

# What's the "SKINNY" on BEEF?

## 1. Is beef high in fat?

According to data from the United States Department of Agriculture (USDA), many cuts of beef are 20% leaner, on average, than they were 14 years ago. In fact, there are 19 cuts of beef that fall within strict guidelines governing the "lean" designation as outlined in the 1990 Nutrition Labeling and Education Act (less than 10 grams of total fat, 4.5 grams or less of saturated fat, and less than 95 milligrams of cholesterol per serving and per 100 grams).

These cuts have on average 5.7 grams of total fat and 2.1 grams of saturated fat per 3-ounce serving. **Analysis of fresh meat case retail sales shows that 68% of whole muscle cuts and 17 of the top 20 most popular whole muscle cuts meet government guidelines for "lean."**

## 2. Isn't beef bad for you?

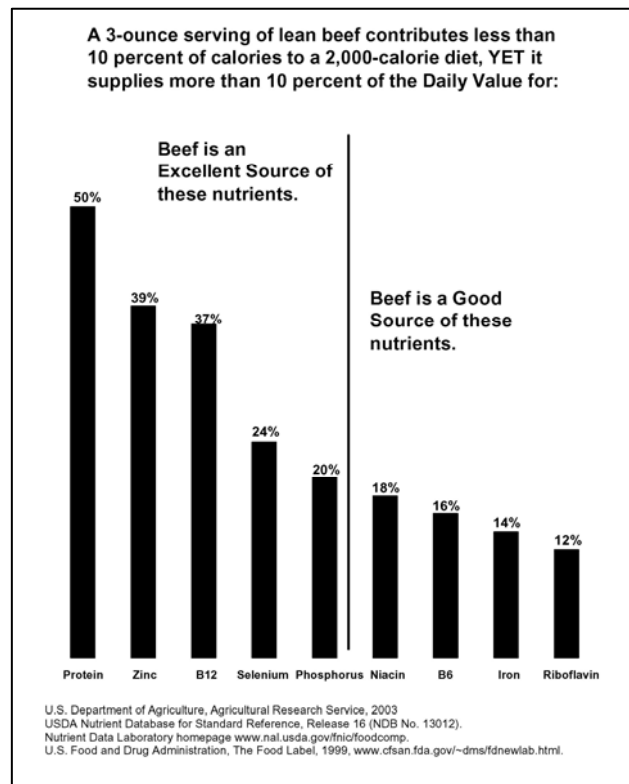
No. In fact, it's quite the opposite. A 3-ounce serving of lean beef contributes less than 10 percent of calories to a 2,000-calorie diet, yet it supplies:

- more than 20 percent of the Daily Value for protein (50%), zinc (39%), vitamin B<sub>12</sub> (37%), selenium (24%), phosphorus (20%),
- more than 10 percent of niacin (18%), vitamin B<sub>6</sub> (16%), iron (14%) and riboflavin (12%).

Beef also provides an abundance of nutrients in an easily absorbable form. In fact, you would have to eat six 3-ounce chicken breasts to equal the amount of zinc in one 3 ounce serving of beef, and almost 2½ 3-ounce chicken breasts to equal the same amount of iron in 3 ounces of beef.

## 3. Why does the public have such a negative view of beef?

Unfortunately, the dietary advice to limit fat intake has often been misinterpreted as advice to eliminate red meat from the diet. However, there are 19 cuts of beef that qualify as "lean." In addition, beef is one of the most naturally nutrient-rich foods. Research demonstrates diets that exclude or severely limit beef intake can lead to nutritional inadequacy. Even at current consumption levels (less than 3 ounces per day according to data from the United States Department of Agriculture), iron deficiency is the most common U.S. nutritional deficiency, causing developmental problems and feelings of fatigue. In addition, 38 percent of Americans aren't meeting the dietary requirements for zinc, which can impair mental capacity, including short-term memory, and the immune system. Beef supplies highly absorbable forms of both these nutrients.



