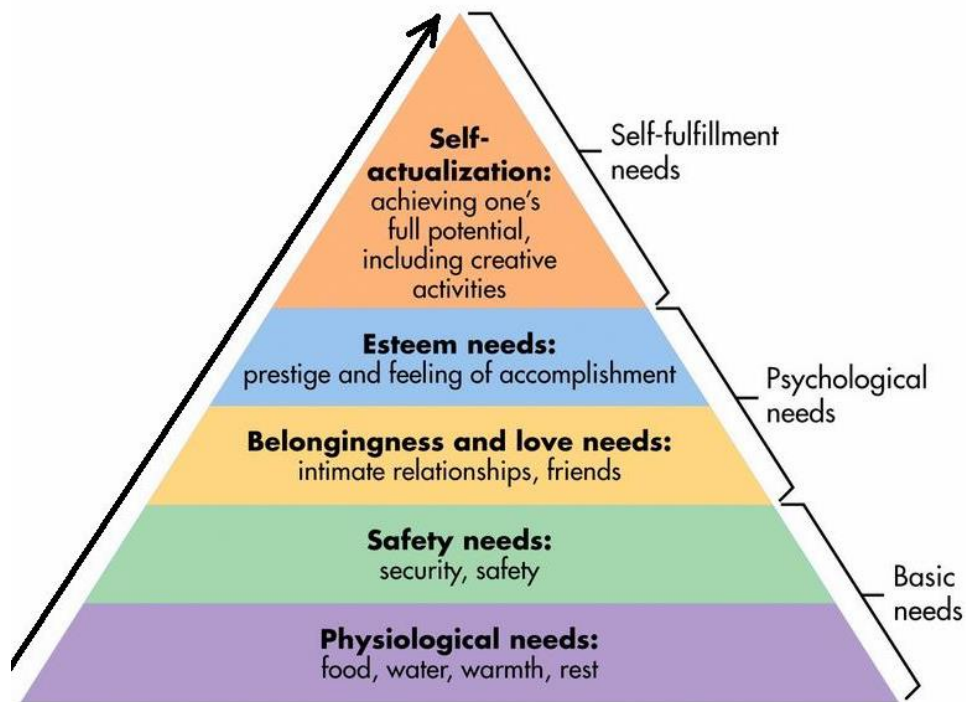


Figure 1.1 Maslow's Hierarchy of Needs

As the figure shows, food is a basic need for everybody. When one is on a fixed income, it may be difficult to get the basics such as food and shelter. It is important for older adults to be able to know what resources are available in order to obtain the proper amounts of food that they need. There are many resources that are underutilized at both a national and local level.

As mentioned above, safety is also a very important basic need. Foods may taste different due to changes in senses (taste and smell), which may lead to decrease desire for foods once considered favorites. Having a good sense of smell can also keep us safe. Most of the deaths due to foodborne illnesses in the United States are children or older adults due to compromised immune systems.¹² There are many reasons that older adults are more susceptible to falling ill to foodborne illnesses. First, as the body ages, organs may not be efficient as they once were. The body may take longer to rid the body of waste, or the digestive system may hold onto foods for a longer period of time.¹² Second, older adults are also more likely to be diagnosed with a chronic condition, which may weaken their immune system.¹² Third, with a decreased sense of smell and taste, it may be more difficult to identify food which has gone bad.

Chapter 2 - Learning Objectives

There were many learning objectives that I created with Ms. Barnard's help. First, I wanted to understand how to organize and implement a nutrition program to an underserved audience. As previously stated, older adults experience many life changes and are often overlooked as a population who needs help adjusting. There are not many programs that are specific for older adults to help them better understand basic nutrition.

Secondly, I wanted to identify recruitment methods or ways to reach a target population. Ms. Barnard was a big help to finding the best location to deliver the program. She works with many different organizations in Riley County, and she knew just the place for me to contact. I was aware of the Riley County Seniors' Service Center prior to presenting my program there, but I was unaware of the totality of what they provided for the community. Following my contact with the head of the Riley County Seniors' Service Center, I created a flyer that helped to recruit a group of older adults each week.

Third, I wanted to recognize and implement methods to keep participants motivated and engaged. I know we all learn in different manners (visual, audio, hands-on, etc.), and from years of lecture attendance, I know that it is difficult to stay engaged during a long lecture. During my weekly presentations, I made sure to stop after a couple of slides to ask questions, such as current behaviors around the topic for that week, which helped to keep the groups focused on the overall message. Throughout the six weeks, I maintained an average of 12 participants. I was not confident that I would have people return the second week, but the only absences from week to week were from illnesses or prior engagements.

Fourth, I wanted to evaluate program success and future implementation using pre- and post-assessments created based on material presented during the duration of the program from program participants and center partners. As mentioned above, attendance was fairly consistent from week-to-week, and participants were excited to learn what we would be covering that week. The assessment I created helped participants to preview what would be covered over the six weeks. Also, the results from

the pre-assessment were able to be compared to the post-assessment to see if the material was retained. I created all of the questions by taking the lessons and finding the main messages that I wanted participants to take away.

Last, I wanted to gain a better overall understanding of community-based public health programs. Before this program, I knew there were national community-based programs, but I did not know how successful they would be in a smaller setting. I was also unaware of the scope of what the extension office did locally to help educate the population of Riley County. For a trained nutritionist, some of what I presented seemed like common sense, and some of the participants shared that they thought it was common sense, but others were happy to learn new things about nutrition. It was also a good way to help dispel some myths behind information that participants may have thought were correct. There are a lot of “common knowledge” facts that are not entirely correct, and public health programs are just one of many ways in which information can be corrected. Ms. Barnard also advised me to have a “share table” at each session that participants could bring information in that they wanted to share with others. Ms. Barnard advised me from the beginning that I may have quite a few questions that we could not answer due to them being medically specific.

Activities Performed

The first activity that was performed for my project was to create a flyer for recruitment with help translating material into Spanish based on the target population. With any program, participation is key, and one of the best ways to spread the word about an event is through flyers. Ms. Barnard helped me to get the flyer completed and distributed. I did not translate the flyer into Spanish because the target population for the program did change from the Flint Hills Community Clinic to the Riley County Seniors’ Service Center. The population at the Seniors’ Service Center primarily speaks English, so there was no need for the translation anymore.

The second activity was to get feedback from the target population to determine what kind of information they would find the most helpful. Again, with the target population change, this activity was not necessary. I did work with Ms. Barnard to determine a good outline for the program, and I worked with the program director of the

Seniors' Service Center to confirm that the program materials would be beneficial for the clients.

Third, I had to prepare, organize, and conduct a minimum of six nutrition education lessons. I created six lessons that covered nutrition basics, an in-depth look at nutrition labels, an in-depth look at nutrients (such as Vitamin D, Vitamin B₆, Vitamin B₁₂, Folate, Calcium), healthy living, shopping tips, and food safety. Each lesson had a PowerPoint presentation and an interactive piece. Each session lasted at least an hour, depending on the amount of dialogue the lesson stimulated. At the end of each session, participants were given a handout that covered information from the week's session material. The handouts are included in the Appendix.

Finally, I wanted to evaluate and assess the program design and implementation. This was done by using pre- and post-evaluations, as well as feedback from Ms. Barnard and program directors at the Seniors' Service Center. A copy of the pre- and post-evaluation form is included in the Appendix. Participants that completed the pre- and post-evaluations were all attendees of the Center, but no other demographic information was collected.

I completed a paired t-test statistical analysis using Excel on pre-assessment average and the post-assessment average for each question. Based on the pre-assessment mean of 3.6, participants had a neutral feeling about the behaviors they were questioned about. They were not overly confident or actively performing the behaviors the lessons were to cover. The post-assessment mean was 4.2 which aligns with a feeling of agreement on the behaviors. There was an overall increase of 0.6 in the mean from the pre-assessment to the post-assessment. Below is a table summarizing the numbers used to run the analysis.

Table 2.1 Paired T-test

	Mean	Standard Deviation	T-Statistic	p-Value
Pre	3.6	0.46	7.58	<0.001
Post	4.2	0.27		

Based on the results of the t-test ($p < 0.001$), the results are significant. There was a significant change in behaviors of participants before and after the program

intervention. This shows that participants thought that they were more consistently doing healthy behaviors at the end of the six-week program.

