



# Plate for your Performance



Eating to reach your potential



# My Role as an RD

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- 21 years experience as an RD but also as a mom and swim mom
- Evidence-based nutrition
- Abide by Academy of Nutrition and Dietetics/CDR ethics and American Academy of Pediatrics (AAP)
- My Hx: NICU, Nutrition Support, WIC, General Medicine; Pediatrics and the athlete

# Objectives

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- Know pre-training and recovery snacks and functions
- How to measure your fluid needs for training
- Adjust intake for variety of levels of training
- Know fluids to drink and avoid when training
- How to fuel for 2-a-day practices
- Know types of Carbohydrates and when to use each and timing of nutrition

# Getting the Edge on your competition

Get Fueled... Get Fit...Get Fast...



Training

Discipline

Goals

Competition

Mindset

Motivation



Nutrition

# What you need to Go, Grow and Glow

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- **Macronutrients**
  - Carbohydrates- **Your FUEL...**(stored in muscle and liver as glycogen); Most efficient for brain muscle and nerves
  - Protein- **Your Building blocks...**(to repair and rebuild your tissues)
  - Fat- padding around organs, aids brain/neuron and muscular functions (Cell functions)
- **Micronutrients**- supports building, repair and maintenance
  - Vitamins (Calcium) , B-Vitamins
  - Minerals (Iron)
- **Fluids**- regulates temperature, transport system
  - Water

# Fueling Requirements

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- Energy Needs for swimmers are very high
  - Carbohydrates need to be high (60%)
  - Healthy sources of Protein (20-25%)
  - 3 meals and 2-3 snacks a day
- Hydration is key for performance
  - Starts the night before
  - Drink while in school- carry a 32 oz bottle of water and refill in the day
  - Drink while in transit
  - Drink between swim sets (every 20 min); include electrolytes
  - Check your fluid loss and go from there

# Complex vs Simple Carbohydrates (CHO)

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## Simple CHO

Broken down and absorbed quickly, quick bursts of energy- 2 types

- Great for short training sessions
- Morning pre-workout snack and recovery
- 1-2 sugar molecules- any of the -oses

*"Added sugars"* are Simple CHO-

I.e. candies , sodas- lack vitamins, minerals and fiber

*Natural sugars* are also Simple CHO-

I.e. Fruits, milk, milk products, sports drinks

## Complex CHO

Provides a slow, constant energy supply

- Great for after trainings (breakfast and dinner)
- Eat at lunch at school and when you have 4 hours before a swim.
- Made up of multiple sugar molecules and usually contains fiber

Examples:

Brown rice, whole grain breads and pastas, oats, potatoes, sweet potatoes, beans/legumes

# Nutrition Before Training

Pre Training Snack includes: CHO, little fat, protein, fluids

Helps focus and keeps you engaged, prevents hunger, energizes

| Under 30 minutes                                                                                                                                                       | 30-60 minutes before<br>(30-50 gm CHO, <10g protein, <5 g fat)                                                                                                                                                         | 1-2 hours before<br>(50-100g CHO, 15-20 g Pro, 5-10 g fat)                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>Any fruit (fresh, dried, canned)</li><li>granola bar (&lt;5 g fat)</li><li>half a bagel</li><li>dry cereals, crackers.</li></ul> | <ul style="list-style-type: none"><li>Fruit smoothie</li><li>low fat yogurt with cereal and fruit mixed in</li><li>hot or cold cereal with milk</li><li>pancakes/toast, waffles with jam, syrup, nut butters</li></ul> | <ul style="list-style-type: none"><li>Toast with eggs</li><li>Baked Potato with beans</li><li>Sandwiches (turkey, chicken, tuna)</li><li>Rice bowl with lean meat and veggies</li></ul> |
| Avoid: HP shakes and bars                                                                                                                                              | Avoid: candy, chips, pastries                                                                                                                                                                                          | Avoid: Fried foods                                                                                                                                                                      |

# Morning Swim Training

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- 5:15 am start- It's too early...
  - Eat a high complex carbohydrate meal the night before with lean protein and vegetables/fruits
    - Tuna pasta, spaghetti with meatballs and broccoli, chicken with baked or sweet potatoes
  - Eat a bedtime snack with complex carbs and protein
  - In the morning: Bananas, dried fruit, cereal bars, toast with Jam, pancakes, waffles
  - Liquid energy- smoothies, sports drinks, chocolate milk
- Things to avoid in the morning:
  - No "Energy" drinks (Red Bull, Monster etc)
  - High fats like sausages, fried eggs (can take 4-6 hours to digest)