#### 4. What about the saturated fat in beef?

A common misperception is that all of the fat in beef is saturated. In fact, USDA data shows that half of beef's fatty acids are the same as the heart-healthy fatty acids (monounsaturated) found in olive oil. In addition, the saturated fat in beef is unique. Approximately one-third of beef's total saturated fat is stearic acid, which has a neutral effect on blood cholesterol in humans. When this is taken into account, **the amount of potentially cholesterol-raising fatty acids is comparable in beef, fish and chicken.**

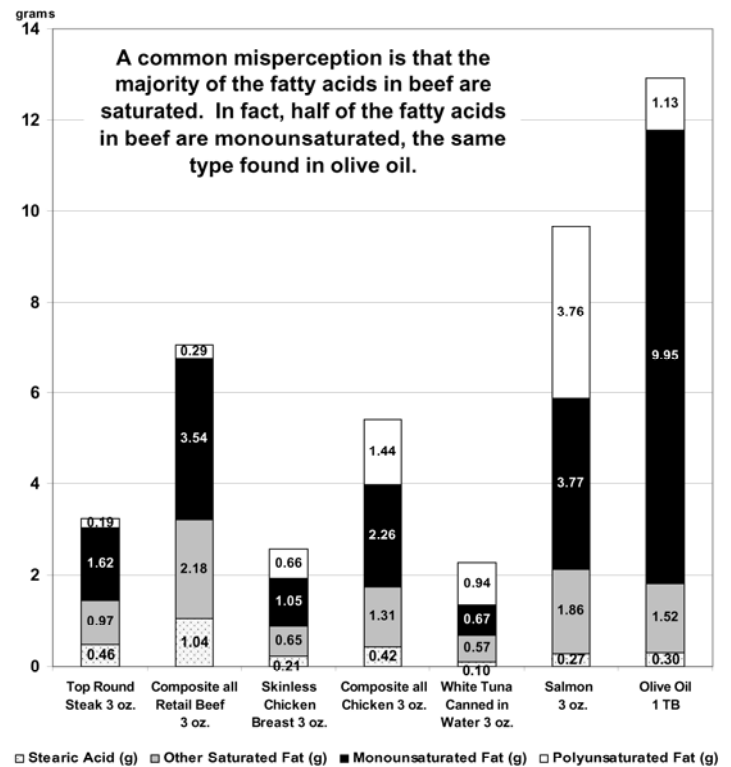
#### 5. Does beef contain *trans* fatty acids?

Recently, a great deal of attention has been focused on health risks associated with *trans* fatty acids. **In terms of both structure and function, the differences between man-made and naturally occurring *trans* fatty acids result in very different health effects.** Man-made *trans* fatty acids, found in foods containing partially hydrogenated vegetable oils, are a concern because research shows they raise LDL cholesterol levels and also lower HDL cholesterol levels, thereby increasing risk for heart disease. About 90% of all *trans* fat consumed in the American diet comes from these man-made *trans* fats found in processed and snack foods such as chips and cookies. The *trans* fatty acids that occur naturally in beef and dairy foods have very different physiological and biological functions compared to those found in processed foods. Research shows that naturally occurring *trans* fatty acids of animal origin do not increase risk of coronary heart disease and may decrease it.

In particular, the *trans* fatty acid conjugated linoleic acid (CLA), found in red meat and dairy products, has been shown to have positive health benefits including inhibiting breast and colon cancer tumor growth. Scientific literature acknowledges that the potential benefits of CLA also may include its anti-diabetic properties, enhanced immune response and positive effects on lean and fat body mass and growth. (MacDonald, H.B. Conjugated linoleic acid and disease prevention: a review of current knowledge. *J. Am.Coll.Nutr.* 19: 111s-118s; 2000.) In fact, in its position paper on functional foods, the American Dietetic Association identified CLA as a component in dairy products and red meat that may alter cancer carcinogenesis. The biological activities of CLA are still being identified and research on human subjects is currently underway.