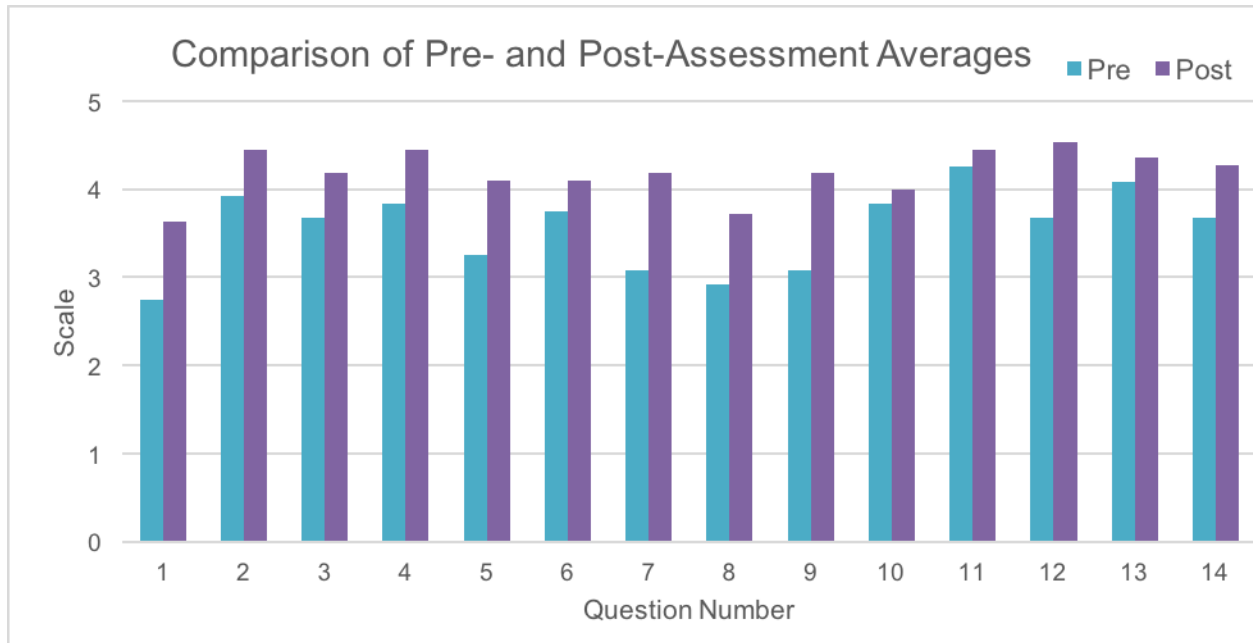


Figure 2.1 Graph Comparing Pre-Assessment and Post-Assessment Averages for Each Question

Products Developed

I developed a marketing flyer, pre- and post-evaluations, weekly handouts, and PowerPoint presentations for the program. During the planning process, I thought that phone calls or text reminders for sessions would be helpful to participants. I decided against using reminders because the number of participants remained consistent from week to week. I think that the reminders would have been helpful if there would have been a large drop in attendance from the first week to the second week. Also, the weeks that certain participants could not attend for whatever reason, someone else in the group would grab a handout for them. I would also encourage a question and answer session on the previous week's material at the beginning of the next session. This gave anyone who missed the previous week the chance to clarify any of the information. The following pages include the PowerPoint slides used throughout the six-week program.

Lesson 1: Nutrition Basics

— Emily Sperry
Kansas State University

About Me


**KANSAS STATE
UNIVERSITY**

- Received Bachelor's degree in Public Health Nutrition, Spring 2013
- Finishing Master's degree in Public Health
- Love helping people to feel better and to live the best life possible
- Born and raised in Kansas



What I hope you gain from this course:

- Better understanding of overall nutrition
- How to use food labels to make good choices
- Serving sizes vs. portions
- Daily recommendations for nutrients and how they can be useful



What I hope you gain from this course: (continued)


- Vitamins and minerals to focus on
- How to live a healthy lifestyle
- Shopping tips
- Food safety





Pre-evaluation

- Short questionnaire based on current behaviors
- No right or wrong answers



What is a calorie?

- The way to measure the energy that a food item contains
- Daily calorie needs are based on a variety of things
 - Age
 - Gender
 - Physical Activity



Daily Calorie Needs

Men		
Not Physically Active	Moderately Active	Active
2,000-2,200 calories	2,200-2,400 calories	2,400-2,800 calories
Women		
Not Physically Active	Moderately Active	Active
1,600 calories	1,800 calories	2,000-2,200 calories

Activity Levels: voluntary movements done to burn calories

– Not Active

- No extra day-to-day activity outside of normal movement

– Moderately Active

- Walking, dancing, water aerobics

– Active

- Jogging, singles tennis, swimming laps



Food Groups

- Grains
- Vegetables
- Fruits
- Protein Foods
- Dairy Products
- Oils
- Solid Fats and Added Sugars



Image courtesy of <http://www.fortnowork.com/food-groups-healthy-eating/>

Grains

- At least half of calories should be *whole* grains



Slice of bread



Cup flaked cereal



½ cup cooked rice, pasta, or cereal



6" corn or flour tortilla



Small (2 ½" muffin)



Half an English muffin

Vegetables

- Try to eat a variety of colors to get all of the different nutrients



Large stalk of celery



Six baby carrots



Five broccoli florets



Small (6") ear of corn



Half of a red pepper



½ cup cooked green beans

Fruits

- Apples and pears can provide extra fiber in the skins



Four strawberries



Four ounces 100% fruit juice



½ cup dried fruit



Half an 8" banana



Half a medium grapefruit



Sixteen grapes

Protein Foods

– Try to eat seafood at least twice a week



12 almonds



One egg



1/2 cup cooked beans



Tablespoon peanut butter



1/2 cup tofu



2 tablespoons hummus

Dairy Products

– Try to pick low-fat or fat-free choices



1 1/2 ounces hard cheese



1/3 cup shredded cheese



1 cup soy beverage



8 ounces yogurt



2 cups cottage cheese



1 cup pudding made with milk

Oils

– Use oils instead of solid fats when cooking.



1/2 of a medium avocado is equal to 3 teaspoons of oil



4 large olives is equal to 1/2 teaspoon of oil



1 tablespoon of peanut butter equals 2 teaspoons of oil



1 ounce dry-roasted nuts equals 3 teaspoons of oil



1 ounce of sunflower seeds equals 3 teaspoons of oil



1 tablespoon mayo equals 2 1/2 teaspoons of oil

Interactive session

– We are going to guess which of these common household items represent serving sizes.

- Golf ball
- Deck of cards
- Four dice
- Checkbook
- Baseball
- Half of Baseball
- Large Egg
- CD or DVD



Two tablespoons?

A Golf Ball!



Three ounces of meat?

A Deck of Cards!



Three ounces of meat?

Palm of Hand!



1-1 ½ ounces of cheese?

First Finger! 4 Dice!



One teaspoon
margarine or oil?

Tip of First Finger!



3 ounces of baked or
grilled fish?

A Checkbook!



One cup cooked vegetables,
salad, or baked potato?

A Baseball!



Half cup fruit, beans, rice,
noodles, or ice cream?

Half of a Baseball!



One pancake or tortilla?

A CD or DVD!



Quarter cup of raisins?

An Egg!



Next Week: Reading Food Labels
& How to Make The Most of Them

Nutrition Facts		Nutrition Facts		Nutrition Facts	
Serving Size 1/2 cup (125g) Amount Per Serving Calories 100 Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g		Serving Size 1/2 cup (125g) Amount Per Serving Calories 100 Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g		Serving Size 1/2 cup (125g) Amount Per Serving Calories 100 Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g	
Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g		Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g		Total Fat 2g Sodium 100mg Total Carbohydrate 20g Protein 2g	

Thank you for
coming!
See you next week!

Lesson 2: Nutrition Labels


Emily Sperry
Kansas State University

Nutrition Facts Label

Nutrition Facts	
Serving Size 1/2 cup (55g) Servings Per Container About 8	
Amount Per Serving	
Calories 230	
Total Fat 10g	
Saturated Fat 1g	
Trans Fat 0g	
Cholesterol 0mg	
Sodium 100mg	
Total Carbohydrate 37g	
Dietary Fiber 4g	
Sugars 1g	
Protein 3g	
Vitamin A	
Vitamin C	
Calcium	
Iron	
% Daily Value*	
Total Fat	12%
Saturated Fat	2%
Trans Fat	0%
Cholesterol	0%
Sodium	2%
Total Carbohydrate	12%
Dietary Fiber	8%
Sugars	2%
Protein	6%

- Contains information about food, such as fat, sodium, fiber, and more
- Makes it easier to compare foods to choose the healthier option
- Food labels can be used as another tool to plan a healthy, balanced diet

Nutrition Facts Label



- Required by 1990 Nutrition Labeling and Education Act
- Recommended by the Food and Drug Administration (FDA)
- Most foods and drinks are required to have the standardized label

Breaking Down the Nutrition Label

Label Basics

Nutrition Facts	
Serving Size 1/2 cup (55g) Servings Per Container About 8	
Amount Per Serving	
Calories 230	
Total Fat 10g	
Saturated Fat 1g	
Trans Fat 0g	
Cholesterol 0mg	
Sodium 100mg	
Total Carbohydrate 37g	
Dietary Fiber 4g	
Sugars 1g	
Protein 3g	
Vitamin A	
Vitamin C	
Calcium	
Iron	
% Daily Value*	
Total Fat	12%
Saturated Fat	2%
Trans Fat	0%
Cholesterol	0%
Sodium	2%
Total Carbohydrate	12%
Dietary Fiber	8%
Sugars	2%
Protein	6%

