



Implementing Important Practices in Teenage Swimmers



Why is Nutrition Important?

“Nutrition is an important part of sport performance for young athletes, in addition to allowing for optimal growth and development. Macronutrients, micronutrients and fluids in the proper amounts are essential to provide energy for growth and activity. To optimize performance, young athletes need to learn what, when and how to eat and drink before, during and after activity”. (Canadian Paediatric Society (2013))

- What do we see in our work with teenage swimmers?



American Teenage Nutrition

- Breakfast is Small & Protein Lacking
 - Between AM practice and school, not enough calories are consumed - especially protein
- “I Saw on Tiktok...”
 - Purchasing supplements and following nutrition advice from influencers
- Not Eating During School
 - Small lunches and huge gaps without food intake
- Not Drinking During School
 - Minimum liquid intake to avoid bathroom trips, no water bottle in class



American Teenage Nutrition

- Improper Use of Supplementation
 - Following supplement use of others, not using sport-safe products, relying on supplements for nutrition
- TOO MUCH SUGAR!!
 - Refined sugar is everywhere in the diet
- Too Much Caffeine
 - Celsius, Starbucks, energy drinks used for energy
- Restricting Calories & Not Eating Before AM Practice
 - Not eating enough food to hold a certain physique or for time limitations



What We See

What We Should See



So, What Should I Do?

We know how important nutrition is to athletes, but we see bad choices and lack of education in parents...so how do we implement nutritional changes in our team?





Education is KEY

As a former college coach, I saw most athletes lacked the basic knowledge of nutrition to fuel their bodies properly. By the time they arrived on campus, we had to teach the basics that most countries instill in kids at a very young age

Teaching how to eat good fuel without compromising taste and convenience

Educating on how and when to eating during the day

Food = Fuel



Demanding physical activity without fuel results in “bonking”, dizziness, lightheadedness, fatigue, and over time physical exhaustion.



Where to Start

- Food is Fuel
 - Pound home this concept whenever possible.
 - If we put garbage in our bodies, we get garbage out of our bodies
- Implementation Ideas
 - Display healthy fueling habits in yourself on deck.
 - Make fueling part of the common conversation on deck
 - Change food access that you can control (concessions, team snacks & meals, parent run team breakfasts)
 - Praise healthy choices you see

Pre-Workout Fuel (AM practice)



“The main goal of a pre-event/workout meal is to replenish glycogen, the short-term storage form of carbohydrate. This supplies immediate energy needs and is crucial for morning workouts, as the liver is glycogen depleted from fueling the nervous system during sleep.” (Murphy 2017)



Breakfast = Fuel for the Workout

Good Carb Options - Good Bread, Good Bagel, Nut Butter, Granola, Fruit, Dried Fruit, PB &J, Bar + Fruit (Core Bar, Lara Bar), Carb Hydration Drink (Skratch Labs), Oatmeal

What We See - Not Eating, Packaged Muffins, Nutrigrain Bar, Quaker Oats Chewy Bar, Fruit Cups, Poptarts

Carb-Heavy Pre-Workout Ideas



150 Calories, 21g Carb,
2g Fiber, 2g Protein



200 Calories, 27g Carb,
3g Fiber, 4g Protein



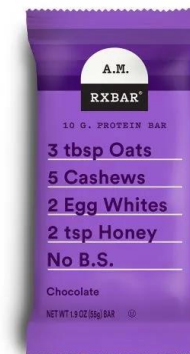
110 Calories, 28g Carb,
3g Fiber, 1g Protein