#### 6. Is beef / red meat related to heart disease?

A study published in the *Archives of Internal Medicine* provides the most direct evidence that the case against beef, related to heart disease, has been misrepresented and has not been based on science. Results demonstrate people with high blood cholesterol can consume 6 ounces of lean red meat five or more days a week, as part of a heart-healthy diet, and drop their blood cholesterol levels, a leading risk factor in heart disease. (Davidson, M.H.; Hunninghake, D.; Maki, K.C.; Kwitterovich, P.O.; Kafonek, S. Comparison of the effects of lean red meat vs. lean white meat on



serum lipid levels among free-living persons with hypercholesterolemia. Arch. Intern. Med. 159:1331-1338, 1999.)

Specifically, the results of this study showed that total and low-density lipoprotein (LDL) cholesterol – what’s known as the bad cholesterol – decreased for the duration of the nine-month period and high-density lipoprotein cholesterol levels (HDL) – the good cholesterol – increased. Combined, these favorable changes in blood cholesterol levels amounted to approximately a 10 percent reduction in the risk of coronary heart disease.

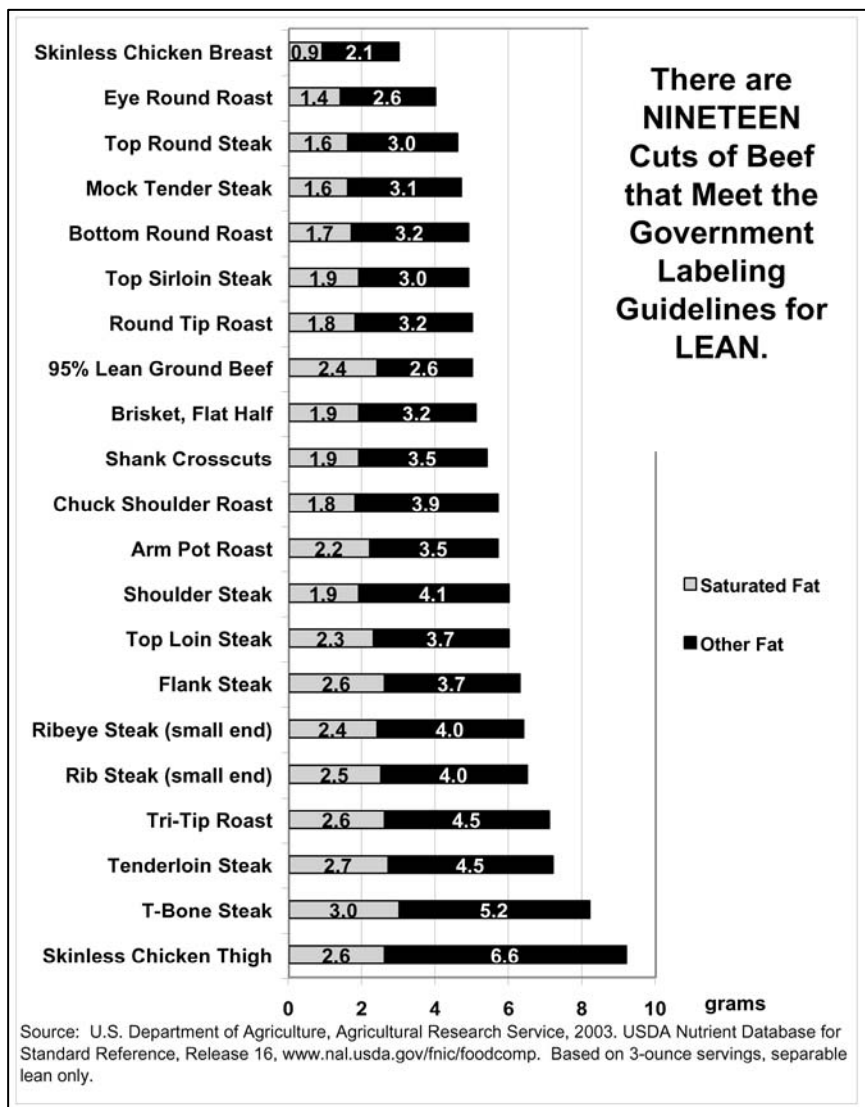
### 7. How can beef be part of a lowfat diet?