- Serving size
- Servings per container
- Calories per serving
- Calories from Fat
- Total Fat
- Saturated Fat
- Trans Fat
- Cholesterol
- Sodium
- Potassium
- Total Carbohydrate
- Dietary Fiber
- Sugars
- Proteins
- Vitamins & Minerals
 - Vitamin A
 - Vitamin C
 - Calcium
 - Iron

Serving Size

Nutrition Facts	
Serving Size 2/3 cup (55g) Servings Per Container About 8	
The Nutrition Facts label includes information based on <u>ONE</u> serving, but many packages include more than one serving	
The top of the label includes the <u>serving size</u> and the number of <u>servings per container</u>	
When comparing products, make sure the serving sizes are the same	

Figure 2.8-2.12 Lesson 2 PowerPoint Slides

Amount Per Serving	
Calories 230	Calories from Fat 40

Calories

- Again, the calories represented on the label include the number of calories in one serving.
- If more than one serving is eaten, the calories must be adjusted.
- Fat-free ≠ calorie-free
- Lower fat items may contain the same amount of calories as full-fat versions

General Guide to Calories

- Low
 - 40 calories or less per serving
- Moderate
 - 100 calories per serving
- High
 - 400 calories per serving

	% Daily Value*
Total Fat 8g	12%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%

Fat

- As part of a balanced diet, saturated fat, trans fat, cholesterol, and sodium should be limited
- The American Heart Association recommends limiting saturated fat to 11 grams/day, sodium to 1500 mg, and a little *trans* fat as possible.
- Certain chronic diseases are tied to consuming too much of the above nutrients

Unsaturated Fats

- Even though it is not required by the FDA, some food labels include unsaturated fats
- This includes polyunsaturated and monounsaturated fats
- Consuming unsaturated fats instead of saturated or *trans* fats may help lower blood cholesterol
- Sources of unsaturated fats include fish, nuts, avocado, and liquid vegetable oils

Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	

Carbohydrates

- The carbohydrate section of the label includes two subsections, dietary fiber and sugars
- It is important to get the recommended amount of fiber daily
- Limit added sugars (sucrose, glucose, fructose, corn or maple syrup) which add calories but not other vitamins and minerals
 - *These can be found on the ingredients list*
- **Wholesome carbohydrates**
 - Look for whole wheat, brown rice, or whole oats first on the list

Protein 3g

Protein

- In the American diet, protein is usually plentiful
- Protein does not always come from the healthiest sources
- Make protein choices that are lean, low-fat, or fat-free

Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

Vitamins & Minerals

- Most Americans also do not get the recommended amounts of vitamins and minerals on a daily basis through diet alone
- The vitamins and minerals required to be on the label can help decrease certain ailments
- Calcium helps to reduce the risk of osteoporosis
- Iron & vitamin C

Nutrition Facts	
Serving Size 2/3 cup (56g) Servings Per Container About 8	
Amount Per Serving	
Calories 120	Calories from Fat 45
% Daily Value*	
Total Fat 1g	2%
Saturated Fat 1g	2%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 100mg	2%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	
Protein 3g	
Vitamin A 10%	
Vitamin C 8%	
Calcium 20%	
Iron 45%	

Percent Daily Value (%DV)

- The %DV is based on a 2,000 calorie diet
- If you consume less than 2,000 calories per day, your %DV will be higher than the one listed
- If you consume more than 2,000 calories per day, your %DV will be lower than the one listed
- Even if the %DV is not the exact amount for you, it is a good estimate to gauge where you are throughout the day

Quick Guide:
5% or less → LOW in that nutrient
20% or more → HIGH in nutrient

Ingredients List

INGREDIENTS
WHOLE GRAIN OAT, WHOLE GRAIN WHEAT, SUGAR AND/OR GOLDEN SYRUP, OAT AND HONEY CLUSTERS (ROLLED OATS, SUGAR, BROWN SUGAR, CORN SYRUP, OAT FLOUR, RICE FLOUR, HONEY, SALT, CALCIUM CARBONATE, CINNAMON, BAKING SODA, ARTIFICIAL FLAVOUR, MONOGLYCERIDES, BHT), ROLLED OATS, CORN SYRUP, GOLDEN SYRUP, SALT, WHEAT STARCH, GUM ACACIA, ANNATTO, TOCOPHEROLS, NATURAL AND ARTIFICIAL FLAVOUR, HIGH MONOUNSATURATED CANOLA OIL AND/OR RICE BRAN OIL, BHT, NATURAL ALMOND FLAVOUR, STEVIA LEAF EXTRACT, VITAMINS & MINERALS: NIACINAMIDE, CALCIUM PANTOTHENATE, PYRIDOXINE HYDROCHLORIDE (VITAMIN B6), FOLATE, IRON. CONTAINS ALMOND, WHEAT AND OAT INGREDIENTS.

- The ingredients in a food are required to be listed largest to smallest, based on the amounts by *weight*
- The list must include all ingredients, additives, spices, flavors, preservatives, and coloring agents

Interactive Session

We are going to guess which of these statements matches the labels on the sheets.

Very high source of cholesterol but a low source of sodium?

Large Egg!

Nutrition Facts	
Serving Size 1 egg (50g) Servings per Container 12	
Amount Per Serving	
Calories 120	Calories from Fat 45
% Daily Value*	
Total Fat 1g	2%
Saturated Fat 1g	2%
Cholesterol 100mg	20%
Sodium 10mg	0%
Potassium 10mg	0%
Total Carbohydrate 0g	0%
Protein 6g	12%

High source of dietary fiber?

Apple!

Nutrition Facts	
Serving Size 1 large apple (242g / 8.6 oz.)	
Amount Per Serving	
Calories 120	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 0mg	0%
Potassium 260mg	7%
Total Carbohydrate 34g	11%
Dietary Fiber 4g	8%
Sugars 25g	
Protein 1g	
Vitamin A 2%	
Vitamin C 8%	
Calcium 2%	
Iron 2%	

The fat in one serving makes up 25% of your Daily Value?

Nutrition Facts	
Serving Size: Skippy's Natural Peanut Butter, 2 Tbs (32g)	
Amount Per Serving	
Calories 190	Calories from Fat 140
	% Daily Value*
Total Fat 16g	25%
Saturated Fat 3.5g	10%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 150mg	6%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	8%
Sugars 3g	
Protein 7g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 4%



Peanut Butter!

This food label includes the optional amounts of unsaturated fats!

Nutrition Facts	
Serving Size: For One Serving (14 g)	
Amount Per Serving	
Calories 110	Calories from Fat 10
	% Daily Value*
Total Fat 2.5g	5%
Saturated Fat 0.5g	1%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 100mg	2%
Total Carbohydrate 1g	2%
Dietary Fiber 0.5g	1%
Sugars 0g	0%
Protein 1g	2%
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 0%



Tuna!

A one ounce serving contains 110 calories?

Nutrition Facts	
Serving Size 1 oz.	
Amount Per Serving	
Calories 110	Calories from Fat 10
	% Daily Value*
Total Fat 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 200mg	10%
Total Carbohydrate 23g	8%
Dietary Fiber 1g	4%
Sugars 3g	
Protein 1g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 0%
Thiamin 0%	Riboflavin 0%
Niacin 0%	Phosphorus 0%



Pretzels!

One serving includes *nearly* 10% of the Daily Value for carbohydrates?

Nutrition Facts	
Serving Size 1 muffin (28g)	
Amount Per Serving	
Calories 110	Calories from Fat 10
	% Daily Value*
Total Fat 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 200mg	10%
Total Carbohydrate 23g	8%
Dietary Fiber 1g	4%
Sugars 3g	
Protein 1g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 0%
Thiamin 0%	Riboflavin 0%
Niacin 0%	Phosphorus 0%



English Muffin!

This is a good source of calcium?

Nutrition Facts	
Serving Size 1 piece (24g)	
Amount Per Serving	
Calories 50	Calories from Fat 20
	% Daily Value*
Total Fat 2.5g	5%
Saturated Fat 1.5g	3%
Trans Fat 0g	
Cholesterol 10mg	2%
Sodium 200mg	10%
Total Carbohydrate 1g	2%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 1g	2%
Vitamin A 0%	Vitamin C 0%
Calcium 20%	Iron 0%



String Cheese!

A serving of 5 spears provides *nearly* 10% of the Daily Value of fiber?

Nutrition Facts	
Serving Size 5 spears (24g)	
Amount Per Serving	
Calories 20	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 4g	8%
Dietary Fiber 2g	8%
Sugars 0g	
Protein 1g	2%
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 0%



Asparagus!

