



BPM

NUTRITION 101

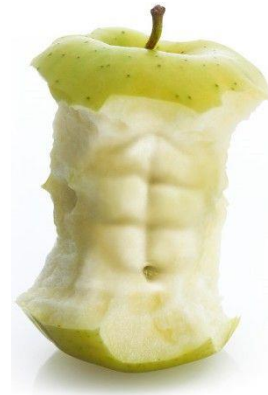


NUTRITION 101

Below you will find the nutritional basics to help you optimize your dietary needs. All information has been compiled from scholarly sources and does not represent the opinion of BPM Indoor Cycling Inc. or its representatives. Please use at your own discretion.

The Importance of Proper Nutrition

- **Nutrients** provide energy, promote growth and repair of tissues, and regulate metabolism. Nutrients can be classified into Macronutrients and Micronutrients
- Nutrition accounts for up to 80% of your gains or losses with 20% attributed to fitness
- **Impacts of proper nutrition:**
 - Disease prevention (cardiovascular disease, cancer, etc.)
 - Energy/fuel for your body
 - Regulates metabolism – the sum total of all physical and chemical processes in the body that help maintain life
 - Promotes optimal growth, development, & repair
 - Vision
 - Improves mood and cognitive function
 - **For women specifically:**
 - Can help reduce the symptoms of PMS (cramps, mood swings, etc.)
 - Can boost fertility
 - Make pregnancy and nursing easier
 - Ease symptoms of menopause
 - And, give you great hair and skin



Calories

- A calorie (or kilocalorie) is a unit of energy we use to quantify the energy value of food and human energy expenditure
- Caloric requirements are based on:
 - Resting metabolic rate (RMR) – the amount of calories you burn doing nothing
 - Activity level
- The RMR for a 30 female, 150 lbs, and 5'6" is 1470 calories
- To determine her caloric needs based on activity:
 - Sedentary x 1.2 = 1764 calories
 - Light activity x 1.375 = 2021 calories
 - Moderate x 1.55 = 2278 calories
 - Very active x 1.7 = 2500 calories(Find your RMR at keelanclemens.com)
- The general recommended caloric intake for women is 2000 calories/day (very general)
- An approximate caloric deficit of 3500 equals 1 lb of bodyweight lost
- Therefore, deficit of 500 calories/day will help you lose 1 lb/week
- Healthy weight loss is 1-2 lbs/week
- Calories vary per **macronutrient or "macro"**
 - 1 gram of protein = 4 calories
 - 1 gram of carbohydrates = 4 calories
 - 1 gram of fat = 9 calories
- But not all calories are created equally. The body reacts based on the type of food consumed, not based on the caloric value associated with it
 - Proteins and healthy fats are more filling than carbohydrates
- To change our diets, we must alter our "Macros"
- **A macronutrient is a nutrient needed in quantities over a few grams (protein, carbs, fat, and water), whereas micronutrients are needed in only a few grams (vitamins and minerals)**

Nutrition Facts	
Serving Size	
Amount Per Serving	
Calories	2000
% Daily Value*	
Total Fat	20-35%
Saturated	<10%
Sodium	1500 mg
Total Carb.	45-65%
Protein	10-35%
Not a significant source of other nutrients.	
*Percent Daily Values are based on a 2,000 calorie diet.	

Macronutrients: Carbohydrates

- **Your body's main fuel source for your brain and muscles**
- Should make-up about 45-65% of overall caloric intake
 - 900 – 1300 calories (225-325 grams)
- Recommended daily minimum for females is 130 grams/day (based on minimum for cognitive function) – this would only be 25% intake for a 2000 calorie/day diet
- Carbohydrates are broken down into glycogen and stored in your muscles and liver for future use
- So why are carbohydrates considered evil?
 - Excess gets converted to body fat if intake exceeds energy demand
 - Intake of simple sugars/low GI foods can result in diabetes

- Elevated insulin secretion signals the body to store fat
- **1 gram of glycogen stored is bound by 3 grams of water**
- **If you intake an excess in 300-400 grams stored glycogen in a day it's bound to 900 -1200 grams of water or an excess of 1200-1600 extra grams – 2.5-3.5 lbs of excess weight**

- **“Good” Carbs**

- Complex carbs (long-chain sugars)
- Low GI foods
- Low to moderate in caloric density
- Whole grains and plant-based foods
- High fiber foods (25 grams/day)
 - Aids in digestion
 - Helps reduce cholesterol (specifically LDL)
 - Helps to normalize blood glucose levels
- Slowly absorbed into the bloodstream



- **“Bad” Carbs**

- Simple sugars
- High GI foods (spikes insulin levels)
- Insulin increases the body's fat stores
- High in caloric density
- Glucose, fructose, processed foods
- Refined foods like white bread and white rice
- Quickly absorbed into the bloodstream
- Spike insulin levels

han·gry

(han-gree) adj.

a state when you are both hungry and angry; the former causing the latter.

