



Perfect Protein

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Why Protein?

- Builds and repairs muscle, bone, skin, cartilage, blood, and hair
- Produces enzymes and hormones
- Regulates water balance and transports nutrient
- Infection fighting
- Blood clotting
- Found in muscles, hemoglobin, myoglobin, hormones, antibodies, and enzymes
- Makes up 45% of the human body
- Muscle is only 20% protein; approximately 70% water!
- Needs extra water, carbohydrate, and a little protein to build!



So...how much?

- 0.8-1 g/kg for sedentary-recreational athletes (4-5 days/week for 30 minutes at <55% VO₂ max)
- 1.2-1.7 g/kg for light to moderate intensity (4-5 days/week for 45-60 minutes)
- 1.4-2 g/kg for heavy training load, high intensity
- Weight in pounds/ 2.2; then multiply by 0.8-2
- THE AVERAGE, VARIED AMERICAN DIET TYPICALLY PROVIDES ENOUGH, IF NOT MORE, THAN ENOUGH PROTEIN!
- RDA: 46g- women
- 56g -men



What happens when there is too much protein?

- Extra protein is stored as fat!
- Osteoporosis
- Kidney disease
- Kidney stones
- Toxic build up of ketones (>30% of kcal from PRO)
- Risk of dehydration
- Losing muscle mass and bone cal
- Strain on the heart




When is the best time to consume protein?

- Every meal
- Breakfast: eggs, oatmeal, yogurt, fruit smoothies
- Lunch: nuts/seeds on salad, turkey sandwich with WW bread
- Dinner: 3-4 oz chicken, lean beef or pork, fish, tofu, quinoa
- Every snack
- granola bar
- string cheese
- soy nuts
- hardboiled egg
- Post-physical activity
- Within an hour
- 4:1- carbs:PRO
- Tried chocolate milk?


SOURCES OF PROTEIN

Meat

- Poultry
 - Stick to white meat; dark has more fat
 - Remove the skin, as it is loaded with saturated fat
 - Bake, roast, grill
- Beef
 - <http://www.beefitswhatsfordinner.com/CMDocs/BIWFD/29%20lean%20cuts%20wallet%20card.pdf>
- Pork
 - Tenderloin, center cut chop, top lo



Fish



- Lean: flounder, sole, cod, red snapper, bass, perch, halibut, pike
- Fatty: salmon, tuna, trout, mackerel
- Good sources of omega-3's!
- Bake, grill, roast

Dairy Products

- Milk, cheese, yogurt
- Skim, low fat
- Do NOT count butter, sour cream, ice cream
- Also good source of calcium, vitamin D



Eggs



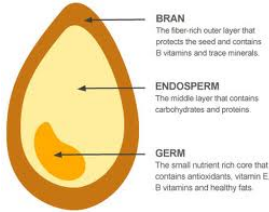
- Very inexpensive!
- 1 egg/day- AHA recommendations
- Hard boiled with breakfast, for snacks, on salads, etc
- The yolk is ok!!

Soy

- Plant based
- Powerful antioxidants
- Lower in fat
- Caution with over-doing soy:
 - isoflavones mimic estrogen
- Stick to 1 serving/day
-
- Soymilk
- Tempeh
- Tofu
- Edamame
- TVP



Whole grains



BRAN
The fiber-rich outer layer that protects the seed and contains B vitamins and trace minerals.

ENDOSPERM
The middle layer that contains carbohydrates and proteins.

GERM
The small nutrient rich core that contains antioxidants, vitamin E, B vitamins and healthy fats.

- Bread
- Cereal
- Granola
- Bagels
- Quinoa
- Brown rice
- Wild rice
- Oatmeal
- Popcorn

Legumes



- Comparable to meat in terms of calories
- More fiber, water
- Recommend 1-3 C/week
- 1 C= 12 g of fiber
- Low in sugar, no saturated fat
- High in antioxidants: 3 types of beans made the top 4 out of 100 common foods: small red, red kidney, and

(nutritious AND quick!)