Lesson 3: A Focus on Nutrients

Emily Sperry
Kansas State University

Nutrients

Five (or 6) main categories:

1. Proteins
2. Carbohydrates
3. Fats
4. Vitamins & Minerals
5. Water



Proteins

- "Body's building blocks"
- Build and repair tissue
- Help fight infection
- Used for extra energy

Good sources:

- Seafood
- Lean meat
- Poultry
- Eggs



- Beans and peas
- Soy products
- Unsalted nuts and seeds



Carbohydrates

- Main source of energy for the body

- Two types

- **Simple:** fruits, vegetables, milk products, sugar, honey, syrup, and sugar used in candy and soda
- **Complex:** breads, cereals, pasta, rice, beans and peas, and starchy vegetables (potatoes, green peas, and corn)
- Fiber (complex carbohydrate)
 - In foods that come from plants → fruits, vegetables, nuts, seeds, beans and whole grains



Fats

- Give you energy
- Help to promote feeling full
- Categories of fats:
 - Monounsaturated
 - Polyunsaturated
 - Saturated
 - *Trans* fats (*trans* fatty acids)



Unsaturated Fats

- **Monounsaturated:**

- Canola oil, olive oil, peanut oil, safflower oil
- Avocados, peanut butter, some nuts and seed

- **Polyunsaturated:**


- Corn oil, soybean oil, flaxseed oil, sunflower oil
- Fatty fish, walnuts, some seeds (sunflower seeds)
- Liquid at room temperature







Saturated Fats

- **Saturated:**
 - Palm oil, coconut oil
 - Red meat, milk, butter, regular cheeses, pizza, grain-based and dairy desserts
- **Trans fats:** (*trans* fatty acids)
 - Biggest sources are store-bought baked goods and fast food
 - Stick margarine, vegetable shortening
 - Solid at room temperature






Vitamins & Minerals


- There are multiple vitamins that the body needs to do many tasks:
 - Help body to resist infection
 - Keep nerves healthy
 - Help blood to clot properly
 - Helps the body pull enough energy from food
- Following the *Dietary Guidelines* will ensure that you are able to get the majority of vitamin needs from food


Vitamins

- Important vitamins:
 - B Vitamins
 - Thiamine
 - Riboflavin
 - Niacin
 - Pantothenic acid
 - Biotin
 - Folate
 - B₆
 - B₁₂
 - Vitamin A
 - Vitamin D
 - Vitamin E
 - Vitamin K
 - Vitamin C



Minerals



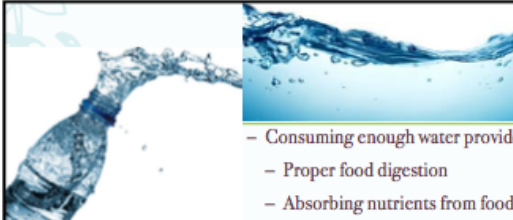
- Important Minerals:
 - Iodine
 - Fluoride
 - Calcium
 - Magnesium
 - Potassium
- Needed in smaller amounts: Iodine, Fluoride
- Needed in larger amounts: Calcium, Magnesium, Potassium

Important Vitamins & Minerals

Vitamin D Fatty fish, fish liver oils, fortified milk, fortified cereals	Folate Dark-green leafy vegetables (spinach, bean and peas), oranges and orange juice, fortified flour and cereals
Vitamin B₆ Fortified cereals, whole grains, liver, fortified soy-based meat substitutes	Calcium Milk and milk products, some tofu, dark-green leafy vegetables, soybeans, fortified foods
Vitamin B₁₂ Meat, fish, poultry, milk, fortified cereals	


Important Vitamins & Minerals: Daily Values

	Vitamin D	Vitamin B ₆	Vitamin B ₁₂	Folate	Calcium*
Men					
Age 50-70	600-4,000 IU	1.7 mg	2.4 mcg	400 mcg	1,000 mg
Age 71+	800-4,000 IU	1.7 mg	2.4 mcg	400 mcg	1,200 mg
Women					
Age 50-70	600-4,000 IU	1.5 mg	2.4 mcg	400 mcg	1,200 mg
Age 71+	800-4,000 IU	1.5 mg	2.4 mcg	400 mcg	1,200 mg



Water

- Consuming enough water provides many benefits:
 - Proper food digestion
 - Absorbing nutrients from food
 - Helps to get rid of waste
- Try to drink water throughout the day
- Rough estimate for intake needs:
 - Take body weight and divide in half
 - The number is the amount of water you need in *ounces*



Interactive Session

We are going to take a short quiz over today's content!

True or False?

You want to eat the recommended amounts of vitamins and minerals daily.


True!



What does the body use as its main source of energy?

- Fats
- Carbohydrates
- Proteins

b. Carbohydrates



True or False?

You want to eat the recommended amounts of vitamins and minerals daily.

True!



Next Week: A Healthy Lifestyle






CALORIE DENSITY

OIL	CHEESE	MEAT	POTATOES, RICE, BEANS	FRUITS & VEGGIES


and why whole plant-based foods will help keep you lean and satisfied.

Rockefeller University

Lesson 4: Healthy Living



Emily Sperry
Kansas State University

Metabolism






- How your body gets energy from food
- This slows with age
- Because metabolism slows, your body uses less energy
- You need less food to make the energy the body needs

"Calories In, Calories Out"


- The more calories you eat, the more active you need to be
- What happens if you eat more than what your body needs?
- What happens if you eat less than what your body needs?
- What should you do if you need the same amount of nutrients, but you also need less calories because your body needs less food?

Nutrient-Dense vs. Calorie Dense

- Nutrient dense: foods that give you tons of nutrients without a lot of calories
- Calorie dense: foods that are high in calories for the amount of food
- They may or may not have helpful nutrients
- "Empty calories": high calorie foods with little nutritional value

This or That?

4 oz. hamburger patty, extra lean ground beef	4 oz. hamburger patty, regular ground beef
	
167 calories	235 calories

This or That?

Large apple, 8 oz.	Slice of apple pie, 1/8 th of 9" pie
	
110 calories	356 calories

Figure 2.16-2.18 Lesson 4 PowerPoint Slides

This or That?

Two slices of 100% whole wheat bread (1 oz. each)



138 calories

Medium croissant (2 oz.)



231 calories

This or That?

Medium baked potato with 2 tablespoons low-fat sour cream



203 calories

Medium order of fast food French fries



457 calories

This or That?

3 oz. skinless chicken breast, roasted



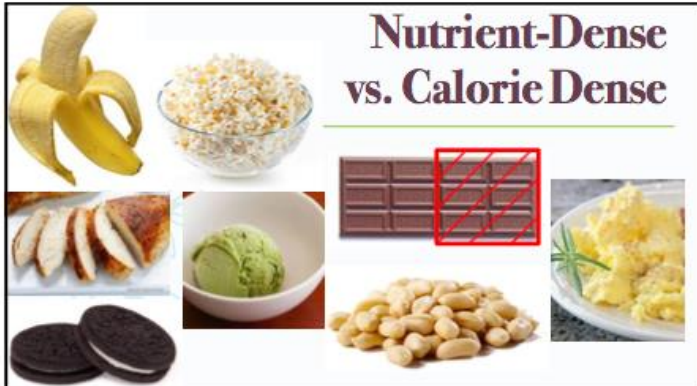
141 calories

Chicken wings with skin and batter, fried

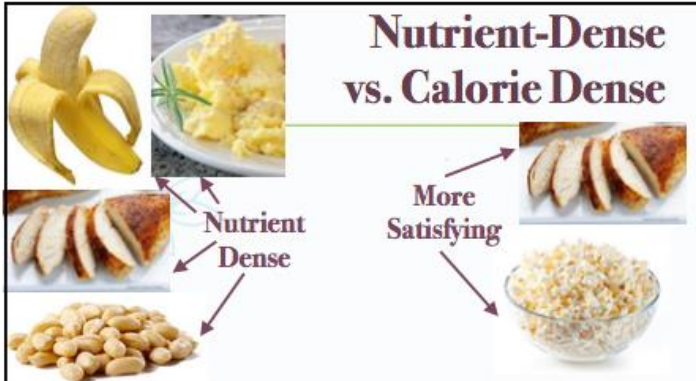


479 calories

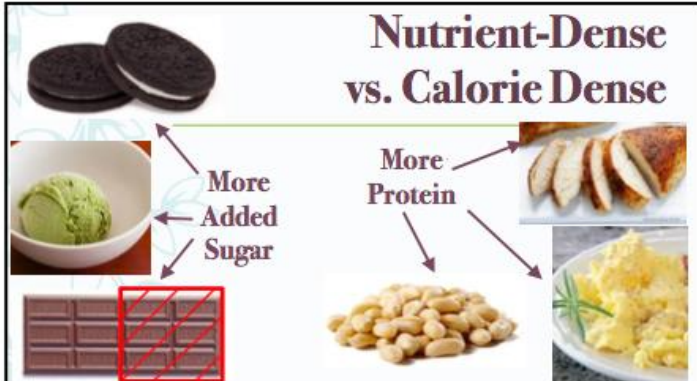
Nutrient-Dense vs. Calorie Dense



Nutrient-Dense vs. Calorie Dense



Nutrient-Dense vs. Calorie Dense

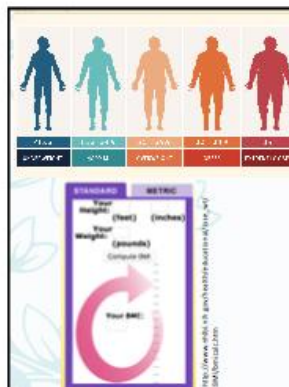




Tracking



- Writing down what you eat is a great way to track
- There are many different ways to track what you eat
 - Notebook or food journal
 - Phone application (MyFitnessPal)
 - Websites (supertracker.usda.gov)
 - Printable forms
- If you eat the same things consistently, you may track in the beginning to get a "feel" for what you eat