# Hydration for Training

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- Up to one hour → water
- 1- 2 hours → electrolytes + water (replete glycogen stores; 60-90 min)
- Types of hydration-
  - Water, flavored water, milk, coconut water, sports drinks
- Types of Electrolytes- contains carbohydrates, Potassium and Sodium
- To prevent dehydration- (muscle cramps, headaches, nausea, fatigue, brain fog, poor coordination)
  - Start drinking with your pre-training snack or morning meal
  - Put water bottle at the end of the lane and drink every 10-15 minutes between sets
  - Never wait until you are thirsty to drink
  - Check yourself! That's right, look at your urine

# Snacks During Training

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- Avoid high fat snacks
  - No candy bars, chips
- Eat simple Carbohydrates
  - Dried fruits, squeeze fruit pouches, oranges, melon cups, bananas
  - Electrolyte drinks- i.e. Powerade, Gatorade, Body Armour
    - NO to sodas, energy drinks, PRIME, juices are iffy

# Nutrition After Training-

RECOVERY Snack includes: CHO, protein, fluids (3:1 ratio of CHO: PRO)

Refuel muscle energy stores, Repair and build muscle and Replace lost fluids

- Combine CHO with Pro to transport protein into muscles quicker
- It can take 24-48 hours to replete your muscle stores so the sooner you eat, the more fuel you will have for the next practice
- Poor recovery leads to higher stress hormones and poor immune function
- Don't let your body eat itself

| Within 30 minutes after training<br>(Bring your snack to practice)                      | Within 2 hours after training<br>Eat Breakfast/Dinner:                                                    |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 25-50g CHO, 7-10 g Pro (smaller athletes)<br>60-80 g CHO, 10-20 g Pro (bigger athletes) | <u>Half</u> your plate CHO (Important for 2-a-day practices)<br>¼ plate protein, ¼ plate vegetables/fruit |

# Nutrition After Training-

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## Snacks

- Low fat chocolate milk
- Large banana with low fat greek yogurt cup
- Bagel with peanut or almond butter and jam
- Fruit smoothie (look at recipes)

## Dinner

- Chicken breast or lean mean with mashed potatoes and vegetables
- Rice bowl with lean meat and vegetables
- Baked fish with sweet or boiled potatoes and vegetables
- Noodles with lean meat or tofu/stir fry
- Large baked potato with lean chili
- Spaghetti with lean meat and vegetables in the sauce

# How much do I need a day?

Swimmers:

3000-6000 kcals/day

RDA for Protein:

1-1.5 gm/kg  
per day;

Teenage Boys: ~52 gm/day

(increases when  
building)

Teenage Girls: ~46 gm/day

\*\*\*Not enough Protein: Muscle breakdown

Too much Protein: wt gain, hard on kidneys w/o water

More isn't better; spread out protein to be included in meals and snacks to meet needs

Protein examples and serving sizes:

|                                    |          |           |
|------------------------------------|----------|-----------|
| Chicken breast, cooked             | 3 ounce  | 24g       |
| Fish, salmon, cooked               | 3 ounces | 21g       |
| Ground beef, cooked                | 3 ounces | 22g       |
| Greek yogurt                       | 1 cup    | 18 to 22g |
| Yogurt                             | 1 cup    | 12 to 14g |
| Tofu, firm                         | ½ cup    | 8 to 11   |
| Milk                               | 1 cup    | 8         |
| Beans                              | ½ cup    | 7 to 9    |
| Peanut, almond and soy nut butters | 2 T      | 7 to 8    |
| Cheese                             | 1 oz     | 5 to 7    |
| Nuts                               | 1 oz     | 3 to 6    |
| Egg                                | 1 large  | 6         |
| Quinoa, cooked                     | ½ cup    | 4         |