- **Low Carb Diets (Atkins)**

PROS	CONS
Low carb usually means lower calories	Can shock your body to slow metabolism
Less water bloat (3g H ₂ O/gram glycogen)	Long bouts can result in acidosis
More protein/fat makes you feel fuller	Can cause muscle wasting
Your body uses more fat as fuel	Impairs cognitive function
Reduces high GI foods/blood sugar	Reduces your overall energy levels
Help prevent/treat Type 2 Diabetes	Causes hanger
Great if you're gluten-free	Lacks fiber/vitamins/minerals
Great for endurance athletes	Expensive to eat more protein/fat
Great for those with insulin resistance	Excessive protein intake = stomach ache
	Not good for sprinters/weight lifting
	Not ideal for vegans/vegetarians
	Can increase cholesterol/ blood pressure

Macronutrients: Protein

- Should make up 10- 35% of overall intake
- 1 gram of protein is equal to 4 calories
- **RDA is .8 grams/kg of body weight (.36 grams/pound)**
- Therefore, a 140 lb woman would need 50 grams/day (or 200 calories) – this would be 10% of daily intake for a 2000 calorie/day diet
- **Protein is an important building block for hair, skin, bone, muscle, and cartilage. It is essential for growth, development, and repair**
- Muscles contain up to 40% of the total protein in the human body
- Protein is the most abused macronutrient. Most North Americans consume 2x what they actually need
- Protein is made up of amino acids
 - 20 amino acids – 9 essential (can't be manufactured in the body – must get from food) others are nonessential (can be formed in the body)
- Complete proteins (have all 9 amino acids) vs. incomplete
- So when you're choosing proteins, you want to keep in mind that some are better than others (terms of optimizing growth, repair, etc.)
- Animal protein is considered of higher quality because it contains all essential amino acids the body requires; whereas things like nuts, seeds, beans, and legumes are incomplete because they are lacking some
- Combine incomplete proteins together to get what you need
- **Sample Proteins**
 - 8 oz. Cod = 240 calories, 52 grams of protein, 2 grams of fat
 - 8 oz. Chicken = 260 calories, 54 grams of protein, 6 grams of fat
 - 8 oz. Steak = 416 calories, 69 grams of protein, 13 grams of fat
 - 8 oz. Salmon = 420 calories, 60 grams of protein, 20 grams of fat

Macronutrients: Fat

- Should make up 20- 35% of overall intake
- 1 gram of fat is equal to 9 calories
- RDA is 30 grams/day at bare minimum – that's only 270 calories or 14% of your daily intake (not enough)
- **Fat insulates, protects your organs, absorbs certain nutrients (fat-soluble), and provides energy in low-moderate physical activity (most at 65% HRMax)**

"Good" Fats	"Bad" Fats
Unsaturated, mono and polyunsaturated	Saturated and trans fats
Omega-3 fatty acids	Animal products (meat, dairy)
Fish and seafood	Hydrogenated (manufactured oils)
Plant Oils	Clog arteries
Plant products (nuts, seeds, avocado)	High in bad (LDL) cholesterol

- **Cholesterol** is a waxy substance that comes from your liver and consuming animal products
 - 300 mg/day based on a 2000 calorie/day diet
 - Consumption of LDL can result in arteriosclerosis (build-up of plaque on the walls of the arteries)
 - HDL protects against cardiovascular disease by carrying LDL from the arteries to the liver where it is broken down
- The brain is composed of 60% fat, most of which is Omega fats
 - Omega-3 fats (ALA, DHA, EPA)
 - Linked to a reduction in heart-disease and reduces inflammation
 - 1000 mg/day or 1400 mg/day if pregnant or nursing
 - Enough found in 2 servings/fish week
 - Fish (anchovies, salmon, caviar, Mackerel) Flax seed, vegetable oil (extra virgin olive oil), eggs, milk, yogurt fortified with omega-3
- For women, it is very important to consume enough fat as it helps with hormonal processes

Macronutrients: Water

- Your body is 60% water by weight
- Women need to consume 8-12 cups (2-3 litres) per day
- **Water transports nutrients, regulates body temperature, helps with digestion, biochemical reactions, and provides a medium for other reactions**
- Water helps to stimulate muscle contraction (cramps) by transporting electrolytes
- For exercise, it is recommended to consume 500 mL 2 hour before exercise and 500 mL 15 minutes before, and replenish throughout
- The average sedentary adult loses 2.2 litres of water per day (urine, sweat, feces, respiration)
 - During high heat, sweat rates can be around 2-3 litres lost per hour
- When you are 2% dehydrated your thirst mechanism kicks in, at 4% you begin to lose cognitive function
- Thirst is commonly mistaken as hunger – stay hydrated and reduce your caloric intake
- **Cucumber water** – helps to hydrate the body from the inside out and contains Vitamin B5 which is good for treating acne