BMI (Body Mass Index)

- Number based on height and weight that can be compared to a chart
- BMI chart has four categories:
 - Underweight
 - Normal or healthy weight
 - Overweight
 - Obese
 - Morbidly obese

	Normal										Overweight										Obese										Extreme Obesity									
BMI	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54			
Height (inches)	Body Weight (pounds)																																							
58	81	86	90	95	100	105	110	115	119	124	129	134	139	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	217	222	227	232	237	242	247	252	257	262		
59	84	89	93	98	103	108	113	118	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	217	222	227	232	237	242	247	252	257	262			
60	87	92	97	102	107	112	117	122	127	132	137	142	147	152	157	162	167	172	177	182	187	192	197	202	207	212	217	222	227	232	237	242	247	252	257	262	267	272		
61	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270			
62	93	98	103	108	113	118	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	218	223	228	233	238	243	248	253	258	263	268	273			
63	96	101	106	111	116	121	126	131	136	141	146	151	156	161	166	171	176	181	186	191	196	201	206	211	216	221	226	231	236	241	246	251	256	261	266	271	276			
64	99	104	109	114	119	124	129	134	139	144	149	154	159	164	169	174	179	184	189	194	199	204	209	214	219	224	229	234	239	244	249	254	259	264	269	274	279			
65	102	107	112	117	122	127	132	137	142	147	152	157	162	167	172	177	182	187	192	197	202	207	212	217	222	227	232	237	242	247	252	257	262	267	272	277	282			
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68	111	116	121	126	131	136	141	146	151	156	161	166	171	176	181	186	191	196	201	206	211	216	221	226	231	236	241	246	251	256	261	266	271	276	281	286				
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71	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295				
72	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	218	223	228	233	238	243	248	253	258	263	268	273	278	283	288	293	298				
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76	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310				
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78	141	146	151	156	161	166	171	176	181	186	191	196	201	206	211	216	221	226	231	236	241	246	251	256	261	266	271	276	281	286	291	296	301	306	311	316				
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80	147	152	157	162	167	172	177	182	187	192	197	202	207	212	217	222	227	232	237	242	247	252	257	262	267	272	277	282	287	292	297	302	307	312	317	322				
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82	153	158	163	168	173	178	183	188	193	198	203	208	213	218	223	228	233	238	243	248	253	258	263	268	273	278	283	288	293	298	303	308	313	318	323	328				
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93	186	191	196	201	206	211	216	221	226	231	236	241	246	251	256	261	266	271	276	281	286	291	296	301	306															

Lesson 5: Shopping Tips

Emily Sperry
Kansas State University

Plan



- Plan meals and snacks for the week.
- Include meals that will “stretch”
- Make a grocery list.
- Check for sales and coupons in the local paper or online.
- Ask about a loyalty card at your grocery store.

Purchase




- Buy groceries when you are not hungry & when you are not too rushed.
- Stick to the grocery list.
- Buy store brands (if cheaper).
- Find and compare unit prices listed on shelves to get the best price.

Purchase




- Bulk or family packs
- Buy canned or frozen fruits & vegetables (with no added salt)
- Pre-cut fruits and vegetables and individual serving sizes

Prepare



- Some meal items can be prepared in advance.
- Double or triple up on recipes
- Try a few meatless meals or no-cook meals, like salads.
- Incorporate leftovers into a subsequent meal.

Staples



- It is important to have staples and foods that you eat on a regular basis on hand.
- If you are unable to get to the store for whatever reason, you can make meals from the food you have on hand.
- Cereal
- Flour
- Sugar
- Cans of low-sodium soup, fruit, and tuna
- Frozen fruits and vegetables
- 100% fruit juice
- Pasta
- Low-sodium pasta sauce

Figure 2.19-2.20 Lesson 5 PowerPoint Slides



Online Resources




- o Iowa State Extension and Outreach- Spend Smart, Eat Smart
 - o Plan, Shop, Eat, Recipes
- o USDA- Choose MyPlate
- o SNAP-Ed Meal Planning
- o Academy of Nutrition and Dietetics- EatRight.org



Local Resources




- o HyVee
 - o Home delivery or store pickup
 - o Prices vary
- o Bountiful Baskets Food Co-Op
- o Manhattan Friendship Meals
- o Downtown Farmer's Market
- o Flint Hills Breadbasket



Next Week: Food Safety and Wrap-Up







FOOD SAFETY



FOOD PRESERVATION




KEEP YOUR FAMILY SAFER FROM FOOD POISONING
Check your steps at FoodSafety.gov

Thank you for coming!
See you next week!

Lesson 6: Food Safety and Closing

Emily Sperry
Kansas State University

Why?




- Food related illnesses can be life-threatening
- As you age, it is more difficult to fight off infection
- Health problems can also make it harder to fight infection, like diabetes and kidney disease
- This makes it easier to get sick from eating unsafe foods

Foods to Avoid (From the USDA)



- Raw or undercooked fish, shellfish, meat and poultry
- Refrigerated smoked fish (lox)
- Hot dogs, deli meat, and luncheon meats
- Raw or unpasteurized milk and milk products

Foods to Avoid (From the USDA)




- Soft cheeses made from unpasteurized milk
- Raw or undercooked eggs or egg products
- Raw sprouts
- Unwashed fresh vegetables, including lettuce
- Unpasteurized juices

Taste and Smell



- Senses of taste and smell may change
- Medications can also change those senses
- Need to be extra careful about handling food
- If something does not look, smell, or taste right, throw it out!

Storage



- Make sure to follow the label on any products
- Keep any canned or packaged items in cool, dry locations
- Make sure to check the dates on food before using them
- Use refrigerated leftovers within 3 to 4 days

Figure 2.21-2.23 Lesson 6 PowerPoint Slides

Safety When Cooking



KEEP YOUR FAMILY SAFER FROM FOOD POISONING
Check your steps at FoodSafety.gov

- Clean
- Separate
- Cook
- Chill

Clean



- Wash hands and counter with hot, soapy water before preparing food
- Clean the lids of cans before opening
- Rinse fruits and vegetables under water, but without soap
- Do not rinse raw meat and poultry before cooking
- Keep the refrigerator clean
 - Use hot, soapy water to clean bins if there is a spill

Separate



- Keep raw meat, poultry, seafood, and eggs away from foods that won't be cooked
- This begins in the grocery cart
 - Put raw produce in one part of the cart and the raw meat in another part
 - Use the plastic bags the stores provide for raw meats
- At the checkout, make sure they are not mixed in bags
- Keep raw meat and produce separate in the refrigerator
- Keep raw meats lower in the fridge to reduce the chance of the juices dripping onto other foods

Separate



- When cooking, keep foods that are ready-to-eat away from foods that are to be cooked
- Use a different knife and cutting board for produce and raw meats
 - You can also cut up all the produce before the raw meats
- After you are done with food prep, wash the knife and cutting board in hot, soapy water
- Also wash any plates that raw meats may have been on before using the plate for cooked food (like when grilling)

Cook



- Use a food thermometer
 - Insert in the thickest part of the food you are cooking
- Make sure sauces, marinades, soups, and gravy come to a boil when heating


USDA-Recommended Safe Minimum Internal Temperatures

All Meats and Seafood	All Ground Meats	Egg Dishes	All Poultry	Hot Dogs and Lunch Meats
145° F (with 3-min rest)	160° F	160° F	165° F	165° F

Chill




- Set your refrigerator to be at 40° F or below
- The freezer should be set at 0° F or below
- Make sure groceries get put away within two hours of purchase or cooking
- In the summer (outside temp of 90° F) refrigerate within one hour
- Leftovers should be placed in covered shallow dishes
- Use within 3 to 4 days



Eating Out

- Do you think about food safety when you eat out?
- Make sure the place is clean
- Don't be afraid to ask the waiter or waitress how menu items are prepared
- Consider avoiding buffets, especially during slow times of the day
- If you take leftovers home, make sure they get into the refrigerator within 2 hours



Post-Evaluation

- Short questionnaire based on current behaviors
- No right or wrong answers

Thank you for coming!