80 Calories, 20g Carb,
1g Fiber, 0g Protein



250 Calories, 49g Carb,
3g Fiber, 11g Protein



230 Calories, 28g Carb,
4g Fiber, 10g Protein



110 Calories, 26g Carb,
1g Fiber, 2g Protein

PB Banana Roll Up

SERVES 1

INGREDIENTS

1 High Fiber/Low Carb Tortilla

2 TBSP Natural Peanut Butter

1 Medium Banana

1 tsp Dark Chocolate Chips

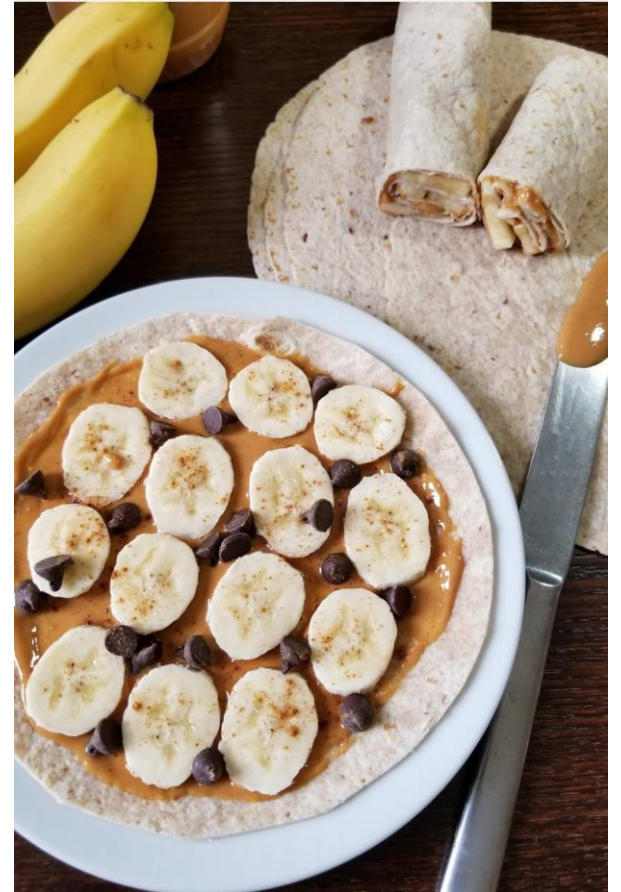
Dash Cinnamon

DIRECTIONS

1. With a knife, spread peanut butter evenly on tortilla.
2. Using same knife, thinly slice banana and place on top of peanut butter distributing evenly. Sprinkle chocolate chips and cinnamon evenly over tortilla.
3. Roll tortilla and pinch on end to secure.

Recipe Notes:

Natural peanut butter can be substituted with any natural nut butter of choice.



Overnight Oats

Ingredients:

- 1/2 cup old-fashioned rolled oats
- 1/2 cup unsweetened almond milk
- 1/2 cup chopped strawberries + more for serving
- 1/4 cup plain Greek yogurt
- 1 teaspoon maple syrup or honey
- 1/2 teaspoon almond extract
- 1/2 teaspoon vanilla extract
- pinch of sea salt

Directions:

1. Place all ingredients in a container and stir until well combined. Seal with a lid and place in the fridge overnight (or at least a couple hours).
2. Bring out of the fridge in the morning and stir. You'll notice that the oats soak up a lot of the liquid so you may want to add a little more almond milk before serving. Top oats with additional chopped strawberries and serve.
3. Overnight oats will keep for up to 5 days in the fridge in a sealed container.



Post-Workout Breakfast (AM practice)



Replenish with carbs, proteins, and healthy fats after morning workout.

Eating After Morning Practice

Morning Deficit

- 400-600 Calories - Sleep Deficit
- 500-800+ Calories - 1.5 Hour Workout Deficit

Starting the School Day 900-1400+ Calories in Debt

Swimmers **NEED** to get out of Debt!!

- Breakfast is the most important meal of the day



What's an Ideal Breakfast?

Protein

- Eggs with Spinach
- Nitrate & Nitrite Free Sausage or Bacon

Carbs

- Oatmeal
- Bread/Toast
- Granola/Cereal
- Bagel
- Fruit/Veggies

Fat

- Nut Milk
- Avocado
- Eggs
- Nut Butter



Convenient Clean Breakfast Ideas



Siggi's
19g Protein



RX Oats
12g Protein



Range Meal Bar
19g Protein



Orgain Shake
20g Protein



Magic Spoon Cereal
13g Protein



RX Cereal
11g Protein



Three Wishes Cereal
8g Protein

3 Minute Avocado Egg Toast

Ingredients

- 1-2 Eggs
- 1-2 Slices Bread
- ½ Avocado
- Salt & Pepper/Garlic Salt to Taste

Directions

- Put toast in toaster
- Crack eggs into microwave safe bowl, add salt, pepper, garlic salt to taste, beat with fork - microwave on high for 1-1.5 minutes
- Place toast on plate, top with egg, scoop avocado on top and spread evenly.