According to the 1990 Nutrition Labeling and Education Act (NLEA), claims about fat, saturated fat and cholesterol can be made for foods only if they meet strict requirements as defined by the government. A "lean" product is less than 10 grams of fat, 4.5 grams or less of saturated fat and less than 95 milligrams of cholesterol per serving and per 100 grams.

Beef can easily fit into lowfat diets as today’s beef is leaner than ever before. Choose one of the 19 cuts of beef that meet the government guidelines for “lean” - eye round, top round, mock tender steak, bottom round, top sirloin, round tip, 95% lean ground beef, brisket flat half, shank crosscuts, chuck shoulder roast, arm pot roast, shoulder steak, top loin, flank steak, ribeye steak (small end), rib steak (small end), tri-tip roast, tenderloin, and T-bone steak. **Twelve of these cuts have, on average, only one more gram of saturated fat than a comparable three-ounce serving of boneless, skinless chicken breast.**

Consumers can also trim visible fat before and after cooking, choose cooking methods to reduce fat (roast on a rack, grill, broil, pan-broil) and consume moderate portions.

Americans can enjoy any cut of beef by simply balancing their higher fat and lower fat food choices throughout the day. Think of it as a budget. A person on a 2,000 calorie diet is allowed 65 grams of fat per day. A 3-ounce serving of top sirloin has 4.9 grams of fat. And with that serving you’re getting a good source of nine essential nutrients in a great-tasting meal.



**8. Is there lowfat ground beef?**

Today’s consumers have many choices of ground beef at the supermarket. In 2002, USDA released new nutrient data that more accurately reflect the variety now available, including 95% lean ground beef which meets the government guidelines for “lean.” (US Department of Agriculture, Agricultural Research Service, 2003. USDA Nutrient Database for Standard Reference, Release 16, homepage: www.nal.usda.gov/fnic/foodcomp)


**9. Are vegetarian diets healthier than diets containing beef?**

While some scientific research does show that vegetarianism is associated with good health, the research does not show that the health benefits result from the diet. More likely, the benefits come from lifestyle factors other than diet, such as regular physical activity, maintenance of a desirable body weight, not smoking, and not abusing drugs or alcohol.

Eliminating red meat from the diet can compromise the intake of essential nutrients such as iron and zinc. Studies have linked deficiencies in these two nutrients to a meatless diet. Iron and zinc deficiencies can delay cognitive and physical development, as well as decrease immunity. The iron found in plant foods is not as abundant nor absorbable by our bodies. Beef contains heme iron, a form of iron more absorbable by our bodies than nonheme iron which is found in plant foods. Phytic acid, found in plant-based foods such as whole grain cereals, legumes and soy products, inhibits zinc absorption. Vegetarians who consume a phytate-rich diet may have a 50% higher requirement for dietary zinc than nonvegetarians. Iron and zinc deficiencies can delay cognitive and physical development, as well as decrease immunity.

**10. Isn’t it possible to meet nutrient requirements from non-meat sources?**

While foods outside the Meat Group contain some of the essential nutrients in red meat, beef is the food supply’s most readily available and easily absorbed source of iron and zinc.

