



From the Food Bank Kitchen

Iron and Calcium Absorption

It is important to get the daily recommendation of vitamins and minerals, but some nutrients compete for absorption, meaning it isn't always possible to get the most out of these foods. Two minerals that Americans do not get enough of are calcium and iron.

Calcium is important for bone growth and health. Calcium deficiency can lead to osteoporosis, stress fractures in bones and hypocalcemia (low calcium in the blood). The recommended daily allowance of calcium is around 1,000mg for adult men and women, and 1,300 mg for children. A glass of milk has around 300mg of calcium. Sources of calcium include dairy products, calcium fortified orange juice, dark leafy greens, beans, almonds, and figs.

Iron is important for red blood cell production, and it also plays a role in many chemical reactions in the body. Iron deficiency is the most common nutrient deficiency in the United States. The recommended daily allowance of iron is 11mg for men, and 18 mg for women. Sources of iron include red meats, dark leafy greens, shellfish, lentils, chickpeas, black beans, and fortified breakfast cereals.

Tannins and their effect on Calcium and Iron Absorption:

Tannins are a naturally occurring compound found in some plants. Tannins can give certain foods a distinct, bitter taste such as coffee, tea, or wine. How does this affect calcium and iron absorption? Tannins can bind to these nutrients, preventing them from being absorbed fully. While milk in coffee may not have maximum calcium absorption, an extra glass in the morning, or a cheese omelet will be absorbed fine. Black tea at lunch might inhibit a little iron from a spinach salad from being absorbed, but almonds on top of the salad or chickpeas in it will have enough iron to make up the difference.

Supplements:

Daily multi vitamins are beneficial for helping fill any nutrient gaps in the diet. While it is recommended that a person eats three well-balanced meals to meet all their vitamin and nutrient needs, a multi vitamin can ensure someone is getting all of their nutrients. When getting a multi vitamin, it is very important to note that iron and calcium compete for absorption. There is only so much that can be absorbed into the body at one time! If a person is iron deficient, they should take their iron supplement two hours after they take their multi vitamin. If a person must take a calcium supplement, it is important to note that calcium absorption is limited; the body can only soak up so much at a time (around 500mg or half of the RDA). If calcium supplementation is needed, it should be taken hours after a multi vitamin or any other supplement. Spacing out supplementation can increase absorption.

Nutrient	What hurts absorption?	What helps absorption?	Calcium sources
Calcium Important for bone growth and health	Tannins (coffee, tea, wine), iron rich meals, multi vitamins with both calcium and iron	<ul style="list-style-type: none"> Vitamin D Vitamin C rich meals If eating a meal with tannins, add more calcium rich foods 	<ul style="list-style-type: none"> Dairy Orange juice (with added calcium) Dark leafy greens (spinach, kale, etc) White beans Fish such as salmon, perch, and sardines
Iron Important for red blood cell production: this helps our bodies transport oxygen	Tannins (coffee, tea, wine), calcium rich meals, multi vitamins with both iron and calcium	<ul style="list-style-type: none"> Vitamin C rich meals Combining heme (meat sourced) and non-heme (plant sourced) iron in a meal . 	<ul style="list-style-type: none"> Red meat Seafood Beans Dark leafy greens (spinach, kale) Dried fruit Iron fortified cereals



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The Food Bank of Western Massachusetts

Red Pepper Muffin Frittatas

Serves: 6 (2 frittatas per serving)

Source: eggnutritioncenter.org

- 6 eggs or 3/4 cup (12 Tbsp) egg powder
- 1 cup plus 2 Tbsp cold water (for egg powder method)
- 1/4 tsp salt
- 1 cup shredded cheddar cheese
- 1/2 cup low fat milk

- 2 Tbsp red onion
- 1/2 cup red bell pepper
- 3/4 cup zucchini or spinach, chopped
- 1/4 tsp black pepper
- 1/2 tsp garlic powder and dried basil (optional)

To make egg powder: In a medium bowl, whisk together egg powder plus cold water. Put in the fridge for about 15 minutes. After 15 minutes the egg mixture can be incorporated into the recipe where eggs are mentioned.