Additional Toppings of Choice

- Cheese, Applegate Farms Bacon or Sausage Patty



School Day Fueling



Snack consistently throughout the day - making sure not to neglect protein.

Eating During School - Easy Ideas



150 Calories, 21g Carb,
2g Fiber, 2g Protein



90 Calories, 0g Carb,
0g Fiber, 9g Protein



210 Calories, 11g Carb,
3g Fiber, 5g Protein



110 Calories, 11g Carb,
3g Fiber, 3g Protein



100 Calories, 12g Carb,
2g Fiber, 6g Protein



90 Calories, 0g Carb,
0g Fiber, 16g Protein



170 Calories, 10g Carb,
2g Fiber, 4g Protein

Liquid Calories During School - Easy Ideas



150 Calories, 9g Carb,
1g Fiber, 20g Protein



20 Calories, 4g Carb,
0g Fiber, 0g Protein



150 Calories, 8g Carb,
3g Fiber, 26g Protein



90 Calories, 0g Carb,
0g Fiber, 20g Protein



50 Calories, 6g Carb,
2g Fiber, 1g Protein



170 Calories, 11g Carb,
3g Fiber, 20g Protein



80 Calories, 3g Carb,
3g Fiber, 10g Protein

B6 Trail Mix



B6 TRAIL MIX

THE SWEET AND SALTY MIXTURE OF THIS SNACK WILL HAVE YOU CRAVING MORE WHILE YOU FEED YOUR BODY NATURAL B6 DERIVED FROM FOOD. YOU'LL WANT TO KEEP THIS ON HAND FOR A QUICK AND EASY SNACK!

Ingredients:

- 1 Cup Peanuts
- 1 Cup Almonds
- 1/2 Cup Dried Fruit
- 3 TBSP Pumpkin Seeds
- 3 TBSP Sunflower Seeds
- 1/2 Cup Pistachios
- 1/2 Cup Dark Chocolate Chips

Directions:

1. Combine all ingredients into a container with an airtight lid.

Protein Balls

Ingredients

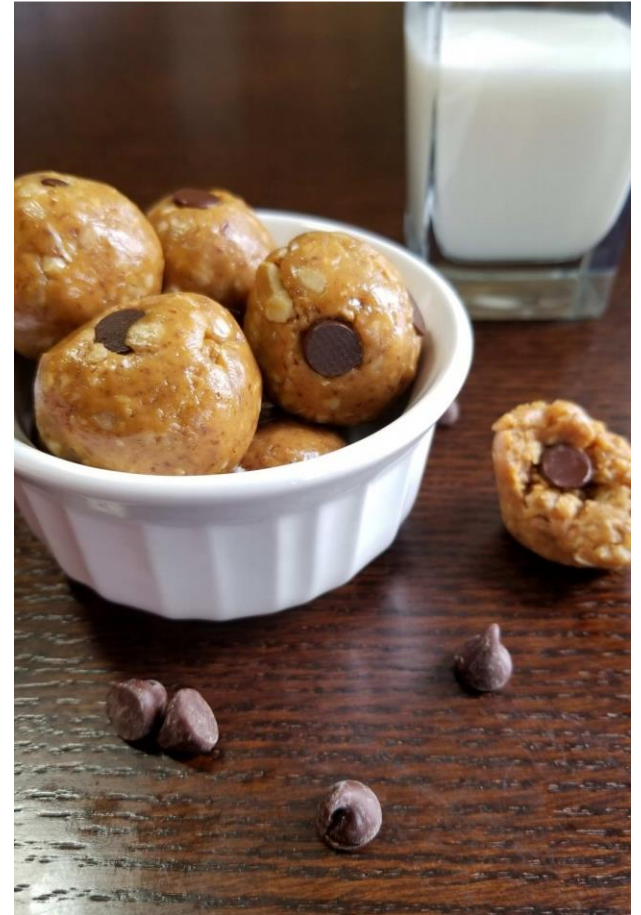
1 Cup Natural Peanut Butter (Sub Almond Butter or Sun Butter for Peanut Allergy)
1/4 to 1/3 Cup Honey
3/4 Cup Rolled Oats
1/2 Cup Unsweetened Shredded Coconut
1/8 Cup Milled Flax Seed
1/8 Cup Chopped Nuts of Choice
1 1/2 tsp Vanilla Extract
1 tsp Cinnamon
Pinch Sea Salt
1/3 Cup Dark Chocolate Chips (sub with Enjoy Life Chips for a dairy free alternative)