Chapter 3 - Conclusion

Overall, I feel like completing the field experience opened my eyes to another side of public health. It is one thing to complete course work and to learn from textbooks, but being able to do something, such as creating and presenting a program to an underserved population takes it to another level. I do feel that this program was a success.

By using statistical analysis on the answers from the pre- and post-assessments, I feel that this group of participants gained fundamental knowledge they can implement in everyday life. There was a statistical difference in the pre-assessment averages and the post-assessment averages, indicating a larger amount of agreement among participants to the tracked behaviors. Each question's average agreement to the behavior increased, telling me that more people were familiar with the ideas presented in the program.

The program has a great base, but I feel that improvements could be made to it. The next time I present this, I would include more information on how to implement changes. This would not only lay out how to make changes, but it could also give participants greater amounts of self-efficacy that can make changes and continue healthy behaviors. The assessment did not directly say if the participants were actively making changes, which is something that I would change for next time. If possible, I would change the scale on the pre- and post-assessment to rate where they are in the stages of change. This would clearly determine where participants are in the beginning of the program compared to where they end up at the end of the program.

Even though six weeks is not a long time, I was able to build relationships with the participants of the program. I was excited to see them each week. There were a couple of weeks that we had to wait to get into the room that was set up to present in, and I was able to have meaningful conversations with the group that was focused more on their lives.

I really like to help people and get to know them on a personal level. I am happy that in a career using my Master's in Public Health to better the lives of others, and this experience taught me that I can still make a differences in an impactful way on a smaller level. I also hope that this program can be used in many other settings to help others.

I have used other programs in the past for research, but I did not know how much work went into them until I went through this process. From start to finish, there are many steps and many people involved just to get a program in front of people. If it were not for Ms. Barnard helping me with ideas and who to get ahold of to make plans to

present, I am not sure if it would have gotten finished. I have a lot of gratitude for public health professional now because of the numerous steps it takes to get information out to the public.

For future presentation of this program, I would like to to a number of things. First, I would like to research what the best colors for older adults are. The handouts provided used quite a few colors, and there are some colors that are easier to read than others. Secondly, I would like to review the literacy levels of the handouts to make them as easy to read to be able to reach and appeal to a larger audience. I would also like to collect demographic data for the group. This would allow me to understand if the program works for all groups (age, socioeconomic status, mental status) or if the presentation would need to be adjusted based on the composition of the group.

Going through this process also allowed me to apply what I had learned in the coursework to real-life situations. From analyzing what to include in my program, learning what the proper amount of information to present in each session, and using theories, to help promote change, to present the information, I would not have been able to do this without the good foundation from the core competency courses.

I am very thankful that I have had the help and support of everyone over the past three year. I would like to thank those in the Department of Food, Nutrition, Dietetics, and Health and the Master of Public Health office, my major professor, Dr. Ric Rosenkranz, my preceptor/mentor, Virginia (Ginny) Barnard, the participants in my program, and anyone that has helped me get to this point. I feel that I am completing this program with the knowledge and experience to find myself in a great place in whatever position I find myself.

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Appendix

The appendix includes all of the handouts that were used before and during the program. The first page is the marketing flyer that was used to advertise my program. They were distributed at the Riley County Seniors' Service Center and the Riley County Extension Office. The next handouts are copies of what was given to program participants at the end of each session. They summarize what was covered during that week. I tried to make them a quick, go-to paper for information for serving sizes, common nutrient claims on packaging, vitamin and mineral needs, overall healthy living, shopping tips and resources, and food safety tips (proper cooking temperatures and storage). Finally, I have attached a copy of the pre- and post-evaluation form.

Marketing Flyer

Do you have
questions about
nutrition and how
it affects you?



What's on *My* Plate?

a program to help *you* get the most out of your food

What: a 6-week course about nutrition

Where: Riley County Seniors' Services Center

When: Tuesdays at 9:30am starting April 5

Provided by Riley County K-State Research & Extension
110 Courthouse Plaza, Rm B220
Manhattan, KS 66502
785-537-6350

K-State Research & Extension is an equal opportunity provider and employer.

Lesson 1: Nutrition Basics

Daily Calorie Needs		
Men		
Not Physically Active	Moderately Active	Active
2,000-2,200 calories	2,200-2,400 calories	2,400-2,800 calories
Women		
Not Physically Active	Moderately Active	Active
1,600 calories	1,800 calories	2,000 calories

What is a *calorie*?

- the way to measure the energy that a food item contains
- daily calorie needs are based on a variety of things
 - Age
 - Gender
 - Physical Activity

What are the different *activity levels*?

- Not Active: no extra day-to-day activities outside of normal movement
- Moderately Active: walking, dancing, water aerobics
- Active: jogging, singles tennis, swimming laps

Daily Calorie Count Examples for the Daily Calorie Needs

	1,600 Calories	2,000 Calories	2,600 Calories
Grains	5 ounces	6 ounces	9 ounces
Vegetables	2 cups	2 1/2 cups	3 1/2 cups
Fruits	1 1/2 cups	2 cups	2 cups
Protein Foods	5 ounces	5 1/2 ounces	6 1/2 ounces
<i>Seafood</i>	8 ounces/week	8 ounces/week	10 ounces/week
<i>Meat, Poultry, Eggs</i>	24 ounces/week	26 ounces/week	31 ounces/week
<i>Nuts, Seeds, Soy</i>	4 ounces/week	4 ounces/week	5 ounces/week
Dairy Products	3 cups	3 cups	3 cups
Oils	22 grams	27 grams	34 grams
Solid Fats & Added Sugars	121 calories	258 calories	362 calories

Grains: (one ounce equivalent)

- Slice of bread
- Cup flaked cereal
- 1/2 cup cooked rice, pasta, or cereal
- 6" corn or flour tortilla
- Small (2 1/2") muffin
- Half an English muffin

★ Remember to get half of calories from **whole** grains!

Vegetables: (half cup equivalent)

- Large stalk of celery
- Six baby carrots
- Five broccoli florets
- Small (6") ear of corn
- 1/2 cup cooked green beans
- Half of a red pepper

★ Try to eat a variety of colors to get all of the different nutrients!

Fruits: (half cup equivalent)

- Four strawberries
- Four ounces of 100% fruit juice
- 1/4 cup dried fruit
- Half an 8" banana
- Half of a medium grapefruit
- Sixteen grapes

★ Apples and pears can provide extra fiber in the skins (so make sure to eat them)!

Protein Foods: (one ounce equivalent)

- 12 almonds
- One large egg
- 1/4 cup cooked beans
- Tablespoon peanut butter
- 1/4 cup tofu
- 2 tablespoons hummus

★ Try to eat seafood at least twice a week!

Dairy Products: (equivalent cup of milk)

- 1 1/2 ounces hard cheese
- 1/3 cup shredded cheese
- 1 cup soy beverage
- 8 ounces yogurt
- 2 cups cottage cheese
- 1 cup pudding made with milk

★ Try to pick low-fat or fat-free choices!

Oils:

- 1/2 medium avocado=15 grams oil
- 4 large olives=2.5 grams oil
- 1 tablespoon peanut butter=10 grams oil
- 1 ounce dry nuts=15 grams oil
- 1 ounce sunflower seeds=15 grams oil
- 1 tablespoon mayo=12 grams oil

★ Use oils instead of solid fats (lard or butter) when cooking!

Measurements Using Common Items

Item	Measurement
Two Tablespoons	A Golf Ball
Three Ounces of Meat	A Deck of Cards or Palm of Hand
1-1 1/2 Ounces of Cheese	4 Dice or Length of First Finger
One Teaspoon	Tip of First Finger
3 Ounces of Baked/Grilled Fish	A Checkbook
Cup of Veggies, Salad, or Starch	A Baseball
Half Cup of Fruit, Veggies, or Starch	Half a Baseball
One Pancake or Tortilla	A CD or DVD
Quarter Cup of Dried Fruit	A Large Egg

Lesson 2: Nutrition Labels

Food nutrition labels provide a lot of important information in a quick-to-read format.

Nutrition labels include the following information:

- Serving size
- Servings per container
- Calories per serving
- Calories from Fat
- Total Fat
- Saturated Fat
- Trans Fat
- Cholesterol
- Sodium
- Potassium
- Total Carbohydrate
- Dietary Fiber
- Sugars
- Proteins
- Various Vitamins

The first thing to look at is the serving size of the food item, as well as how many servings are in each package.

Second, the label lists the calories **per serving** and calories from fat.

★Remember, if you consume the entire package and it has multiple servings, you have to multiply the rest of the label by the number of servings you consume.