BEAN/LEGUME/LENTIL RECIPES


Rice and black bean pilaf

Ingredients

- 1 cup brown rice, uncooked
- 2 1/4 cups low-sodium chicken broth
- 1 tablespoon olive oil
- 1 small onion, diced (1 cup)
- 2 cloves garlic, minced
- 2 teaspoons fresh chopped oregano or 1 teaspoon dried
- 1 stalk celery, finely diced
- 1 large carrot, finely diced
- 1 teaspoon ground cumin
- 1/2 teaspoon dried chili flakes
- 1 (15.5 ounce) can low-sodium black beans, drained and rinsed
- 2 teaspoons finely chopped parsley leaves

Directions

- Place rice and chicken broth in a saucepot and bring to a boil. Reduce heat and cook rice, covered, until tender and all the liquid is absorbed, 30 to 35 minutes. Remove from heat, uncover, and fluff with a fork.
- Heat the oil in a large saute pan over medium-high heat. Add onions and cook until onions are soft and translucent, about 5 minutes. Add garlic, oregano, celery, carrot, cumin and chili flakes and cook, stirring occasionally, until carrots are tender but not mushy, about 5 minutes. Stir in black beans and cook until just warmed through, about 1-2 minutes.
- Combine onion-black bean mixture and hot rice in a serving bowl and toss to combine. Garnish with parsley.




Avocado and black eyed pea salsa

Ingredients

- 2 ripe but firm avocados, diced
- 1/2 cup chopped green onion
- 1/2 cup chopped fresh cilantro
- 1 cup chopped roma (plum) tomatoes
- 1 (11 ounce) can shoepeg corn, drained
- 1 (15 ounce) can black-eyed peas, rinsed and drained
- 1/4 cup red wine vinegar
- 1/4 cup olive oil
- 1 teaspoon ground cumin
- 1/2 teaspoon minced [garlic](#)
- salt and [black pepper](#) to taste

Directions

- Lightly mix together avocados, green onion, cilantro, tomatoes, corn, and black-eyed peas in a salad bowl until well combined.
- Whisk together red wine vinegar, olive oil, cumin, and minced garlic in a bowl, and pour over the salad. Season to taste with salt and pepper, and lightly toss the salad again. Chill for 1 hour before serving, to blend the flavors.




Greek garbanzo salad

Ingredients

- 2 (15 ounce) cans garbanzo beans, drained
- 2 cucumbers, halved lengthwise and sliced
- 12 cherry tomatoes, halved
- 1/2 red onion, chopped
- 2 cloves [garlic](#), minced
- 1 (15 ounce) can black olives, drained and chopped
- 1 ounce crumbled feta cheese
- 1/2 cup Italian-style salad dressing
- 1/2 lemon, juiced
- 1/2 teaspoon garlic salt
- 1/2 teaspoon [ground black pepper](#)

Directions

- **Combine the beans, cucumbers, tomatoes, red onion, garlic, olives, cheese, salad dressing, [lemon juice](#), garlic salt and pepper. Toss together and refrigerate 2 hours before serving.**



Shakes/bars/supplements

- Research has not proven their role in sports performance and muscle strength
- Everyone, including athletes, can meet their protein needs without supplements/shakes/bars
- Usually have whey (liquid milk protein, quick to digest), casein(main milk protein, digests slow) and soy protein (plant-based, digesting slowly)
- Not necessary



Common food/protein content

Food (amount)	Protein (g)	Food	Protein (g)
Egg (whole)	6	Oatmeal (1 C)	3-5
Chicken/fish/beef (3 oz)	21	Nuts (1/4 C)	5-7
Soymilk (8 oz)	6-8	Seeds (1/4 C)	9-10
Milk (8)	8-11	Pork tenderloin (4 oz)	29
Yogurt (8 oz)	8-12	Cottage cheese (1/2 C)	15
Cheese (1 oz)	6-8	Peanut butter (2 T)	8
Beans (1/2 C)	7-8	Tofu (4 oz)	7-8
Quinoa (1 C)	5	Wheat pasta (1/2 C)	4

Complete Proteins

- Amino Acids
 - Essential
 - Non-essential
- Incomplete: missing one or more essential amino acids
 - Grains, legumes, nuts, seeds, vegetables
- Complete: contain all essential amino acids
 - Meat, fish, poultry, milk, eggs
- Food for thought
 - *Gelatin, though an animal product, is the only animal product not considered a complete protein
 - *Quinoa, though a grain, is considered a complete protein



Creating complete proteins

• **Complementary Protein Sources**

Grains	Legumes	Nuts/Seeds
Barley	Beans	Sesame seeds
Bulgur	Lentils	Sunflower seeds
Cornmeal	Dried peas	Walnuts
Oats	Peanuts	Cashews
Buckwheat	Chickpeas	Pumpkin seeds
Rice	Soy products	Other nuts
Pasta		
Rye		
Wheat		

- Put it together...
- Hummus: chickpeas+ sesame paste
- Beans+rice
- Tabbouli: bulgur+chickpeas
- Salad: dried peas+ sunflower seeds
- Pasta+ tofu

Lacking? Quick ways to get protein in the diet

- Yogurt
- String cheese
- Granola bar
- Hard boiled egg
- Peanut butter
- Hummus
- Trail mix/ nuts
- Edamame
- Instant oatmeal
- Snack on nuts



HIGH PROTEIN DIETS

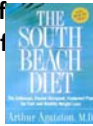
Atkins

- **Theory:** Overweight people eat too many carbohydrates.
- **How it Works:** Drastically reducing carbohydrates, increasing protein and fat. Carbohydrates are minimally reintroduced after severe induction phase. The body goes into ketosis and burns fat instead of carbohydrate first.



