

Making Sense of Macronutrients:

Part 2 – Protein & Fat

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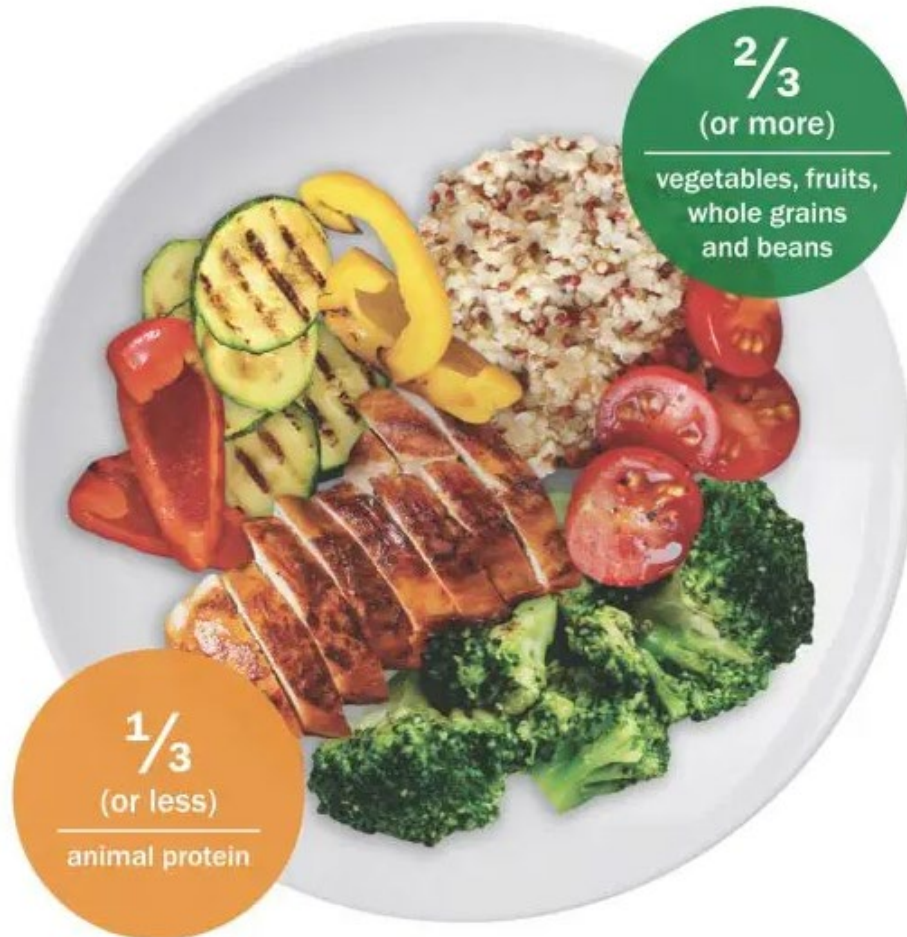
Macronutrients

- **Macronutrients** = nutritive components of food that the body needs for energy and to maintain the body's structure and systems
- Carbohydrates, protein and fat are all called macronutrients
- No healthy diet should **exclude** or **seriously restrict** any macronutrient



The New American Plate - AICR

The New American Plate



- Focus on foods rich in fiber, vitamins, and phytonutrients to protect against cancer.
- Modest 3-ounce serving of meat (fish, poultry, or red meat)
- Variety of foods
- Two kinds of vegetables
- Healthy serving of a tasty whole grain

The Plate Method

- Simple tool to make meal planning easier!
- Helps balance your nutrients
- Divide your plate into sections
 - $\frac{1}{2}$ non-starchy vegetables
 - $\frac{1}{4}$ lean protein
 - $\frac{1}{4}$ grains & starches



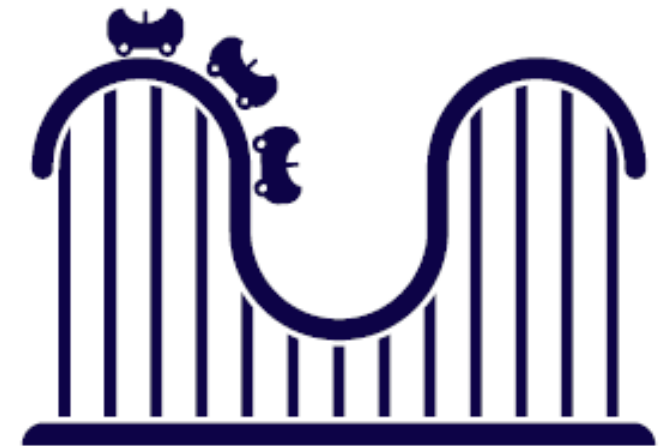
$\frac{1}{2}$ Non-Starchy Vegetables + $\frac{1}{4}$ Grains & Starches + $\frac{1}{4}$ Lean Protein
= 1 Great Plate