These nutrients should be limited, especially saturated fat, trans fat, cholesterol, and sodium.

Get enough of these nutrients, vitamins, and minerals.

Limit added sugar in foods and drinks.

The **% Daily Value** is based on a 2,000 calorie diet. If the recommended calories for you are lower than 2,000, these values will be larger. If the recommended calorie intake for you is higher than 2,000 calories, these values will be smaller.

Nutrition Facts

Serving Size 2/3 cup (55g)

Servings Per Container About 8

Amount Per Serving

Calories 230 Calories from Fat 72

	% Daily Value*
Total Fat 8g	12%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Common Nutrient Claims and Descriptions	
Calorie-free	Less than 5 calories per serving
Cholesterol-free	Less than 2 mg cholesterol and 2 g or less saturated fat per serving
Enriched or fortified	Has been nutritionally altered so that one serving provides at least 10% more of the Daily Value of a nutrient than the comparison food. Also used: "added", "extra" or "plus"
Extra lean	Less than 5 g fat, 2 g saturated fat, and 95 mg cholesterol per serving and per 100 grams
Fat free	Less than 0.5 g of fat per serving
Free	Also used: "without", "no", "zero" or "dietary insignificant source"
Good source	One serving provides 10-19% of the Daily Value for a nutrient
High	One serving provides at least 20% or more of the Daily Value for a particular nutrient. Also used: "rich in" or "excellent source"
High fiber	Contains 20% or more of the Daily Value for fiber (at least 5 g) per serving.
Lean	Less than 10 g fat, 4 g saturated fat, and 95 mg cholesterol per serving.
Light	1.) At least one-third fewer calories per serving than a comparison food, or 2.) contains no more than half per serving of a comparison food
Low	Also used: "little", "few", or "low source of"
Low calorie	40 calories or less per serving
Low cholesterol	20 mg or less cholesterol and 2 g or less saturated fat per serving for snacks or side dishes, or 120 calories or less per 100 g for a main dish
Low fat	3 g or less per serving
Low sodium	140 mg or less per serving
"Percent" fat free	A claim made on a "low fat" or "fat free" product which accurately reflects the amount of fat present in 100 g of food; a food with 3 g of fat per 100 g would be "97% fat free"
Reduced	A nutritionally altered product which must contain 25% less of a nutrient or of calories than the regular or reference product. "Less," "fewer," or "modified" can also be used
Salt or sodium free	Less than 5 mg per serving
Sugar free	Less than 0.5 g of sugars per serving
Very low sodium	Less than 35 mg or less sodium per serving

Lesson 3: A Focus on Nutrients

★★★★★ Basics	<u>Protein</u> “Body’s building blocks” <ul style="list-style-type: none"> • Build and repair tissue • Help fight infection • Used for extra energy *Meatless Mondays	<u>Carbohydrates</u> Main source of energy for the body <ul style="list-style-type: none"> • <u>Simple</u>: body can break it down for energy easy (glucose, fructose, sucrose) • <u>Complex</u>: takes the body more work to break down, if it can at all (fiber)
	<u>Fats</u> <ul style="list-style-type: none"> ★ Gives you energy ★ Help to promote feeling full • <u>Monounsaturated</u> • <u>Polyunsaturated</u> • <u>Saturated</u> • <u>Trans fatty acids</u> 	<u>Vitamins & Minerals</u> <ul style="list-style-type: none"> • Help body to resist infection • Keep nerves healthy • Help blood to clot properly • Helps the body to pull enough energy from food











<u>Protein</u> Seafood Lean Meat Poultry Eggs Soy Products Beans & Peas Unsalted Nuts & Seeds	<u>Carbohydrates</u> <u>Simple</u> : fruits, vegetables, milk products, sugar, honey, syrup <u>Complex</u> : breads, cereals, pasta, rice, beans & peas, starchy vegetables	★★★★★ Sources
<u>Monounsaturated Fats</u> <u>Oils</u> : Canola, olive, peanut, safflower <u>Foods</u> : Avocados, peanut butter, some nuts and seeds	<u>Polyunsaturated Fats:</u> <u>Oils</u> : Corn, soybean, flaxseed, sunflower <u>Foods</u> : Fatty fish, walnuts, some seeds (sunflower seeds)	
<u>Saturated Fats</u> <u>Oils</u> : Palm, coconut <u>Foods</u> : Red meats, milk, butter, regular cheeses, pizza, grain-based and dairy desserts	<u>Trans Fats (trans fatty acids):</u> Biggest sources are store-bought baked goods and fast food <u>Foods</u> : Stick margarine, vegetable shortening ★LIMIT AS MUCH AS POSSIBLE★	

Vitamins & Minerals

Following the *Dietary Guidelines* will ensure that you are able to get the majority of vitamin needs from food

<u>Vitamin D</u> <ul style="list-style-type: none"> • Fatty fish • Fish liver oils • Fortified milk • Fortified cereals 	<u>Vitamin B₆</u> <ul style="list-style-type: none"> • Fortified cereals • Whole grains • Liver • Fortified soy-based meat substitute 	<u>Vitamin B₁₂</u> <ul style="list-style-type: none"> • Meat • Fish • Poultry • Milk • Fortified cereals 	<u>Folate</u> <ul style="list-style-type: none"> • Dark-green leafy veggies • Oranges & orange juice • Fortified flour & cereals 	<u>Calcium</u> <ul style="list-style-type: none"> • Milk & milk products • Tofu • Dark-green leafy veggies • Soybeans • Fortified foods
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Daily Vitamin & Mineral Needs

	Vitamin D	Vitamin B ₆	Vitamin B ₁₂	Folate	Calcium
Men					
Age 50-70	600-4,000 IU	1.7 mg	2.4 mcg	400 mcg	1,000 mg
Age 71+	800-4,000 IU	1.7 mg	2.4 mcg	400 mcg	1,200 mg
Women					
Age 50-70	600-4,000 IU	1.5 mg	2.4 mcg	400 mcg	1,200 mg
Age 71+	800-4,000 IU	1.5 mg	2.4 mcg	400 mcg	1,200 mg

Water

Benefits of water:

- Proper food digestion
- Absorbing nutrients from food
- Helps to get rid of waste

Rough estimate for intake needs:

- Take body weight and divide in half
- The number that you get is the amount to drink each day in ounces

Lesson 4: Healthy Living

Metabolism

- How your body gets energy from food
- This slows with age
- You need less food to get the energy your body needs

“Calories In, Calories Out”

- The more calories you eat, the more active you need to be
- If you eat more than your body needs, you gain weight.
- If you eat less than what your body needs, you lose weight.
- If you need nutrients, but you also need less calories, you need to eat more **nutrient dense** foods.

Nutrient Dense

Foods that give you tons of nutrients without a lot of calories

Examples: high-quality proteins (chicken, turkey, fish), tomatoes, cabbage, low-fat or fat-free dairy, dark green leafy vegetables, berries & stone fruit

Calorie Dense

Foods that high in calories for the amount of food

*****These may or may not have helpful nutrients*****

Examples: regular dairy products, non-lean meats, vegetable-based oils

Empty Calories

High calorie foods with little nutritional value

Examples: potato chips, sugar-sweetened drinks, candy, baked goods, and alcohol

Water

Benefits of water:

- Proper food digestion
- Absorbing nutrients from food
- Helps to get rid of waste

Rough estimate for intake needs:

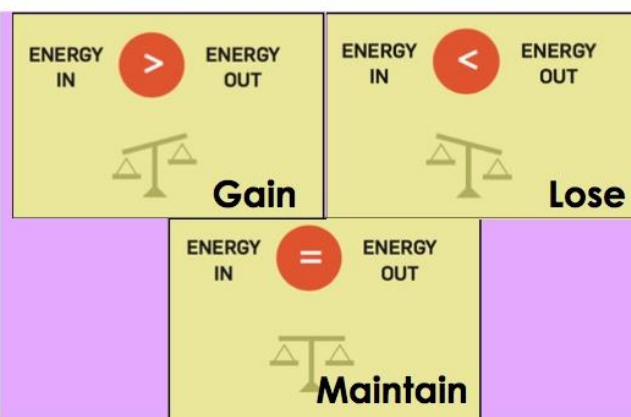
- Take body weight and divide in half
- The number that you get is the amount to drink each day in ounces

Tracking

- Writing down what you eat is a great way to track
- There are many different ways to track what you eat
 - Notebook or food journal
 - Phone application (MyFitnessPal)
 - Websites (supertracker.usda.gov)
 - Printable forms

Balancing Calories

- It is important to balance calories from eating and drinking with physical activity.
- Track to know!
 - One way to know that you are active enough is to track food intake for a few days and see how much you eat and drink



WEIGHT lbs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
kg	45.5	47.7	50.0	52.3	54.5	56.8	59.1	61.4	63.6	65.9	68.2	70.5	72.7	75.0	77.3	79.5	81.8	84.1	86.4	88.6	90.9	93.2	95.5	97.7
HEIGHT In/cm	Underweight				Healthy				Overweight				Obese				Extremely Obese							
5'0"	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1"	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
5'2"	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39		
5'3"	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
5'4"	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37			
5'5"	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
5'6"	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
5'7"	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
5'8"	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
5'9"	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
5'10"	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
5'11"	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
6'0"	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
6'1"	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
6'2"	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
6'3"	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
6'4"	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			

https://www.nursesstore.com/blog/calculating-a-bmi-score#_Vx8BZKMrJo4

Remember to visit the Go4Life website to see great resources for physical activity and tracking tools!
(www.nia.nih.gov/Go4Life)

Lesson 5: Shopping Tips

1. Plan

- Plan meals and snacks for the week.
- Include meals that will “stretch”
- Make a grocery list.
- Check for sales and coupons in the local paper or online.
- Ask about a loyalty card at your grocery store.