South Beach

- **Theory:** Highly processed carbs get digested quickly, which spikes insulin levels, and high insulin levels make you crave more food.
- **How it Works:** Severe induction phase, followed by reintroducing low glycemic index foods. This diet does ban unhealthy fats, however, and doesn't count grams of fat. Must eat "normal" portions.



Zone

- **Theory:** Eating a set ratio of carbohydrates, protein and fat (40%-30%-30%) puts the body into a metabolic state in which the body works at peak efficiency.
- **How it Works:** Consume protein at every meal and snack, "favorable carbs" twice the size of protein, and a smaller amount of "unfavorable carbs". Based on research on insulin production.



Moral of the story...

- **DON'T DO IT!**
- **Stick with a varied diet**
- **Get a small amount of protein at each meal and snack**
- **Keep grains whole**
- **Watch saturated fats**
- **Eat breakfast, eat every 3-4 hours**
- **Get a variety of fruits and vegetables**
- **Being healthy means not only health**



Quick and easy!

RECIPES

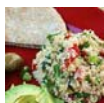
Quinoa tabouli

Ingredients

- 2 cups water
- 1 cup quinoa
- 1 pinch salt
- 1/4 cup olive oil
- 1/2 teaspoon sea salt
- 1/4 cup [lemon juice](#)
- 3 tomatoes, diced
- 1 cucumber, diced
- 2 bunches green onions, diced
- 2 carrots, grated
- 1 cup fresh parsley, chopped

Directions

- In a saucepan bring water to a boil. Add quinoa and a pinch of salt. Reduce heat to low, cover and simmer for 15 minutes. Allow to cool to room temperature; fluff with a fork.
- Meanwhile, in a large bowl, combine olive oil, sea salt, lemon juice, tomatoes, cucumber, green onions, carrots and parsley. Stir in cooled quinoa.



Crock Pot Barbeque Pork Tenderloin

Ingredients

- 1 4lb. pork tenderloin
- 2 bottles of diet root beer
- 1 bottle of low sugar barbecue sauce
- 1tsp salt
- 1tsp black pepper
- 1 tsp garlic powder
- 1 package whole wheat thin buns



Directions

- In a small bowl, mix the pepper, salt, and garlic powder.
- Generously rub the mixture onto both sides of the pork tenderloin.
- Place the pork tenderloin in a crock pot and pour both bottles of diet root beer over the tenderloin. Cook on low for 8-10 hours.
- Remove tenderloin, drain, and tear apart.
- Place pulled tenderloin back into crock pot and cover in low sugar barbecue sauce. Cook on low for 1/2 hour to 1 hour. Serve on whole wheat thin buns.

Quick Granola bars

Ingredients

- 2 cups trail mix (fruit/nut variety)
- 2 cups oatmeal
- 1/3 cup milk chocolate chips
- 3 ripe bananas
- 1 egg
- 2 tbsp. honey
- * Add nuts, seeds, cinnamon, nutmeg, dried fruit, etc to your liking



Directions

- Pre-heat oven to 350°F. In a Large bowl combine trail mix, chocolate chips and oatmeal. In a smaller bowl mash the bananas, then add your egg and honey and mix it all together. Add the banana mixture to the trail mix and stir it all together making sure everything is evenly coated.
- Press the mixture into a greased 12 X 9-inch cake pan. Bake for 15-20 minutes or until edges are brown. Allow to cool, cut and enjoy!

Crispy edamame

Ingredients


- 1 (12 ounce) package frozen shelled edamame (green soybeans)
- 1 tablespoon olive oil
- 1/4 cup grated Parmesan cheese
- salt and pepper to taste



Directions

- Preheat the oven to 400 degrees F (200 degrees C). Place the edamame into a colander and rinse under cold water to thaw. Drain.
- Spread the edamame beans into the bottom of a 9x13 inch baking dish. Drizzle with olive oil. Sprinkle cheese over the top and season with salt and pepper.
- Bake in the preheated oven until the cheese is crispy and golden, about 15 minutes.





MYTH BUSTING.

Schedule a consultation

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- Dietitian Office phone: (313) 577-5857
- Office: Mort Harris Recreation and Fitness Center