	<b>Zinc</b>	= 11 2/3 (3-ounce) servings of tuna meat
	<b>B<sub>12</sub></b>	= 7 (3-ounce) skinless chicken breasts
	<b>Iron</b>	= 3 cups of raw spinach
	<b>Riboflavin</b>	= 2 1/3 (3-ounce) skinless chicken breasts
	<b>Thiamin</b>	= 1 3/4 (3-ounce) skinless chicken breasts

A person would have to eat almost 12 three-ounce cans

of tuna to get the same amount of zinc in a three-ounce serving of beef. He would have to eat 3 cups of spinach to get the same amount of iron in a three-ounce serving of beef. In fact, beef is one of the most naturally nutrient-rich foods. **Beef is the number one source of protein, zinc and vitamin B<sub>12</sub> in the American diet, the number two source of vitamin B<sub>6</sub> and the number three source of niacin and iron (behind fortified cereal and yeast bread).** Because it is a key source of nutrients, the *Food Guide Pyramid* includes beef in its recommendations with 2-3 servings from the Meat Group each day.

**11. Couldn’t you get the same nutrients from pills that you get from beef?**

Nature provided us with natural supplements, which we call food. Food provides a natural combination of nutrients we have identified and components we are just beginning to discover, all important to health. In a small package, beef provides an abundance of nutrients in highly absorbable forms.

## 12. Aren't we overeating meat and haven't a lot of health organizations, including government scientists, suggested we should cut back our beef consumption?

Leading health organizations support the *Food Guide Pyramid*, which recommends consuming 5-7 ounces of meat or the equivalent meat alternative each day.

## 13. Is chicken better for you than red meat?

No. Lean beef and skinless white meat chicken are comparable in terms of fat. There are 19 cuts of beef that fall between the skinless chicken breast and skinless chicken thigh in terms of total fat, and twelve of these cuts have, on average, only one more gram of saturated fat than a comparable three-ounce serving of boneless, skinless chicken breast.

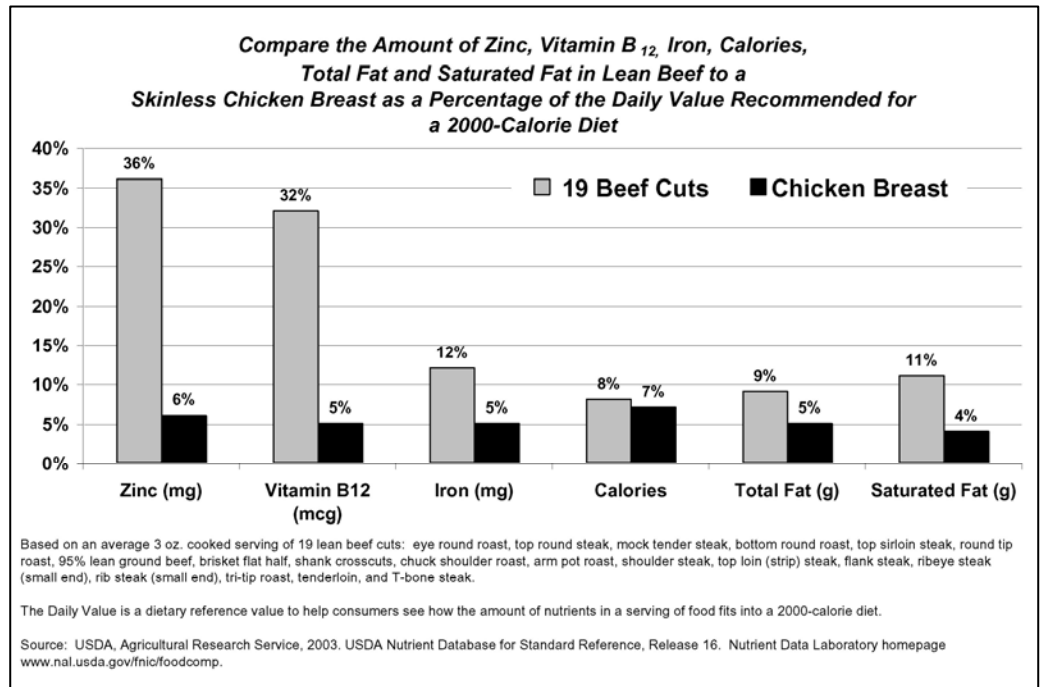
In addition, the recent study published in the *Archives of Internal Medicine* (see question 5) found that a heart-healthy diet containing either 6 ounces of lean red or white meat lowered the risk of heart disease by lowering low-density lipoprotein (LDL) and increasing the high-density lipoprotein cholesterol levels (HDL).