Directions

1. In a large mixing bowl, add all ingredients except chocolate chips. Mix until well combined.
2. If dough is too sticky, add more dry ingredients. If dough is too dry, add more peanut butter.
3. Add in chocolate chips and mix until well combined. Dough should hold together like playdough.
4. Using approximately 1-2 TBSP of dough each, roll into balls.
5. Place balls in airtight container storing in refrigerator or freezer.

Additional Ingredients of Choice

Pumpkin
Protein Powder



Hydration



“It is important to restore hydration status before the next exercise period. Rehydration will be more effective when sodium is included with the fluid and food consumed during recovery-especially in hot/humid conditions”. (Murphy 2017)

Hydration Rules

Before Exercise

- Aim for 17 to 20 ounces of water two to three hours before workout.
- 20 to 30 minutes before workout, drink an additional 8 ounces for optimal hydration

Replenishing fluid levels improves muscle flexibility, builds strength, and prevents muscle soreness

Rule #1 of Hydration

- Drink a bare minimum number of ounces of non-caffeinated liquid daily (half of body weight in oz)
- Add 20+ ounces to the total as an athlete



Post-Workout Hydration

"The data from this study showed high prevalence of hypohydration in adolescent swimmers in the morning and leading up to practice, as indicated from their concentrated urine. Our findings indicated that post-swimming urinary hydration markers may not accurately reflect hydration state in swimmers.

This should be made apparent to coaches and trainers monitoring the hydration state of swimmers through urinary markers. Because many athletes are using urine color as a quick and easy estimate of hydration, they should be aware that swimming could affect urine concentration and color independently of their hydration state. Changes in body weight should be used in swimmers for assessing water loss during practice". (Journal of Strength and Conditioning Research 2016)

[Link to Full Study in Journal of Strength & Conditioning](#)

Post-Workout (30 Minute) Fuel



“Taking in protein after a workout provides the amino acid building blocks needed to repair muscle fibers that get damaged and catabolized during exercise, and to promote the development of new muscle tissue.” (Murphy 2017)

“To maximize muscle glycogen replacement, athletes should consume a carbohydrate-rich snack within this 30-minute window”. (Murphy 2017)

30 Minute Magic Window Ideas



Supplements



Baseline nutrition supplementation can begin at any age.
Performance based nutrition should not begin before age 16.



Sport Safety



Make sure supplements are third party tested and approved.

[Link to Check for NSF Certification](#)

Trusted Brands





What Can We Do to Help Your Team?

How We Can Help

- Team Nutrition Workshops
- 12 Week Genetic Reboot Program (team discounts)



FOLATE

SLIGHTLY INCREASED FOLATE REQUIREMENTS

Vitamin B9 – Folate
Folate refers to both the natural folates found in food and to folic acid, the synthetic form found in fortified foods and supplements. Folate is essential for brain development and nerve function. It helps control levels of homocysteine in your blood, an amino acid that may be associated with heart disease. Also, an inadequate folate status during early pregnancy increases the risk of certain birth defects.