Carbohydrate Review

- Carbohydrates are the primary energy source for your body to function
- AICR's current recommendations include 2/3 of your plate be from complex carbohydrates
- Choose foods that contain fiber and starch
- Limit added sugars
- Strive for balanced meals that include carbohydrates, protein, and fats at each meal to balance your blood sugar!

BALANCED BLOOD SUGAR

What Blood Sugar Should NOT Look Like



What Blood Sugar Should Look Like



Protein

Protein

- Essential for range of life-sustaining functions:
 - Building & repairing cells
 - Maintaining muscles mass
 - Oxygenates red blood cells
 - Regulates hormones
 - Aids in digestion
- On the Nutrition Facts food label protein is near the bottom
- Dietary Reference Intake = protein is 10-35% of total calories

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

High Quality / Lean Proteins

Anti-inflammatory Plant-Based Choices with Phytonutrients

- 3-4 servings per week
- Serving: $\frac{1}{2}$ cup cooked

Black Beans (8gm)	Lima Beans (7gm)	Tempeh (16gm)
Butter Beans (6gm)	Pinto Beans (8gm)	Tofu (10gm)
Chickpeas (7gm) / Garbanzo Beans	Peas Green (5gm) & Black-eyed (7gm)	Split Peas (8gm) (green, yellow)
Fava Beans (6gm)	Edamame (8gm)	Seitan (31gm)
Kidney Beans (8gm)	Hummus (3-8gm)	Soybeans (8-11gm)
Lentils (all colors) (9gm)		White Beans (8gm) (cannellini, great northern, navy)



High Quality / Lean Proteins

Anti-inflammatory Protein Choices Mostly Omega-3

- 3-4 servings per week
- Serving: 3-4 ounces cooked

Bass	Mahi Mahi	Snook
Bluefish	Monkfish	Sole
Carp	Orange Roughy	Sturgeon
Catfish	Perch	Swordfish
Char	Pike	Tilapia
Cod	Pollack	Tuna
Flounder	Redfish	Trout
Grouper	Red Snapper	Walleye
Haddock	Salmon	Whitefish
Halibut	Sardines - canned in water	Sushi
Herring	Scrod	



High Quality / Lean Proteins

Other Lean Protein Sources

Veggie Burgers	Egg Whites
Chicken or Turkey Breast	Whey Protein Isolate Powder

Protein Sources to Eat Less Frequently: (Pro-Inflammatory)

Shell Fish (crab, shrimp, scallops)	Lean Red Meat (beef, pork, lamb, venison) 12-18 oz. per week. Look for cuts that have the word Round or Loin in them.
Egg Yolks: limit to 3 – 4 per week	AVOID PROCESSED MEATS: BACON, SAUSAGE, HOT DOGS, BOLOGNA , SALAMI, ETC.



Dairy and Dairy Alternatives

- Protein, Calcium, and Vitamin D: 2–3 servings per day
- Dairy foods are a source of saturated fats that can fuel inflammation. Always choose **non-fat or low fat** varieties.
- If you are lactose intolerant, choose from the calcium-fortified plant-based milks or lactose intolerant friendly milks.
- Serving sizes: 1 cup for milks/alternatives and yogurts, 1/2 cup cottage cheese, 1 oz. cheese

Skim Milk or 1%	Soy Milk, calcium fortified
Yogurt, Non-Fat Greek	Lactaid – 100% Skim (Non Fat)
Cottage Cheese, Low Fat	Almond Milk, Unsweetened, calcium fortified*
Buttermilk/Kefir, Low Fat	Oat Milk, calcium fortified*
Cheese, 2% or Low Fat	Rice Milk, calcium fortified*

*Lower Protein Sources





8 OZ. LOW
CALORIE
DRINK



1/2 CUP
FRUIT



1/2 Non-Starchy Vegetables + 1/4 Grains & Starches + 1/4 Lean Protein
= 1 Great Plate