### And beef is also a naturally nutrient-rich powerhouse.

These same 19 lean cuts, on average, provide six times more zinc, six times more vitamin B<sub>12</sub> and more than two times more iron than a comparable three-ounce serving of skinless chicken breast.

Both beef and chicken have almost the same amount of dietary cholesterol. In fact, beef has just slightly less

cholesterol than chicken. For instance, a 3-ounce serving of beef has 71 mg; a 3-ounce chicken breast has 73 mg.



## 14. What other health benefits does beef contribute to the diet?

USDA data show beef is a terrific source of key nutrients, including iron, zinc, protein and B-vitamins. These nutrients are most absorbable from animal products such as beef. And the fact is, these nutrients are important to good health.

Research also shows:

- The skeletal health of older men and women may be improved by increasing protein intake as long as the recommendations for daily intake of calcium and vitamin D are being met. (Dawson-Hughes, B; Harris, S.S. Calcium intake influences the association of protein intake with rates of bone loss in elderly men and women. *Am. J. Clin Nutr.* 75:773-779, 2002)

- Increasing zinc intake improves psychomotor function and cognitive function, such as memory, reasoning, and attention in healthy school-age children. (Sandstead, H.H.; Penland, J.G.; Alcock, N.W.; Dayal, H.H.; Chen X.C.; Li, J.S. Zhao, F.' Yang, J.J. Effects of repletion with zinc and other micronutrients on neuropsychologic performance and growth of Chinese children. Am J. Clin Nutr. 68(2 Suppl):470s-475s, 1998.)
- Iron deficiency in infancy has been shown to have long term affects. In a longitudinal follow-up study, children treated for chronic deficiency as infants were shown to score lower on tests and were more likely to demonstrate problematic behavior as 11- to 14-year-old children. (Halterman, J.S.; Daczorowski, J.M.; Aligne, C.A.; Auinger, P.; and Scilagyi, P.F. Iron Deficiency and Cognitive Achievement Among School-Aged Children and Adolescents in the United States. Pediatrics. 107:1381-1386, 2001.)
- The vitamins B<sub>6</sub> and B<sub>12</sub> play protective roles in adults. Many studies show that reduced levels are linked to increased plasma homocysteine concentration, a potential risk factor for heart disease, stroke, depression, dementia and Alzheimer's disease. Both vitamin B<sub>12</sub> and B<sub>6</sub> have been shown to reduce levels of homocysteine.