GOOD FOOD SOURCES OF FOLATE

Food	Quantity	Calories	% Daily Value
Lentils	1 cup	230	90
Pinto beans	1 cup	245	74
Garbanzo beans	1 cup	269	71
Asparagus	1 cup	40	67
Spinach	1 cup	41	66
Black beans	1 cup	277	64
Avocados	1 fruit	322	41
Turnip greens	1 cup	29	42
Broccoli	1 cup	55	42
Beets	1 cup	75	34

THE GENE WE TESTED
A common variant in the *MTHFR* gene has been associated with lowered folate and elevated homocysteine levels in the blood. The *MTHFR* gene codes for methylenetetrahydrofolate reductase, an enzyme that activates folate (or folic acid) by adding a methyl group to it. Activated folate goes on to transfer its methyl group to other nutrients and substances, essential to form neurotransmitters, create immune cells, process hormones, produce energy and detoxify chemicals. If you inherited two copies of the 66 gene, you should have normal folate metabolism.

YOUR PERSONALIZED GUIDANCE
You have a version of the *MTHFR* gene which results in slightly reduced folate metabolism. Dietary folate has a greater impact on your homocysteine and activated folate levels. If you eat a sensible diet, your levels are likely to be in the normal range. If you do not include folate-rich foods in your diet, your activated folate levels are more prone to begin falling.

Increase folate in your diet by consuming more beans, lentils, spinach, asparagus, and avocados. Supplementing with activated methyl-folate will be more effective than folic acid. Since many of the processes in folate metabolism also require vitamins B6 and B12, ensure adequate amounts of these in your diet to maximize the absorption and metabolism of folate.

Recommended daily intake of folate:
Males over 13 years: 400 mcg
Females over 13 years: 400-600 mcg
Pregnancy, all ages: 400-600 mcg
Breastfeeding females, all ages: 500 mcg

YOU WILL BENEFIT FROM EATING MORE FOODS HIGH IN FOLATE, BECAUSE YOU HAVE SLIGHTLY REDUCED FOLATE METABOLISM.

RECOVERY

SLOW RECOVERY

Delayed Onset Muscle Soreness
Delayed onset muscle soreness (DOMS) occurs 12-72 hours after you start a new exercise or increase the intensity, resistance, frequency or duration of your workout. It is important to manage DOMS to receive maximum benefit from your training and minimize fatigue and risk of injury. This soreness is different than muscle pain from an injury which develops during or right after an exercise. Training sore muscles does not impede recovery. If done properly, training can speed up recovery from DOMS by shutting blood to recovering muscle tissue.

THE GENE WE TESTED
Substitutions on the *SLC22A9* gene are associated with the level of susceptibility to DOMS and also with the body's zinc stores and glucose and insulin levels. The alternate (T) version of the gene offers some protection against DOMS.

YOU ARE MORE SUSCEPTIBLE TO DELAYED ONSET MUSCLE SORENESS.

Don't let soreness keep you from training; take extra effort to precondition your muscles before starting a new training regimen, stretch, and use a foam roller more frequently to lengthen muscles and break up knots.

KNOW THE DIFFERENCE BETWEEN SORENESS AND PAIN DUE TO INJURY

Soreness	Pain
Tired or burning feeling during exercise and dull ache or tightness at rest	Sharp pain at rest or during exercise
Worsens with sitting still	Worsens with continued activity
Slight discomfort at routine everyday activities	Everyday activity is disturbed due to excessive discomfort or pain
Felt in muscles	Felt in muscles or joints
Felt most intense 1-2 days after exercise, subsides after 2-3 days	Pain starts during exercise or up until a day after and may persist if left untreated
Improves with stretching and active rest	Improves with rest and applying ice to affected area

YOUR PERSONALIZED GUIDANCE
As a result of genetics, you are more likely to experience DOMS after you increase the intensity and/or duration of your workouts. This can be averse to strength training, resulting in decreased motivation, especially for novices.

The repeated four effort is very effective in minimizing or preventing DOMS. This is an adaptation whereby a single bout of exercise protects against muscle damage from subsequent bouts of activity by preconditioning muscles, even weeks in advance. It can begin by utilizing low weights or even just your body weight.

Regularly stretch and use a foam roller to lengthen muscles and break up knots.

Take active rest after hard workouts. Low intensity cardio will reduce lactate levels, improve aerobic capacity and speed up recovery.

