Meatless and plant-based meals and diets have been shown to be more sustainable, promote better health, and better for the environment. Meatless meals tend to have fewer calories, less fat, and are more cost effective.

**What is a meatless meal?**

A meatless meal is a plant-based meal that contains no meat. To be a well-balanced meal, the meat needs to be replaced with a plant-based protein such as beans, nuts, nut butters, peas, and soy products. Meat can also be replaced with a non-meat animal product such as dairy or egg products.

**Meatless Benefits**

Eating meatless meals contributes to health and financial benefits. Having one to two meatless days a week will contribute the following benefits:

- Fewer calories
- Higher fiber content
- Complex carbohydrates
- Less cholesterol or cholesterol-free
- Higher fruit and vegetable intake
- Heart healthy
- Food sustainability
- Less environmentally impacted
- Cost effective

**Better Health**

Replacing meat with a plant protein will increase fiber content, complex carbohydrates, and increase fruit and vegetable intake. This is linked to better health such as heart health, lower cholesterol, reduced stroke risk, weight loss and management, and better diet.

**Money Savings**

According to the United States Department of Agriculture, in 2015, data reports claimed that meat prices were 132% higher than plant-based proteins. Below is a table comparing animal meat protein prices to plant-based protein prices.

**How much protein do I need?**

<table>
<thead>
<tr>
<th>Animal Protein</th>
<th>Plant-Based Protein</th>
<th>Price/1 lb</th>
<th>Price/1 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean Ground Beef</td>
<td>Tofu</td>
<td>$5.69</td>
<td>$1.81</td>
</tr>
<tr>
<td>Pork</td>
<td>Beans, all, dried</td>
<td>$3.62</td>
<td>$1.30</td>
</tr>
<tr>
<td>Bologna</td>
<td>Peanut butter</td>
<td>$2.72</td>
<td>$2.50</td>
</tr>
<tr>
<td>Chicken breast, boneless</td>
<td>Lentils, dried</td>
<td>$3.31</td>
<td>$2.70</td>
</tr>
<tr>
<td>Eggs (meatless)</td>
<td>Almonds, shelled</td>
<td>$1.39</td>
<td>$4.79</td>
</tr>
</tbody>
</table>

**Prices based on the USDA database and US Department of Labor from October 2016**

Americans tend to consume more protein than needed. Below is a table from ChooseMyPlate.gov displaying the recommended amount of protein needed based on age, gender, and less than 30 minutes of physical activity daily.

**What counts as an ounce?**

<table>
<thead>
<tr>
<th>DAILY PROTEIN FOODS TABLE</th>
<th>DAILY RECOMMENDATION*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>2-3 years old</td>
</tr>
<tr>
<td></td>
<td>4-8 years old</td>
</tr>
<tr>
<td>Girls</td>
<td>9-13 years old</td>
</tr>
<tr>
<td></td>
<td>14-18 years old</td>
</tr>
<tr>
<td>Boys</td>
<td>9-13 years old</td>
</tr>
<tr>
<td></td>
<td>14-18 years old</td>
</tr>
<tr>
<td>Women</td>
<td>19-50 years old</td>
</tr>
<tr>
<td></td>
<td>51+ years old</td>
</tr>
<tr>
<td>Men</td>
<td>19-30 years old</td>
</tr>
<tr>
<td></td>
<td>31-50 years old</td>
</tr>
<tr>
<td></td>
<td>51+ years old</td>
</tr>
</tbody>
</table>

**Source: http://ww.Choosemyplate.gov**
A serving size of protein in a meal is considered 4 ounces. A serving size of meat is about the size of a deck of cards. Below is a table displaying meat and meatless ounce equivalences.

<table>
<thead>
<tr>
<th>OUNCE-EQUIVALENT OF PROTEIN</th>
<th>1 Ounce of Protein Equivalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat</td>
<td>1 ounce cooked lean beef</td>
</tr>
<tr>
<td></td>
<td>1 ounce lean pork</td>
</tr>
<tr>
<td>Poultry</td>
<td>1 ounce cooked chicken, skinless</td>
</tr>
<tr>
<td></td>
<td>1 slice sandwich meat (turkey or chicken)</td>
</tr>
<tr>
<td>Eggs</td>
<td>1 Egg</td>
</tr>
<tr>
<td>Nuts &amp; Spreads</td>
<td>12 almonds</td>
</tr>
<tr>
<td></td>
<td>24 pistachios</td>
</tr>
<tr>
<td></td>
<td>7 walnut halves</td>
</tr>
<tr>
<td></td>
<td>1 Tablespoon of peanut or almond butter</td>
</tr>
<tr>
<td>Beans</td>
<td>¼ cup cooked beans or peas</td>
</tr>
<tr>
<td></td>
<td>¼ cup tofu</td>
</tr>
<tr>
<td></td>
<td>2 tablespoons hummus</td>
</tr>
</tbody>
</table>

**Source: ChooseMyPlate.gov**

**Making it Count**

Replacing a certain animal protein with a plant-based protein can help you save calories in a meal. Replacing steak strips with black beans can help you save 92 calories per serving. Below is a table comparing the different proteins.