**15. Does the beef industry have a position on popular high protein weight loss diets, such as the Atkins Diet?**

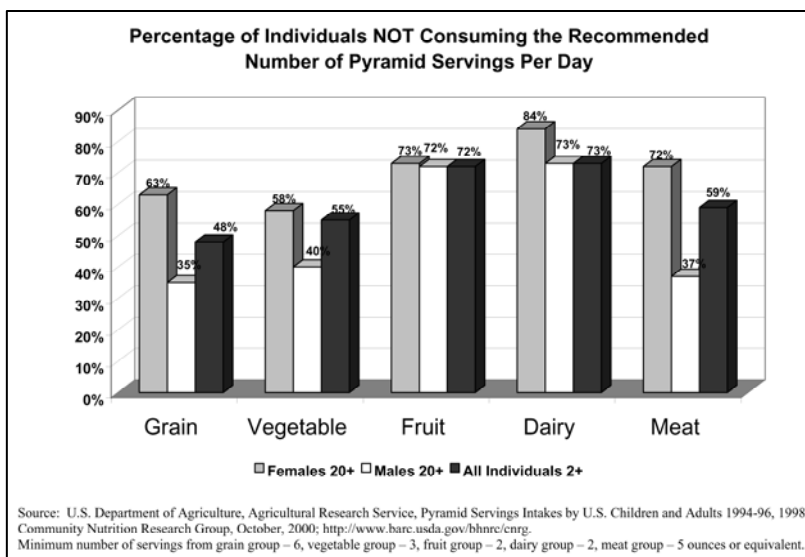
During the last thirty years, advice to reduce calories for weight control has often focused on reducing calories from fat, which has often led to limitations on foods from the meat and dairy groups. **Interestingly, as beef has gotten leaner and consumption has decreased among the U.S. population, the incidence of overweight/obesity has increased.** This suggests that focusing on a single food or nutrient will not curb overweight/obesity in America. There needs to be a more holistic or behavioral approach to weight loss/maintenance that addresses lifestyle pattern and educates consumers about energy balance – matching caloric intake with level of physical activity. With that, it is imperative to educate consumers about how to choose foods from all food groups to insure optimal intake of nutrients.

The beef industry supports continued research on the effectiveness and healthfulness of different diets with various combinations of protein, fat and carbohydrates. A recent review paper on the role of protein in food intake and body weight regulation shows positive and consistent findings that diets moderate in protein help promote weight loss. (Layman, D.K. The role of leucine in weight loss diets and glucose homeostasis. J Nutr. 133(1):261s-267s, 2003) There are several mechanisms by which protein may be more effective for weight loss/management, including satiety, thermogenesis and maintenance of lean body mass on calorie restricted diets.

**16. How can obesity rates be on the rise when Americans tend to be deficient in so many nutrients?**

As a nation, we may be overfed yet undernourished.

- Recent USDA findings indicate **Americans are consuming more than 40 percent of their calories from the tip of the Food Guide Pyramid** in the form of added sugars and fats.



- At the same time, a large percentage of individuals are not consuming the minimum number of recommended servings from the *Food Guide Pyramid*. The percent of individuals **NOT** consuming at least the minimum number of servings is 48 percent for the grain group, 55 percent for the vegetable group, 72 percent for the fruit group, 73 percent for the dairy group and 59 percent for the meat group.
- Americans are not meeting the Recommended Dietary Allowances (RDA) for many nutrients of which beef is a “good” or “excellent” source, including protein, zinc, vitamin B<sub>12</sub>, selenium, phosphorus, niacin, vitamin B<sub>6</sub>, iron and riboflavin. These nutrients are essential for good health throughout the life cycle. While providing more than 10% of the Daily Value of these essential nutrients, a three-ounce serving of lean beef supplies less than 10% of calories based on a 2000-calorie daily diet.

## 16. Doesn't red meat cause cancer?

No. In fact, no single food has been shown to cause cancer. Research confirms that diet is only one of many lifestyle factors that influence the risk of developing disease. At the same time, scientists are discovering components in food that reduce risk. In fact, studies indicate that beef may possess potent anti-cancer properties, such as conjugated linoleic acid (CLA), a fatty acid found naturally in beef and dairy products. In animal studies, CLA has been shown to inhibit breast and colon cancer tumor growth.

Research also shows that what's missing from the diet may be a more important determinant than what's in the diet. The importance of dietary variety, balance and moderation should be stressed along with the importance of protective factors, including adequate consumption of fruits and vegetables and a physically active lifestyle.

For more information:

[www.beefnutrition.org](http://www.beefnutrition.org) – to download charts in color or nutrition research fact sheets

[www.BeefItsWhatsForDinner.com](http://www.BeefItsWhatsForDinner.com) – for consumer information and recipes

[www.nal.usda.gov/fnic/foodcomp](http://www.nal.usda.gov/fnic/foodcomp) - to search USDA's Nutrient Database for Standard Reference

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