Micronutrient: Vitamins

- Needed in less than a few grams/day
- **Vitamins do not provide energy, but play a vital role in energy metabolism, some aspects of growth and development, and serve as antioxidants**
- Vitamins are essential organic molecules that cannot be synthesized in the body – must be obtained from food (ideally) or supplements (except for Vitamin D)

- If you consume a balanced diet of meat, fruits, vegetables, and dairy you probably don't need to supplement unless directed by a physician
- **Vitamin A (retinol)** boosts immune system, improves vision, and may slow skin aging
 - No need to supplement – found in carrots, cantaloupe, leafy greens, fish, dairy, eggs, and oranges
- **Vitamin B9 (folic acid)** helps to keep red blood cells healthy and guard against birth defects
 - If you are pregnant, you want to supplement in order to get 600 IU/day
- **Vitamin B12 (cobalamin)** helps with heme synthesis (iron) and the production of red and white blood cells (pernicious anemia when lacking)
 - If you are a vegetarian/vegan it is important to supplement B12 because it is only found in meat, fish, shellfish, eggs, and dairy products (some fortified breakfast cereals)
- **Vitamin D** helps with the uptake of calcium in the gut and promotes bone formation. Increases the release of serotonin (can be synthesized via sunshine on the skin)
- **Vitamin C** boosts immunity
 - 75 mg/day
 - About 70 mg in 1 orange

Micronutrient: Minerals

- Needed in less than a few grams
- **Minerals are inorganic substances that make up <4% of body weight and aid in metabolic regular and growth and development**
- **Iron** helps with the transport of oxygen as hemoglobin and myoglobin, as well as promotes immune function
 - Women should get 18 mg/day (red meats, dark leafy greens, dried legumes, nuts)
 - Women who are pregnant should get 27 mg/day
 - Low iron results in anemia, fatigue, and increased infections
- **Sodium** helps with nerve impulse generation, muscle contraction
 - Low sodium levels can result in dizziness, coma, cramps, and nausea
 - Excess sodium causes hypertension (high blood pressure) and nausea
 - Recommended daily intake is 1500 mg
 - 8 strips of bacon has over 1200 mg
- **Potassium** helps with nerve impulse generation, muscle contraction, and acid base balance
 - Low potassium levels can result in cramps, loss of appetite, and irregular heart beat (arrhythmia)
 - Excess can result in cardiac failure
 - Recommended daily intake is 4700 mg/day
 - 1 avocado contains 1000 mg, 1 cup spinach 840 mg, 1 cup coconut water contains 600 mg, and 1 banana contains about 400 mg
- **Calcium** helps with the formation of bone and teeth, muscle contraction, and nerve impulse transmission

- Low calcium levels results in osteoporosis, brittle bones, impaired muscle contraction and cramps
- Recommended daily intake is 1000 mg
- Found in dairy, egg yolk, beans and peas, dark leafy vegetables, and cauliflower

Alcohol

- [Video](#) – What does 100 calories look like
- Alcohol is considered a non-nutrient (empty calories)
- 1 gram is equal to 7 empty calories
- Excessive consumption is one of the greatest health risks as it suppresses a wide range of immune functions and increases risk of disease
- 1 glass of RED wine or 1 beer/day can have health benefits (polyphenols), however the increased risk of developing breast cancer from increased alcohol intake offsets that benefit

Supplementation

- **Protein Powder**
 - Only if we are not meeting our DRI (.36 g/lb)
 - Good for on-the-go (busy lifestyles). Think about your macro ratio's – look for that in a protein powder. Yes, fat and carbs are ok!
 - Informed choice (do not contain banned or harmful substances)
 1. Iron Vegan (Gluten Free and Organic)
 2. Athletes Food (Good balance of macros)
- **BCAA's**
 - Branch Chain Amino-Acids
 - 3 Amino Acids, main ones used by the body for muscle growth, recovery, tissue repair, etc.
 - Find one that has no filler, just BCAA's
- **Omega-3**
 - 1000mg – 1400 mg/day (pregnant or nursing)
- **Electrolytes**
 - Sodium – no need to supplement (unless directed to by a physician)
 - Potassium (don't over-do it) – bananas are good!
 - Sports drink during exercise, cut with water
- **Pro-biotics**
 - Take them! They aid in digestion, gut health, reduce inflammation, and aid in recovery from antibiotics
- **Pre-workout & fat burners**
 - Purpose is to increase blood flow, heart rate, wake you up, and give you a quick explosive boost to start your workout
 - Not a permanent solution. Can create mood swings and dependence. In addition, your body already has these naturally occurring so half the time it “expels” it from the body
 - 4 main ingredients
 1. Beta-Alanine – vasodilator (Amino Acid) – tingling