Many other ways to deal with DOMS include avoiding training in high heat environments, staying hydrated, acupuncture, varying workout activities, and the use of topical amino acids and dietary supplements containing branched chain amino acids, glutamine, caffeine, turmeric and arsauroides.

DIETARY FATS

MEDIUM SENSITIVITY TO DIETARY FATS

It's not just the amount of fat you eat - the type of fat plays a more significant role.
Fats are essential nutrients that provide energy and are required for many physiological functions. Genetics play a significant role in how your body uses fats, and where excess dietary fat is likely to be stored for use later. Not all fats are the same- some fats are better for your health than others. Genetic factors also contribute to the extent of harm or benefit derived from consuming different types of fat.

It is important to pay attention to your proper ratio of different types of dietary fats. Eat more foods with olive oil and less soybean and sunflower oils.

YOUR DAILY FAT REQUIREMENTS

YOUR PERSONALIZED GUIDANCE
Reduce total fat and try to limit saturated fat to 7% or less of total calories. Replace saturated fat with MUFAs - the majority of fats in your diet should be MUFAs. Olive oil, avocados, hazelnuts and almonds are high in MUFAs.

Avoid margarine and any solid form of vegetable oil.
Check ingredients to avoid foods containing hydrogenated or partially hydrogenated vegetable oils (possible sources of trans fats). It's better to use real butter or ghee (in moderation). Coconut oil is even better when you need a solid fat for cooking - it is high in lauric acid, a saturated fat with many health benefits. Use a variety of nut butter (in moderation) for spreads.

Use extra virgin olive oil for salad dressing and light cooking - it is high in MUFA, health-protective polyphenols, and antioxidants with potent anti-inflammatory and anti-aging benefits. Other healthy choices include walnut, flax and avocado oils. Avoid dressings made with corn, soybean, safflower or sunflower oil.

Increase intake of omega-3 fats to counter inflammation from omega-6 fats. Eat more fish, walnuts, flaxseeds and chia seeds. Supplement omega-3 fats with fish oil. Limit corn and soybean oil because they are very high in omega-6 fats. Limit fried foods and processed foods - high amounts of omega-6 fats and possibly trans fats.

Check ingredients of food labels claiming "no saturated fat" or "reduced fat" - replacing saturated fat with sugar and hydrogenated vegetable oils will increase your risk for obesity and type II diabetes.

Reduce saturated fat, omega-6 PUFAs and total fat
Increase omega-3 PUFAs and MUFAs
Ideal ratio of omega-6 to omega-3 is 4:1 or less

Carbs & Proteins (65-75%)
MUFAs up to 20%
Saturated Fats < 7%
PUFAs = 5-8%
Omega-6 = 4-6%
Omega-3 = 1-2%

How We Can Help

- Food Sensitivity Testing (team discounts)