Directions: PREHEAT oven to 350°. Spray or grease 12 muffin cups. Sauté onion and pepper in olive oil for about 4 minutes, add zucchini or spinach, and sauté 2 more minutes. Blend the eggs with the milk, salt, and pepper. ADD cheese and the sautéed veggies, garlic powder and basil and str. Spoon evenly into 12 muffin cups, about 1/4 cup each. Bake until just set, 20 to 22 minutes. COOL on a rack for 5 minutes, remove from cups; serve warm.

Nutritional Info: Per 2 muffin serving: 164 Calories, 3 gm Carbohydrates, 11 gm Total fat, 6 gm saturated fat, 12 gm Protein, 1 gm Fiber, 296 mg Sodium.

One serving has 20% of the Daily Target of calcium.

Ham and Spinach Spuds

Serves 4

Source: foodnetwork.com

- 4 large russet potatoes
- 4 Tbsp extra virgin olive oil, plus more for brushing (or any oil available)
- 2 Tbsp all-purpose flour
- 2 cups low fat milk
- 1 bunch spinach roughly chopped (around 1 cup)

- 4 thin slices ham (about 3 ounces) cut into strips
- Pinch of cayenne pepper (optional)
- Pinch of grated nutmeg
- 4 ounces gruyere or gouda cheese shredded (about 1 1/4 cups) or whatever cheese is available
- Salt and pepper to taste

Directions: PREHEAT oven to 400°. Pierce the potatoes with a fork; microwave the potatoes according to microwave settings. Remove and brush with olive oil; transfer to the oven rack and bake until fully tender, about 15 minutes. Meanwhile, heat 2 tablespoons of oil in a medium skillet over medium heat. Stir in the flour with a wooden spoon and cook until slightly toasted, about 1 minute. Whisk in the milk and bring to a boil. Reduce the heat and simmer, whisking occasionally until the sauce begins to thicken, about 6 minutes. Stir in the spinach and ham and cook until the greens wilt, and the mixture is about as thick as sour cream, 3 to 4 more minutes. Season with the cayenne and nutmeg and add salt to taste. Slice the cooked potatoes length wise (not all the way through): press in on the ends to open the slit. Drizzle 1/2 tablespoon of oil into each potato: fluff insides with a fork and season with salt. Divide the spinach mixture among the potatoes and top with the shredded cheese while still hot.

Nutritional Info: 415 Calories, 51g Carbohydrates, 16g Total fat, 5g Saturated fat, 19g Protein, 6g Fiber, 741mg Sodium

One spinach stuffed potato (with the skin) has around 23% of the daily value of iron for women

Sausage, Potato, and Kale Soup

Serves 6

- 1 tablespoon olive oil, or as needed
- 1 large onion, chopped
- 2 cloves garlic, crushed
- 1 pinch red pepper flakes, or to taste
- 1 pinch ground black pepper, or to taste
- 1 pound bulk Italian turkey sausage, removed from casings and crumbled

- 1/2 teaspoon dried basil
- 1/2 teaspoon paprika (optional)
- 6 cups low sodium chicken broth
- 4 cups chopped kale
- 15.5 ounce can, cannellini beans, drained and rinsed
- 1.5 cups chopped potatoes (or more to taste)
- Salt to taste

Directions: Heat oil in a large pot over medium heat, add in the onion, garlic, red pepper flakes and black pepper. Cook until the onion is translucent, around 10 minutes. Mix sausage, basil, and paprika in a bowl, stir the sausage mixture into the onion mixture, cook and stir until the sausage is browned and fully cooked, around 10 minutes. Add chicken broth, kale, cannellini beans, and potatoes to sausage and onion mixture. Cover pot and simmer until potatoes are tender, around 15 to 20 minutes.

Nutritional Info: 271 Calories, 34g Carbohydrates, 9g Total fat, 2g Saturated fat, 18 g Protein, 7g Fiber, 236mg Sodium

One serving has 26% of the daily value of iron, and 16% of the daily value of calcium!