2. Creatine Phosphate – converted to ATP (energy source used in short burst activity)
 3. Arginine – vasodilator, releases insulin
 4. Caffeine – wakefulness
- **Caffeine**
 - The most widely used drug in North America
 - Results in elevated epinephrine (adrenaline) in the body
 - Diuretic (1 mg = 10 ml of water excreted!)
 - 1 cup of coffee = 100 mg caffeine = 1000 ml (1 Litre of water) expelled

Recommendations

1. Want to lose weight? Reduce carbs and create a deficit!
 - Workout to burn calories
 - Eat less (remember 500 calories/day)
 - Shoot for a 40/30/30 diet from healthy sources
2. Food prep!
 - Convenience is key, if it's quick and easy to eat, you'll eat it
 - Prevents eating out and consuming processed/refined foods
3. Eat at the right time of day (morning vs. night)
 - I always use the analogy of a car, you put fuel in the tank so you can power the car, but when you fuel it up at night then just park it that fuel just sits there. It's the same with calories, except those calories get stored as fat
 - Timing is everything. **Eat evenly spaced meals every 2-3 hours throughout the day**
 - Don't eat right before bed if you can avoid it. Eat the bulk of your meals in the first part of the day so you can break it down and use it as energy throughout the day
4. Eat clean and healthy macros
 - Complex carbs that are high in fiber (plant based)
 - Protein low in calories and unhealthy fats
 - "Good" fats
5. Drink lots of water
 - 2+ liters a day, more if you're exercising, and even more if having caffeine
6. Avoid alcohol and caffeine
 - Keeps water in
 - Gives the immune system a fighting chance
 - Reduces empty calories
 - Reduces nervousness, anxiety, insomnia, mood swings, GI distress
7. Set a caloric goal, adjust your macros, and track it!
 - My Fitness Pal (or the like)
 - Set daily caloric goals
 - Set % of macros
 - Input all the food you want to eat each meal
 - Adjust

Recipes

Protein Pancakes (with powder)

- 1 cup oats (blended to powder) – 360 calories, 60 carbs, 12 protein, 6 fat
- ½ cup egg whites - 30 calories, 0 carbs, 7 protein, 0 fat
- ½ cup soy milk – 40 calories, 2 carbs ,4 protein, 2 fat
- 1 scoop (approx. 3 grams) protein powder – 110 calories, 3 carbs, 20 protein, 1.5 fat

=540 calories, 65g carbs, 43g protein, 9.5g fat

Directions: Preheat a pan to medium heat. Blend dry ingredients until oats have a powder consistency, then add wet ingredients and blend evenly. Pour mixture onto pan and flip once sides start to solidify.

Overnight Oats (just add fruit!)

- ½ cup oats – 180 calories, 30 carbs, 6 protein, 3 fat
- ¾ cup soy milk – 60 calories, 3 carbs, 6 protein, 3 fat
- 1 tbsp. chia seeds – 53 calories, 5 carbs, 1.5 protein, 3 fat
- ¼ cup blueberries – 22 calories, 5 carbs, 0 protein, 0 fat

=315 calories, 43g carbs, 13.5g protein, 9g fat

Directions: Combine ingredients in a mason jar or sealed Tupper wear up to 3 nights before consuming. Put in the fridge until eaten. For best results, leave oats overnight and eat the next day. The mixture will keep for up to 6 days.

High Carb Breakfast vs. Low Carb Breakfast

High Carb	Low Carb
2 slices WW toast <ul style="list-style-type: none"> • 150 calories • 26 grams carbohydrates • 6 grams protein • 2 grams fat 	2 eggs <ul style="list-style-type: none"> • 140 calories • 0 grams carbohydrates • 12 grams protein • 10 grams fat
3 tbsp. strawberry jam <ul style="list-style-type: none"> • 150 calories • 39 grams carbohydrates • 0 grams protein • 0 grams fat 	1 cup egg whites <ul style="list-style-type: none"> • 60 calories • 0 grams carbohydrates • 14 grams protein • 0 grams fat
=300 calories =65 grams carbs =6 grams protein =2 grams fat	½ avocado <ul style="list-style-type: none"> • 116 calories • 6 grams carbohydrates • 2 grams protein • 11 grams fat
	=316 calories =6 grams carbs =28 grams protein =21 grams fat