Building Your Meal

- Fiber = 5-15 grams/meal
- Protein = 20-30 grams/meal
- Fat = 10-20 grams/meal

Grains & Starchy Vegetables	Fruit	Dairy	Non-Starchy Vegetables	Protein	Healthy Fats	Snacks
<p>One serving is 1/4 to 1 cup:</p> <p>Grains</p> <ul style="list-style-type: none"> Whole wheat flour Whole oats/oatmeal Popcorn Brown rice Whole rye Whole grain barley Whole farro Wild rice Buckwheat Millet Quinoa Sorghum <p>Starchy Vegetables</p> <ul style="list-style-type: none"> Parsnip Plantain Potato Pumpkin Acorn squash Butternut squash Green peas Corn <p>Legumes/Beans</p> <ul style="list-style-type: none"> Lentils Black beans Pinto beans 	<p>One serving is 1 small piece of whole fruit or 1/2 cup:</p> <ul style="list-style-type: none"> Apple Apricots Banana Blackberries Blueberries Cherries Fruit cocktail Grapefruit Grapes Kiwi Mango Melon Nectarine Orange Peaches Pears Pineapple Raspberries Plums Strawberries Watermelon 	<p>One serving is 1 cup:</p> <p>Milk/Yogurt</p> <ul style="list-style-type: none"> Fat-free milk Low-fat milk Plain non-fat yogurt Non-fat light yogurt Soy milk Rice milk Almond milk <p>Cheeses</p> <ul style="list-style-type: none"> Hard cheese (1 1/2 oz.) Shredded cheese (1/3 cup) Ricotta cheese (1/2 cup) Processed cheese (2 oz.) Cottage cheese (2 cups) 	<p>One serving is 1/2 cup cooked or 1 cup raw:</p> <ul style="list-style-type: none"> Asparagus Artichoke Beans (green/wax) Brussel sprouts Beets Broccoli Cabbage Carrots Cauliflower Celery Cucumber Eggplant Greens (collard, kale, mustard, spinach) Mushrooms Onions Pea pods Peppers Salad greens (romaine, arugula) Tomatoes Turnips Zucchini 	<p>One serving is 3-4 oz. of meat or seafood:</p> <ul style="list-style-type: none"> Beef Chicken Fish Ham Lamb Pork Seafood Veal <p>Meat Substitutes (check label for serving size)</p> <ul style="list-style-type: none"> Almond butter Cottage cheese Cheese Edamame Egg Egg substitute Egg whites Hummus Peanut butter Tempeh Tofu Albacore tuna Lentils Black beans Pinto beans 	<p>Check label for serving size</p> <p>Monounsaturated Fats</p> <ul style="list-style-type: none"> Avocado Canola oil Nuts (almonds, cashews) Olives Olive oil Peanut butter Peanut oil Sesame seeds <p>Polyunsaturated Fats</p> <ul style="list-style-type: none"> Corn oil Sunflower oil Walnuts Pumpkin seeds Sunflower seeds Mayonnalse Soft margarine Salad dressing <p>Omega-3 Fatty Acids</p> <ul style="list-style-type: none"> Soybean products Flaxseed oil Flaxseed Canola oil Salmon Albacore tuna Sardines 	<p>Less than 5 grams of carbs:</p> <ul style="list-style-type: none"> 15 almonds 3 celery sticks & 1 tbsp. of peanut butter 5 baby carrots 5 cherry tomatoes & 1 tbsp. of ranch dressing 1 hard-boiled egg 1/4 cup of fresh blueberries 1 cup light popcorn 2 saltine crackers 1/2 cup suga-free Jello <p>About 10-20 grams of carbs:</p> <ul style="list-style-type: none"> 1/4 cup of dried fruit & nut mix 1 cup chicken noodle soup 1 small apple or orange 3 cups light popcorn 1/3 cup hummus & 1 cup raw, fresh-cut veggies 2 rice cakes & 1 tbsp. of peanut butter <p>About 30 grams of carbs:</p> <ul style="list-style-type: none"> 6 oz. light yogurt & 3/4 cup of berries 1 English muffin & 1 tsp. low-fat margarine 3/4 cup whole grain cereal & 1/2 cup of fat free milk 1 medium banana & 1 tbsp. peanut butter

Through better meal planning, you can start living a healthier lifestyle. Above is a food list to help guide you at each meal. It is important to plan your choices and use the Plate Method to create healthy and well balanced meals. Don't forget to think about portion sizes, too. Sometimes the portion you're planning to eat may not be the same as the recommended serving size. Serving sizes are not exact and do not indicate the carb counts.