<table>
<thead>
<tr>
<th>CALORIE COMPARISON</th>
<th>Protein</th>
<th>Serving Size</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black Beans, boiled</td>
<td>1/2 cup</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Top Sirloin Steak Strips</td>
<td>4 oz</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>Pinto Beans, boiled</td>
<td>1/2 cup</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Chicken breast, grilled</td>
<td>4 oz</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Navy Beans</td>
<td>1/2 cup</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Ground beef, pan fried</td>
<td>4 oz</td>
<td>349</td>
</tr>
<tr>
<td></td>
<td>Tofu, firm</td>
<td>4 oz</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Pork Chops, broiled</td>
<td>4 oz</td>
<td>71</td>
</tr>
</tbody>
</table>

**Source: United States Department of Agriculture Agricultural Research Service National Nutrient Database for Standard Reference Release 28**

**Conclusion**

Meatless meals aren’t only for vegetarians. Having one to two days a week meat-free will not only help you financially, but will help improve your health. Meats and animal proteins can easily be replaced with beans, legumes, nuts, nut butters, and soy products in any meal. Replacing animal protein with plant-based proteins will increase your dietary fiber, complex carbohydrates, decrease cholesterol intake, and decrease calorie intake.

**References:**


**NOTE: THIS IS A DRAFT**
Meatless Recipes

ONE-PAN BEANS AND CORNBREAD

- 1 (12 ounce) package frozen butter beans, thawed
- 1 (12 ounce) package frozen baby lima beans, thawed
- 1 (15 ounce) can no-salt-added kidney beans, rinsed and drained
- 1 (28 ounce) can baked beans with onions
- 2 tablespoons brown sugar
- 1 cup vinegar
- ½ cup water
- 1 teaspoon prepared yellow mustard
- 1 (6 to 8½ ounce) envelope cornbread mix*

* Nutrition facts were calculated using a 7½ ounce envelope

1. Preheat oven to 325 degrees F.
2. In a greased 3-quart baking dish, mix first eight ingredients together.
3. Bake uncovered for 30 minutes. Remove from oven. Increase temperature to 400 degrees F.
4. Mix cornbread according to package directions. Spread on top of beans.
5. Bake for an additional 20 minutes or until cornbread is golden brown.

Makes 8 servings

Serving size: 1 cup beans and slice of bread

Cost per recipe: $7.76
Cost per serving: $0.97

Source: Rita May, Senior Extension Associate for Kentucky Nutrition Education Program, University of Kentucky Cooperative Extension Service

Nutrition facts per serving: 400 calories; 4g total fat; 1g saturated fat; 0g trans fat; 15mg cholesterol; 720mg sodium; 73g carbohydrate; 15g fiber; 13g sugar; 18g protein; 2% Daily Value of vitamin A; 8% Daily Value of vitamin C; 15% Daily Value of calcium; 30% Daily Value of iron.

Note: Canned or cooked, dried beans may be substituted for any beans above. Using prepared dry beans in place of canned will reduce sodium in this dish.

VERY VEGGIE POZOLE (HOMINY STEW)

- 2 tablespoons vegetable oil
- 1 medium white onion, diced
- 4 cloves garlic, minced
- 2 stalks celery, diced
- ½ jalapeño, seeded and finely diced (optional)
- 4 cups low-sodium vegetable broth
- 4 whole peppercorns
- 1 bay leaf
- 3 medium carrots, diced
- 1 medium zucchini, diced
- 1 (29 ounce) can white or yellow hominy, drained and rinsed
- 1 (15 ounce) can low-sodium pinto beans, drained and rinsed
- 1 cup tomatillo salsa (may use regular salsa)
- 1 tablespoon salt-free southwest chipotle seasoning blend
- 2 teaspoons cumin
- Juice of 1 lime
- ½ cup cilantro, chopped
- Salt and pepper to taste

Optional toppings:
Finely shredded iceberg lettuce or cabbage, sliced radishes, diced onion, diced avocado, cojita cheese, tortilla chips, lime wedges and hot sauce.

1. In a large pot, heat oil over medium-high heat. Sauté onion, garlic, celery and jalapeño (if using) for 2 minutes.
2. Add vegetable broth, peppercorns, bay leaf and carrots.
4. Add lime juice and cilantro. Simmer for an additional 5 minutes.
5. Remove peppercorns and bay leaf. Add salt and pepper to taste. Serve with toppings of choice.

Makes 6 servings

Serving size: 2 cups

Cost per recipe: $9.18
Cost per serving: $1.53

Source: Becky Freeman, Social Marketing Research Project Coordinator for Kentucky Nutrition Education Program, University of Kentucky Cooperative Extension Service

Nutrition facts per serving: 230 calories; 6g total fat; 0.5g saturated fat; 0g trans fat; 0mg cholesterol; 570mg sodium; 37g carbohydrate; 8g fiber; 5g sugar; 6g protein; 110% Daily Value of vitamin A; 40% Daily Value of vitamin C; 10% Daily Value of calcium; 15% Daily Value of iron.

