

## Class 12: Let's Practice Beef



### 1. Beef Nutrition

**A. Beef is a good source of Zinc, Iron, Protein & B-Vitamins. One three ounce serving of cooked beef has the same amount of:**

#### **i. Zinc as 10 cups of sliced cooked carrots**

1. Serves as a cofactor for over 100 enzymes in the body, especially those involved with the metabolism of protein, carbohydrate, fat and alcohol.
2. Essential for protein synthesis, integrity of cell membranes, maintenance of DNA and RNA, tissue growth and repair, wound healing, taste acuity, prostaglandin production, bone mineralization, proper thyroid function, blood clotting and cognitive functions.

#### **ii. Iron as 3 cups of spinach**

1. About 65 to 75 percent of the body's iron is in the blood in the form of hemoglobin. Myoglobin, the compound that carries oxygen to the muscle cells, also requires iron.
2. Iron is involved in reactions within the body that produce energy.
3. Any excess iron is stored in the body as a reserve.

#### **iii. Protein as 1 ½ cups of cooked kidney beans** 1. Muscles, organs and many of your hormones are made up of protein

2. Used in the manufacture of hemoglobin, the red blood cells that carry oxygen to your body
3. Used to manufacture antibodies that fight infection and disease
4. Integral to your body's blood clotting ability



#### **iv. B-Vitamins, Folate, B12, B6, Riboflavin and Niacin**

1. Support and increase the rate of metabolism
2. Maintain healthy skin and muscle tone
3. Enhance immune and nervous system function
4. Promote cell growth and division — including that of the red blood cells that help prevent anemia.

5. Reduce the risk of pancreatic cancer, one of the most lethal forms of cancer when consumed in food, but not when ingested in vitamin tablet form.
6. Help combat the symptoms and causes of stress, depression, and cardiovascular disease.

## B. Comparison: Ground Beef and Ground Turkey

Ground Beef	3 oz. cooked	Daily Value	Ground Turkey	3 oz. cooked	Daily Value
Total Fat	5 gm.	8%	Total Fat	11 gm.	17%
Saturated Fat	2 gm.	11%	Saturated Fat	3 gm.	14%
Cholesterol	62 mg.	21%	Cholesterol	87 mg.	29%
Calories	139	7%	Calories	200	10%
Protein	22 gm.	44%	Protein	23 gm.	47%
Iron	2.4 mg.	13%	Iron	1.6 mg.	9%

## 2. Food Safety

### Control Measures

The Partnership for Food Safety Education recommends following these four simple steps to Fight BAC!" (bacteria):



#### Clean

1. Always wash hands in hot, soapy water for 20 seconds before preparing or eating food, and after using the bathroom, changing diapers and handling pets.

2. Wash cutting boards, counter tops, knives and utensils in hot, soapy water after they come in contact with raw meat, poultry and seafood, and before preparing other foods.



#### Separate

1. Bacteria can spread from one food to another through cross-contamination.
2. To decrease the risk of cross-contamination, keep raw meat, poultry and seafood and their juices away from ready-to-eat foods, such as fruits and vegetables.
3. If possible, use one cutting board for raw meat products and another for salads and other ready-to-eat foods.
4. Never place cooked food on a plate that previously held raw meat, poultry or seafood.



## Cook

1. Cooking foods to proper temperatures will kill the harmful bacteria that cause food-borne illness.
2. Cook ground meats (beef, pork, veal, lamb) to an internal temperature of at least 160 degrees F, non-ground meat cuts such as roasts (beef, veal, lamb) to an internal temperature of at least 145 degrees F.
3. Using an instant-read thermometer is the best way to determine doneness in ground meats and poultry. If an instant-read thermometer is not available, cook ground beef until the center is no longer pink and the juices show no pink color.
4. Reheat leftovers to 165 degrees F.

## Chill



1. Cold foods should be kept at or below 40 degrees F.
2. Refrigerate or freeze prepared food and leftovers within two hours.
3. Never defrost food on the kitchen counter. Use the refrigerator, cold running water or the microwave.
4. Marinate foods only in the refrigerator.
5. Carefully follow “keep refrigerated”, “sell by” and “use by” dates.

## Other Measures

Individuals with compromised immune systems should consult a physician regarding special food and food safety recommendations. Never drink unpasteurized milk or other dairy products or untreated water, and never eat raw or undercooked foods of animal origin.



## Mad Cow Disease (BSE)

### Is U.S. beef safe to feed to my family?

1. U.S. beef remains the safest in the world.
2. The BSE agent is not found in meat like steaks, roasts and ground beef. It is found primarily in central nervous system tissue such as brain and spinal cord.
3. There was a single case of BSE in a single animal in 2003 and the potentially infective parts of this animal were not allowed into the food supply.



### Is U.S. milk safe?

1. The U.S. food supply, including milk and beef, is very safe.
2. A substantial body of scientific research shows that beef and milk do not carry the BSE disease agent.
3. National and international public health organizations such as

the World Health Organization have consistently stated that milk and milk products are safe regardless of whether the country producing them has had cases of BSE.