Fat

Total Fat

- When looking at the food label:
 - Typically 50-60 grams total per day
 - DRI = total 20-35% of total calories per day
- Every 1 gram of fat = 9 calories
- Total Fat includes:
 - Saturated Fat
 - *Trans* Fat
 - Unsaturated Fat
 - Monounsaturated Fat
 - Polyunsaturated Fat → Omega 3 and Omega 6
 - Cholesterol (does not contribute to any calories)

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Healthy Fats

- Fats are necessary to produce hormones, transport vitamins, and build new cells.
- Unsaturated fats (mono and polyunsaturated) have Omega 3 and Omega 6 fatty acids with anti-inflammatory properties.

Best Quality

Nuts*	Seeds*	Oils
Almonds & Almond Butter	Flaxseed	Canola Oil
Brazil Nuts	Pumpkin Seeds	Flax Oil
Cashews & Cashew Butter	Sesame Seeds	Grape Seed Oil
Chestnuts	Sunflower Seeds	Olive Oil
Hazelnuts (Filberts)		Peanut Oil
Peanuts & Peanut Butter	OTHER:	Safflower Oil
Pecans	Avocados	Sesame Oil
Pistachios	Olives	Sunflower Oil
Walnuts		

*Nuts, nut butters and seeds also have an added benefit of providing healthy lean protein



Unsaturated Fats

Polyunsaturated Fats

- Lower LDL & HDL in some people
- Omega 3 & Omega 6
- Sunflower, corn, soybean and flaxseeds oils
- Walnuts
- Sunflower Seeds and flaxseed
- Tofu and Soybeans
- Fish

Monounsaturated Fats

- Lower LDL
- Canola, olive oil and peanut oil
- Avocado
- Nuts = almonds, hazelnuts, pecans
- Peanut butter
- Olives
- Pumpkin seeds and sesame seeds

Saturated Fats

- As a general rule, no more than **10-15 grams** total a day
 - Raises LDL cholesterol more than anything else you eat
- Saturated fats are **solid** at room temperature
- Mainly found in animal sources
 - The **goal** is to choose lean meats, poultry, fish, and low-fat dairy products
- Saturated fats can also be found in coconut oil and palm oil





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What to do?

- Strive for meals & snacks to have all 3 macronutrients when possible
- Protein Dietary Reference Intake = 10-35% of total calories
 - 20-30gm of protein per meal (3 meals/day)
 - 10-15gm of protein per snack (1-2 snacks/day)
- Total Fat = typically 50-60 grams total per day
 - 10-20gm of fat per meal
 - Saturated Fat = no more than **10-15 grams** total a day
 - Avoid *Trans* Fat
- Avoid “naked carbohydrates” or only eating carbohydrates by themselves – pair them with a protein & fat
 - 25-35gm of fiber per day or
 - 5-15gm of fiber per meal

Sample Menu

Breakfast

- 1 cup fat free Greek yogurt (protein)
- 1 kiwi + ¼ cup mango (fiber)
- 1 oz chopped almonds (fiber, protein, fat)

Lunch

- Black Bean Chili (protein, fiber)
 - Made with black beans, onion, tomatoes, garlic, herbs, etc.
 - Top with avocado (fat, fiber)

Dinner

- 3-4oz salmon fillet (protein, fat)
- 1-1 ½ cup of roasted Brussel sprouts and carrots w/ 1 Tbsp. olive oil (fiber, fat)
- ½ cup wild rice (fiber)

Snack Ideas

- Hummus w/ whole wheat pita or veggies
- Small apple w/ peanut butter
- 1 cup raw veggies w/ salad dressing
- Unsalted roasted nuts + dried fruit
- Rice cake + creamy peanut butter + coconut + dried cherries
- Nut mix + cheese cubes
- String cheese or cheese stick
- Hard-boiled egg + ½ cup mixed fruit cup
- ½ cup cottage cheese + ½ cup fruit
- Beet chips + Greek yogurt mixed w/ ¼ tsp curry
- Graham crackers + Nutella + banana slices
- Guacamole + veggies

Questions?

Resources

- <https://www.aicr.org/news/creating-plant-based-meals-with-aicrs-new-american-plate/>
- <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/types-of-fat/>
- <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/monounsaturated-fats>
- <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/monounsaturated-fats>