Note: Cooked, dried beans can be used in place of canned. See back of calendar for instructions on cooking dried beans.
MEDITERRANEAN SALAD ERRANE

Dressing ingredients:
• ¼ cup olive oil
• 3 tablespoons red wine vinegar
• ½ teaspoon Dijon mustard
• 2 teaspoons garlic, minced
• 1 teaspoon dried oregano
• salt and pepper to taste

Salad ingredients:
• 1 large head romaine lettuce, chopped
• ½ medium red onion, diced
• 1 (15 ounce) can no-salt-added chickpeas, drained and rinsed
• 1 large green bell pepper, diced
• 1 pint grape tomatoes
• 1 medium cucumber, sliced
• 4 ounces reduced-fat feta cheese, crumbled
• ¼ cup whole black olives, pitted

1. In a Mason jar (or small bowl), combine dressing ingredients. Tightly screw on the lid and shake to combine.
2. In a large bowl, combine salad ingredients and toss with prepared dressing.

Makes 6 servings
Serving size: 1½ cups of salad with 1¹⁄₃ tablespoons of dressing
Cost per recipe: $8.16Cost per serving: $1.36

Source: Jeannie Najor, Senior Extension Associate for Kentucky Nutrition Education Program, University of Kentucky Cooperative Extension Service
Nutrition facts per serving: 250 calories; 13g total fat; 3g saturated fat; 0g trans fat; 5mg cholesterol; 340mg sodium; 23g carbohydrate; 7g fiber; 5g sugar; 10g protein; 200% Daily Value of vitamin A; 60% Daily Value of vitamin C; 15% Daily Value of calcium; 15% Daily Value of iron.

Note: To lower the cost of this recipe, use Parmesan cheese in place of feta cheese.

TEX MEX BEAN SLIDERS

• 2 (15 ounce) cans low sodium pinto beans
• 1½ cups plain bread crumbs
• 2¼ teaspoons ground cumin
• 2 cloves garlic, minced
• 2 eggs
• 2 tablespoons enchilada sauce
• ¼ cup light mayonnaise
• 1 cup crushed saltine crackers
• 2 tablespoons vegetable oil
• 14 slider rolls
• 1 ½ ounce lettuce

1. In a large bowl, combine pinto beans, bread crumbs, ground cumin, minced garlic and eggs. Mix until lightly combined. Use the bottom of a drinking glass to mash beans and stir mixture until a stiff paste is formed. Cover and refrigerate.
2. Stir enchilada sauce into mayonnaise. Cover and refrigerate.
3. Divide bean mixture into 14 equal portions. Form each portion into a patty, ¼ - ⅜ inch thick.
4. Coat a nonstick frying pan with a small amount of vegetable oil. Coat each patty with cracker crumbs, and cook over medium heat until brown. Turn, and cook until second side is brown and patty is set. Internal temperature should reach 165 degrees F.
5. On one half of each slider roll, place ¼ slice of cheese. Top with one bean slider, lettuce and enchilada mayonnaise sauce.
Options: Substitute spinach leaves for lettuce. Add a slice of tomato.

Makes 7 servings
Serving size: 2 sliders
Cost per recipe: $9.75Cost per serving: $1.40

Source: Jackie Walters, Extension Specialist for Nutrition Education Programs, University of Kentucky Cooperative Extension Service
Nutrition facts per serving: 650 calories; 22 g total fat; 6 g saturated fat; 0 g trans fat; 80 mg cholesterol; 1200 mg sodium; 88 g carbohydrate; 9 g fiber; 6 g sugar; 25 g protein

TAILGATER CAVIAR

• 1 (15 ounce) can black beans, drained and rinsed
• 1 (15 ounce) can black-eyed peas, drained and rinsed
• 1 (15 ounce) can white corn, drained
• 1 (15 ounce) can yellow corn, drained
• 2 (10 ounce) cans mild diced tomatoes and green chilies, drained
• 1 (4½ ounce) can of chopped black olives, drained
• 1 ½ cups of light Italian dressing
• Garlic powder, salt ,and pepper to taste

...
1. Mix all ingredients and let sit in the refrigerator over-night.
2. Serve with tortilla chips.

OPTIONS: Add onion, green peppers, cilantro, or jalapeno peppers. Garnish with chopped parsley. Omit black olives to save about $1.65.

MAKES 20 SERVINGS
Serving Size: ½ cup
Cost Per Recipe: $8.98
Cost Per Serving: 45 cents

SOURCE: Jeffrey Hines, Lexington, Kentucky

NUTRITION FACTS PER SERVING: 110 calories; 3 g total fat; 0 g saturated fat; 0 g trans fat; 0 mg cholesterol; 710 mg sodium; 18 g carbohydrate; 2 g fiber; 3 g protein; 0% Daily Value of vitamin A; 6% Daily Value of vitamin C; 2% Daily Value of calcium; 4%