3. Prepare

- Some meal items can be prepared in advance.
 - Meal prepping can be useful to plan menu for the week and helps to know if any groceries are needed throughout the week. This allows for quick meals when you may not feel like preparing something & can cut down on fast food meals.
- Double or triple up on recipes
 - Freeze meal-sized containers of soups and casseroles or divide into individual portions.
- Try a few meatless meals or no-cook meals, like salads.
 - Meatless Mondays
- Incorporate leftovers into a subsequent meal.

2. Purchase

- Buy groceries when you are not hungry & when you are not too rushed.
- Stick to the grocery list.
- Buy store brands (if cheaper).
- Find and compare unit prices listed on shelves to get the best price.
- Bulk or family packs are often cheaper per unit and can be broken up and frozen to use later
- Buy canned or frozen fruits & vegetables (with no added salt) to get longer shelf lives without losing nutritional value
- Pre-cut fruits and vegetables and individual serving sizes can be convenient, but often cost more



Staples

- It is important to have staples and foods that you eat on a regular basis on hand.
 - If you are unable to get to the store for whatever reason, you can make meals from the food you have on hand.
- Cereal
 - Flour
 - Sugar
 - Cans of low-sodium soup, fruit, and tuna
 - Frozen fruits and vegetables
 - 100% fruit juice
 - Pasta
 - Low-sodium pasta sauce

Online Resources

- **Iowa State Extension and Outreach- Spend Smart, Eat Smart**
 - Plan, Shop, Eat, Recipes
 - * <http://www.extension.iastate.edu/foodsavings/>
- **USDA- Choose MyPlate**
 - * <http://www.choosemyplate.gov/budget>
- **SNAP-Ed Meal Planning**
 - * <https://snaped.fns.usda.gov/resource-library/handouts-and-web-sites/meal-planning-shopping-and-budgeting>
- **Academy of Nutrition and Dietetics- EatRight.org**
 - * <http://www.eatright.org/resources/food/planning-and-prep/eat-right-on-a-budget>

Local Resources

- **HyVee Aisles Online**
 - Home delivery—\$4.95 for home delivery or free with orders over \$100
 - Store pickup—\$2.95
 - * <https://www.hy-vee.com/grocery/>
- **Bountiful Baskets Food Co-Op**
 - * <http://www.bountifulbaskets.org/>
- **Manhattan Friendship Meals**
 - Senior Service Center
 - * 785-587-2462
- **Downtown Farmer's Market**
 - Held on three different days and in different locations
 - Accepts EBT cards and provides "Market Match" where community members can get \$50 worth of tokens for only \$25 EBT.
 - **Monday:** 4 pm-7 pm
 - * Held in the gated area south of HyVee
 - **Wednesday:** 4 pm-7 pm
 - * Held in Cico Park in the gravel lot south of Kimball by ball fields
 - **Saturday:** 8 am-1 pm
 - * Held in the parking lot west of Dillards at 3rd and Leavenworth
 - * <http://www.manhattanfarmersmarket.org/home.html>
- **Flint Hills Breadbasket**
 - * 785-537-0730
 - * <http://breadbasket.manhattankans.org/>

Lesson 6: Food Safety

Why is it important?

- Food related illnesses can be life-threatening
- As you age, it is more difficult to fight off infection
- This makes it easier to get sick from eating unsafe foods

Storage

- Make sure to follow the label on any products
- Keep any canned or packaged items in cool, dry locations
- Make sure to check the dates on food before using them
- Use refrigerated leftovers in 3-4 days

Foods to Avoid:

- Raw or undercooked fish, shellfish, meat and poultry
- Refrigerated smoked fish (lox)
- Hot dogs, deli meat, and luncheon meats
- Raw or unpasteurized milk and milk products
- Soft cheeses made from unpasteurized milk
- Raw or undercooked eggs or egg products
- Raw sprouts
- Unwashed fresh vegetables, including lettuce
- Unpasteurized juices

1. Clean

- Wash hands and counter with hot, soapy water before preparing food
- Clean the lids of cans before opening
- Rinse fruits and vegetables under water, but without soap
- Do not rinse raw meat and poultry before cooking
- Keep the refrigerator clean
 - Use hot, soapy water to clean bins

2. Separate

- Keep raw meat, poultry, seafood, and eggs away from foods that won't be cooked
 - Put raw produce in one part of the cart and the raw meat in another part
 - Use the plastic bags the stores provide for raw meats
 - At the checkout, make sure they are not mixed in bags
- Keep raw meat and produce separate in the refrigerator
- Keep raw meats lower in the fridge to reduce the chance of the juices dripping onto other foods
- When cooking, keep foods that are ready-to-eat away from foods that are to be cooked
- Use a different knife and cutting board for produce and raw meats
 - You can also cut up all the produce before the raw meats
- After you are done with food prep, wash the knife and cutting board in hot, soapy water

3. Cook

- Use a food thermometer
 - Insert in the thickest part of the food you are cooking
- Make sure sauces, marinades, soups, and gravy come to a boil when heating

4. Chill

- Set your refrigerator to be at 40° F or below
- The freezer should be set at 0° F or below
- Make sure groceries get put away within two hours of purchase or cooking
- Leftovers should be placed in covered shallow dishes

USDA-Recommended Safe Minimum Internal Temperatures				
All Meats and Seafood	All Ground Meats	Egg Dishes	All Poultry	Hot Dogs and Lunch Meats
145° F (with 3-min rest)	160° F	160° F	165° F	165° F

Storing Cold Food		
Product	Refrigerator	Freezer
Eggs		
Raw eggs in shell	3 to 5 weeks	Do not freeze
Hard-cooked eggs	1 week	Do not freeze
Salads		
Egg, chicken, ham, tuna & macaroni	3 to 5 days	Does not freeze well
Hot Dogs		
Opened package	1 week	1 to 2 months
Unopened package	2 weeks	1 to 2 months
Luncheon Meats		
Opened package or deli sliced	3 to 5 days	1 to 2 months
Unopened package	2 weeks	1 to 2 months
Bacon & Sausage		
Bacon	7 days	1 month
Sausage, raw	1 to 2 days	1 to 2 months
Hamburger	1 to 2 days	3 to 4 months
Fresh Beef, Veal, & Pork		
Steaks	3 to 5 days	6 to 12 months
Roasts	3 to 5 days	4 to 12 months
Fresh Chicken or Turkey	1 to 2 days	9 months to 1 year
Soups & Stews	3 to 4 days	2 to 3 months

Pre/Post Evaluation

Date: _____

Initials: _____

Please choose the best answer to the following questions based on your current behaviors. Use the following scale: **5=Agree Completely, 4=Agree, 3=Neutral, 2=Disagree, 1=Disagree Completely.**

1.	I am confident that I am eating the correct amount of calories daily.	5	4	3	2	1
2.	I know what kinds of food I need to eat on a daily or weekly basis to get the nutrients that I need.	5	4	3	2	1
3.	I am familiar with common serving sizes.	5	4	3	2	1
4.	Food labels are easy to read, and I know what nutrients are important on the labels.	5	4	3	2	1
5.	I use nutritional labels on foods to make decisions on what to eat or what not to eat.	5	4	3	2	1
6.	I know what foods are important for healthy fats, protein, and carbohydrates.	5	4	3	2	1
7.	I know what vitamins and minerals I need to consume.	5	4	3	2	1
8.	I prepare meals without adding salt, fats, or sugars.	5	4	3	2	1
9.	I understand the difference between nutrient-dense and calorie-dense.	5	4	3	2	1
10.	I know how to lose weight, maintain weight, or gain weight.	5	4	3	2	1
11.	I am active on 3 or more days in a week.	5	4	3	2	1
12.	I am confident in my ability to obtain and prepare food.	5	4	3	2	1
13.	I compare prices (unit price and total price) before making purchases.	5	4	3	2	1
14.	I know the correct temperatures that food needs to reach in order to be safe.	5	4	3	2	1