IgG 96								
ALMOND	11	NORMAL	0 score	LETTUCE	8	NORMAL	0 score	01
APPLE	27	ABNORMAL	1 score	LOBSTER	7	NORMAL	0 score	01
ASPARAGUS	19	ABNORMAL	1 score	MALT	4	NORMAL	0 score	01
AVOCADO	13	NORMAL	0 score	MILK, COWS	32	ABNORMAL	1 score	01
BANANA	5	NORMAL	0 score	MUSHROOM	13	NORMAL	0 score	01
BARLEY	20	ABNORMAL	1 score	MUSTARD	7	NORMAL	0 score	01
BASIL	4	NORMAL	0 score	OATS	52	ABNORMAL	1 score	01
BAY LEAF	41	ABNORMAL	1 score	OLIVE, GREEN	5	NORMAL	0 score	01
BEAN, GREEN	3	NORMAL	0 score	ONION	5	NORMAL	0 score	01
BEAN, LIMA	7	NORMAL	0 score	ORANGE	28	ABNORMAL	1 score	01
BEEF	2	NORMAL	0 score	OREGANO	14	NORMAL	0 score	01
BLUEBERRY	9	NORMAL	0 score	PEA, GREEN	28	ABNORMAL	1 score	01
BRAN	5	NORMAL	0 score	PEACH	2	NORMAL	0 score	01
BROCCOLI	6	NORMAL	0 score	PEANUT	6	NORMAL	0 score	01
CABBAGE	7	NORMAL	0 score	PEAR	5	NORMAL	0 score	01
CANTALOUPE	13	NORMAL	0 score	PEPPER, BELL	30	ABNORMAL	1 score	01
CARROT	20	ABNORMAL	1 score	PEPPER, BLACK	3	NORMAL	0 score	01
CASHEW	35	ABNORMAL	1 score	PINEAPPLE	19	ABNORMAL	1 score	01
CAULIFLOWER	7	NORMAL	0 score	PORK	1	NORMAL	0 score	01
CELERY	8	NORMAL	0 score	POTATO, SWEET	12	NORMAL	0 score	01
CHEESE, CHEDDAR	2	NORMAL	0 score	POTATO, WHITE	30	ABNORMAL	1 score	01
CHEESE, COTTAGE	3	NORMAL	0 score	PRAWN	2	NORMAL	0 score	01
CHEESE, MOZZARELLA	11	NORMAL	0 score	RICE, BROWN	3	NORMAL	0 score	01
CHIA SEED	4	NORMAL	0 score	RYE	23	ABNORMAL	1 score	01
CHICKEN	32	ABNORMAL	1 score	SAFFLOWER	11	NORMAL	0 score	01
CINNAMON	106	ABNORMAL	2 score	SALMON	11	NORMAL	0 score	01
CLAM	6	NORMAL	0 score	SCALLOP	4	NORMAL	0 score	01
COCOA	21	ABNORMAL	1 score	SESAME	6	NORMAL	0 score	01
COCONUT	4	NORMAL	0 score	SOLE	7	NORMAL	0 score	01
CODFISH	12	NORMAL	0 score	SOYBEAN	17	NORMAL	0 score	01
COFFEE	17	NORMAL	0 score	SPINACH	13	NORMAL	0 score	01
COLA	5	NORMAL	0 score	SQUASH	12	NORMAL	0 score	01
CORN	1	NORMAL	0 score	STRAWBERRY	8	NORMAL	0 score	01
CRAB	5	NORMAL	0 score	SUNFLOWER	9	NORMAL	0 score	01
CUCUMBER	8	NORMAL	0 score	SWORDFISH	3	NORMAL	0 score	01
DILL	8	NORMAL	0 score	TARRAGON	4	NORMAL	0 score	01
EGG WHITE	38	ABNORMAL	1 score	TEA, BLACK	15	NORMAL	0 score	01
EGG YOLK	30	ABNORMAL	1 score	TOMATO	14	NORMAL	0 score	01
EGGPLANT	21	ABNORMAL	1 score	TUNA	11	NORMAL	0 score	01
GARLIC	29	ABNORMAL	1 score	TURKEY	17	NORMAL	0 score	01
GINGER	23	ABNORMAL	1 score	WALNUT, BLACK	8	NORMAL	0 score	01
GLUTEN	4	NORMAL	0 score	WATERMELON	12	NORMAL	0 score	01
GRAPE	4	NORMAL	0 score	WHEAT	34	ABNORMAL	1 score	01
GRAPEFRUIT	26	ABNORMAL	1 score	YEAST, BAKERS	12	NORMAL	0 score	01
				YEAST, BREWERS	15	NORMAL	0 score	01
				YOGURT	10	NORMAL	0 score	01



Team Talk Signup ASCA Discount

- Genetic Reboot Standard Pricing ~~\$699~~ **\$475**
- Food Sensitivity Standard Pricing ~~\$259~~ **\$200**

Must grab a team talk spot by Friday Sept 16th for ASCA pricing discount.



Team Talk Signup ASCA Discount





Free Resources

Beine Wellness Building Site

- [Beinewellnessbuilding.net](https://beinewellnessbuilding.net)
- [Blog](#)

14 Day Smoothie Challenge

- <https://beinewellnessbuilding.net/freebie-optin-short-form/>

5 Clean Eating Hacks

- <https://beinewellnessbuilding.net/clean-eating-hacks/>

Facebook Page Community

- [Beine Wellness Building](#)

Instagram

- [@ericabeine](#)





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Questions

What Do You Want to Know?