# EASY TRAINING/WEIGHT MANAGEMENT

## FATS

1 Teaspoon



Avocado  
Oils  
Nuts  
Seeds  
Cheese



Whole Grains

Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes

Weight Management  
Easy Training

Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu,  
Tempeh)  
Legumes/Nuts

Lean Protein

Raw Veggies  
Cooked Veggies  
Veggie Soups  
Fresh Fruit

Vegetables & Fruits

Water  
Dairy/Nondairy  
Milk  
Diluted Juice  
Flavored  
Beverages

Coffee  
Tea

## FLAVORS

Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup



# MODERATE TRAINING

## FATS

1 Tablespoon



Avocado  
Oils  
Nuts  
Seeds  
Cheese



## Grains

Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes



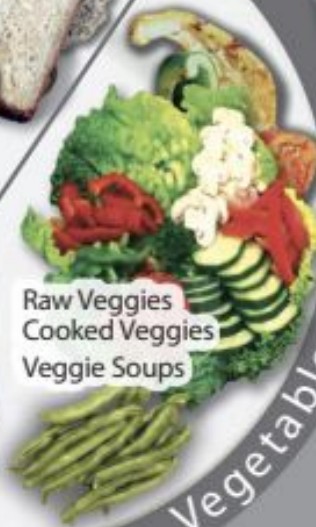
## Lean Protein

Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu,  
Tempeh)  
Legumes/Nuts



## Vegetables

Raw Veggies  
Cooked Veggies  
Veggie Soups



Fresh Fruit  
Stewed Fruit  
Dried Fruit



Water  
Dairy/Nondairy  
Milk  
Diluted Juice  
Flavored  
Beverages



Coffee  
Tea

## FLAVORS

Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup



# HARD TRAINING/GAME DAY

## FATS

2 Tablespoons



Avocado  
Oils  
Nuts  
Seeds  
Cheese



## Grains

Pasta  
Rice  
Potatoes  
Cereals  
Breads



Fresh Fruit  
Stewed Fruit  
Dried Fruit



Water  
Dairy/Nondairy  
Milk  
100% Fruit Juice  
Sport Drink  
Flavored  
Beverages



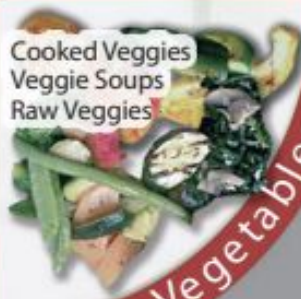
Coffee  
Tea

## Lean Protein

Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu,  
Tempeh)  
Legumes/Nuts



Cooked Veggies  
Veggie Soups  
Raw Veggies



## Vegetables

## FLAVORS

Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup



# Water

- Contained in all cells of the body
- Vital for Cellular function
- Cooling system- keeps you from overheating
- Minimizes muscle cramps
- Enhances mental function-decision making, concentration, and motor control
- Supports effective immune defenses
- Transport system-
  - Makes up over half of our blood
  - Carries oxygen and energy to your muscles
  - Gets rid of waste



**Multiply rate of sweat loss x duration of practice to accurately assess fluid needs at practice**

## Sweat Test:

1. Measure amount of fluid in water bottle(ml)
2. Get in pool, get out , towel dry and weigh
3. End of practice, towel dry and weigh
4. End of practice, calculate how much you drank (Note duration and intensity of practice)

*Equation:*

*wt SOP- wt EOP=wt lost*

*Wt lost (#) x 455=ml fluid lost*

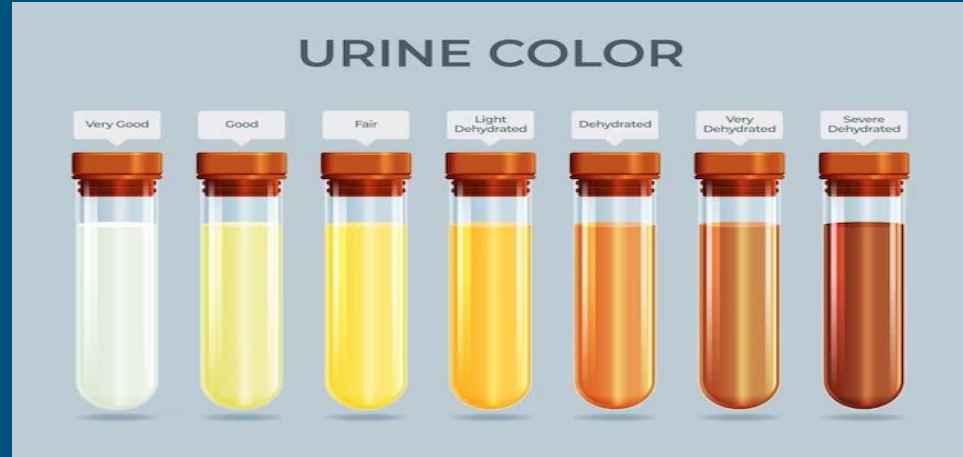
*ml fluid lost from body + ml fluid consumed= sweat lost in ml*

*Sweat lost in ml /length of practice in hrs= rate of sweat loss in ml/hr*

# Signs and Symptoms of Dehydration

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- Lack of concentration
- Early fatigue in training session
- High perceived exertion in training
- Trouble tolerating heat
- Delayed recovery
- Muscle cramps
- Headaches Nausea and vomiting
- Elevated heart rate above regular normal
- Dark Urine



**Winter Championship Eating Tips-  
GOOD LUCK!!!!**

**Night Before-** Eat a whole grain pasta dish ( about 1 ¼ cups cooked) with at least 4 oz chicken (this is slightly bigger than a deck of cards) with two servings of veggies. (Note: one serving is ¼ cup cooked or 1 cup raw, so double this to meet your evening meal). Take your vitamins and drink 1-2 cups water

**Breakfast-** Eat 2-3 hours before warm up which is at 8 am so around 5-6 am is ideal. If you aren't getting up early enough then all the more reason to make sure you meet that "Night Before" Meal. Eat immediately when you wake up to give yourself ~ two hours at least to digest.  
DON'T SKIP BREAKFAST TOMORROW