### **Is “organic” beef safer from BSE?**

1. No. Both conventional and organic beef are safe from BSE.
2. Beginning in the 1980s the industry and government worked together to create a series of firewalls to safeguard the U.S. beef supply from the introduction or spread of BSE.
3. Regardless of how the beef is produced, you can be assured the beef you eat is safe.

### **Recipes**

#### **Inside Out Lasagna**

#### **Ingredients**

- 1# elbow macaroni
- 1# lean ground beef
- 1 large onion, diced
- 1 large green pepper, diced
- 1# sliced fresh mushrooms or 2-6 oz. cans, drained and rinsed
- 1 10 oz. box chopped spinach
- 1 can (10 oz.) tomato soup concentrate
- 1 can (6 oz.) tomato paste
- 2 tsp. Italian Seasoning
- 1 tsp. granulated garlic
- 1 tsp. salt
- ½ tsp. black pepper
- 16 squares saltine cracker, crushed
- 1 cup shredded low-fat mozzarella cheese
- ¼ cup parmesan cheese

#### **Directions**

1. Cook elbow macaroni in pot of boiling, salted water until done, but firm (about 8 minutes). Drain and set aside.
2. Meanwhile, brown ground beef in large skillet. Drain fat.
3. Add onion, pepper and mushrooms and cook until vegetables soften.

4. Thaw spinach in microwave, placing box in a bowl to catch liquid. When thawed, wring out the spinach and add spinach water to meat skillet. Stir in tomato soup concentrate, tomato paste, and seasonings. Cook over low heat 5 minutes, adding water to thin, if necessary.
5. Add chopped, drained spinach, cracker crumbs, and mozzarella cheese to cooked pasta and mix thoroughly. Spread in the bottom of a 9" X 13" pan that has been prepared with cooking spray. Spread meat mixture over pasta. Top with parmesan cheese.
6. Bake 20 minutes covered with foil at 350 degrees. Remove foil and bake an additional 10 minutes. Cut into squares and serve with green salad and bread.

## **Layered Enchilada Casserole**

### **Ingredients:**

- 1# lean ground beef
- 1 can (16 oz.) fat-free refried beans
- 1 package (1 3/8 oz.) chili seasoning mix, low sodium if available
- 1 cup water
- 1 can (15 oz.) tomato sauce
- 10 (8-inch) whole wheat flour tortillas
- 1 cup shredded low-fat cheddar cheese

### **Directions:**

1. Preheat oven to 350°. Spray 9 X 13" pan with non-stick spray.
2. In large skillet, brown ground beef and drain well.
3. Stir in beans, chili mix and water. Simmer 5 minutes, stirring once or twice.
4. Pour tomato sauce into a pie pan. Dip 5 tortillas on sauce one at a time, turning to coat both sides.
5. Place one layer of 5 tortillas in pan, overlapping them to fit. Top with 1/2 the beef and bean mixture.
6. Repeat tortilla and meat layers.
7. Sprinkle with cheese and bake 20 minutes.
8. Top with shredded lettuce, chopped green onion and diced fresh tomato.

**Note: You can make 2 nine-inch casseroles and freeze one after baking.**

## Florentine Ravioli Casserole

### Ingredients:

1 jar (26 ounce size) spaghetti sauce or 3 ½ cups homemade marinara sauce

½# lean ground beef

1 bag (30 ounce size) frozen large cheese ravioli, unthawed

2 boxes (10 ounce size) frozen chopped spinach, thawed & squeezed dry

1 bag (8 ounce size) shredded low-fat mozzarella

1/2 cup grated Parmesan cheese

### Directions

1. Heat oven to 350degrees F. Coat a 13 x 9-inch baking dish with cooking spray.
2. Brown ground beef and drain. Add spaghetti sauce and combine. Spoon one third of the sauce mixture into prepared pan and spread evenly.
3. Arrange 12 ravioli on top of sauce mixture and scatter the spinach over them. Top with half of each cheese.
4. Cover with another layer of ravioli and the remaining sauce and cheese. Cover with foil and bake 25 minutes. Uncover and bake 5 to 10 minutes more or until bubbly.

## Supplies for Florentine Ravioli & Layered Enchilada Casseroles

1 jar (26 ounce size) spaghetti sauce or 3 ½ cups homemade sauce

1 can (15 oz.) tomato sauce

1 can (16 oz.) fat-free refried beans

1 package (1 3/8 oz.) chili seasoning mix, low sodium if available

10 (8-inch) whole wheat flour tortillas

1 1/2# lean ground beef

1 bag (30 ounce size) frozen large cheese ravioli, unthawed

2 boxes (10 ounce size) frozen chopped spinach, thawed & squeezed dry

1 bag (8 ounce size) shredded low-fat mozzarella

1/2 cup grated Parmesan cheese

1 cup shredded low-fat cheddar cheese

2 c. shredded lettuce

6 chopped green onion

2 diced fresh tomatoes

Cooking spray

### Equipment

2 - 9" X 13" pans

2 - Skillets

Oven

2 Rubber spatulas

Measuring cups and spoons

Can opener