***Breakfast ideas-***

- Bagel with egg and cup of fruit (stay away from high fiber foods at this point because we want simple carbs that break down for fueling your body faster)
- Low sugar/low fiber cereal with fruit
- Waffle or toast with egg and side of fruit

**Post Warm Up-**

Hydrate with sports drink since your next swim is in an hour

**OR** drink water and a quick carb snack- see examples in list below.  
(don't try anything new though)

**After First Swim which is around 9:41- Event 3**

Hydrate with sports drink

**OR** water and dried fruit

**After Second Swim which around 10:02- Event 7**

Hydrate with sports drink

**OR** Carb gels or quick carb snack and water

**After Third Swim which is around 10:24- Event 11**

Hydrate with sports drink/water

Eat 1 cup of fruit or banana/orange

**OR** Eat pasta salad- 1 cup

**OR** Plain Chicken salad or tuna salad on one slice of white bread

**After Fourth Swim is around 11:26- Event 23**

Eat a recovery snack including fluids within 30 minutes of finishing to replenish your sweat loss and for muscle recovery- SO IMPORTANT!! See below for examples

When you get home, make sure you eat a sensible dinner similar to your pre-event meal the night before your races.

Examples of Recovery Snacks: You can use ones I've given you before.

- Lactose free Chocolate milk with a whole wheat mini-bagel with sliced turkey and sliced apple.
- Granola Bar and cup of low fat Greek yogurt
- Peanut butter and jelly sandwich
- Honey sandwich and 2 boiled eggs.
- Low fat cheese and crackers plus fruit
- Sports Recovery bar (check the amounts of carbohydrate and protein on the wrapper)
- Ham, cheese and salad roll or wrap

Examples of some snacks to pack that are quick carbs for between events- Low fiber and low fat and simple carbs is key

- Bananas
- Apple sauce
- Pita chips
- Bagels
- Fig newtons
- Dried dates
- PB&J sandwich
- Electrolyte drinks
- Grapes
- Energy bars
- Pretzels
- Energy chews/gels

(DON'T TRY ANY FOODS YOU HAVEN'T EATEN BEFORE- NO UPSETS STOMACHS TOMORROW)

## Swim Races – AM Preliminaries & PM Finals

### Saturday evening

|                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|
| <b>7:00 pm Dinner</b> | 4 oz chicken<br>1-1.5 cups whole grain pasta<br>1 cup roasted veggies<br>8 oz water |
|-----------------------|-------------------------------------------------------------------------------------|

### Sunday

**4:00 am Awake**

|                          |                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------|
| <b>4:30 am Breakfast</b> | 1 bagel<br>1 Tbsp peanut butter<br>1 orange<br>6 oz cottage cheese<br>8-16 oz water |
|--------------------------|-------------------------------------------------------------------------------------|

|                |                       |
|----------------|-----------------------|
| <b>6:30 am</b> | carb gel/chews, water |
|----------------|-----------------------|

### 7:00 am 200 m Prelims Race Start

|                                                    |                                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------|
| <b>7:30 am 2<sup>nd</sup> Breakfast (Recovery)</b> | fruit smoothie (water, Greek yogurt, spinach, frozen pineapple & mango) |
|----------------------------------------------------|-------------------------------------------------------------------------|

|                      |               |
|----------------------|---------------|
| <b>9:30 am Snack</b> | bar or banana |
|----------------------|---------------|

|                             |                                                                       |
|-----------------------------|-----------------------------------------------------------------------|
| <b>11:00-11:30 am Lunch</b> | 1-2 cups brown rice<br>4-6 oz chicken<br>1 cup veggies<br>16 oz water |
|-----------------------------|-----------------------------------------------------------------------|

|                        |                     |
|------------------------|---------------------|
| <b>12:00 – 2:00 pm</b> | water, sports drink |
|------------------------|---------------------|

### 3:00 pm 200 m Finals Race Start

|                          |                  |
|--------------------------|------------------|
| <b>3:30 pm Finished!</b> | water & recovery |
|--------------------------|------------------|

Example from US  
Olympic Committee

# NO FAD DIETS!!!!

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- Low Carb diets
- Energy drinks
- PRIME
- Supplements
- Protein powders
- Skipping meals/fasting
- Do not eliminate foods unless you have an allergy

# Supplements and Seals

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The most common third-party certification seals that appear on some dietary supplement products are (in alphabetical order) BSCG Certified Drug Free, Informed-Choice (or Informed-Sport), NSF Certified for Sport, and USP Verified.



# A few Resources

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<https://www.usopc.org/nutrition>

<https://www.myplate.gov>

<https://swell.uccs.edu/theathletesplate>

