

# Fueling the Elite Gymnast

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# Presentation Outline:

- Nutrition Basics
- Understanding Carbohydrates & Blood Sugar
- Protein: For Fullness & Strength
- Being Your Best
- Should I Be Taking Supplements?
- Eating on the Run



# Question?

- If athletes do not eat enough to fuel their body for a training session, which of the following is TRUE?
  - A. They will not be able to perform at their best
  - B. They are more likely to get injured
  - C. They are more likely to get
  - D. All of the above



# Understanding Energy Needs:

- Gender
- Height & Weight (body composition)
- Age
- Training: type, intensity, duration, etc.

## Example:

Elite Athlete, 5'1, 100 lbs (45.5 KG), 13 yrs

Energy Needs for Sport = 1,820 to 2,000 calories per day



Achieving an **ENERGY balance** is crucial for maintenance of lean tissue mass, immune function & maintenance of bone mass and optimal sport performance (DC, ADA, ACSM, 2009)

All calories are not the same...

# Why does fueling properly matter?

- Food & nutrition has a major impact on:
  - Your day-to-day energy- maintaining basic bodily functions and metabolism
  - Your energy levels for training & competition
  - Your strength, recovery, and ability to tolerate long hours of training
  - Your endurance: your last tumbling pass, your bars dismount, your last event of the day (or meet)
  - Your likelihood of getting injured, or sick
  - How you feel on competition day

# Carbohydrate (CHO) needs For Training

Carbohydrate containing foods ultimately break down to blood glucose to provide fuel for cells and the brain!

CHO needs are dependent on training volume, duration and intensity...

Eat your Super Foods, Energizers, Bone Builders!

- **Skill based training: 3-5g CHO/Kg BW/day**

**What is a quality CHO?**

# Quality CHO

Whole grains: Quinoa, Oats, Wild/ Brown Rice, Barley



Fruits & Vegetables: Color your plate!



Milk & Alternatives: Greek Yogurt, Skim/1% milk, Cottage Cheese

# Carbohydrates: Quality Counts

Foods that trigger a spike in blood sugar can also cause a crash, triggering hunger, cravings, and fatigue  
Blood sugars that run too high for too long can trigger the storage of excess sugars as fat in our body

These types of foods are called High Glycemic foods...

- Foods made from white flours (pop tarts, cookies, store bought muffins)
- Foods made from sugar (Candy, pop, fruit punches)
- Foods made with high fructose corn syrup
- Boiled potatoes without the skin





# Understanding Carbohydrates

- How can we keep blood sugar from spiking and crashing? i.e. how can we keep our energy even, and prevent hunger & cravings?
  1. Choose carbohydrates that are made from whole, unrefined grains, beans/legumes, or whole fruits & vegetables – i.e. “lower glycemic”
  2. Keep portions of carb foods moderate
  3. Balance carbohydrates with protein, and/or with healthy fats
    - Both (and fibre) slow the breakdown of carbs into sugar

# ATHLETE'S PLATE

## EASY TRAINING / WEIGHT MANAGEMENT:



The Athlete's Plate was developed through the cooperation of the United States Olympic Committee, the U.S. Olympic and Paralympic Committee, and the University of Colorado. For more information, visit [www.athleteplate.com](http://www.athleteplate.com).

# Understanding Blood Sugar

INSTEAD OF	TRY CHOOSING
White bagel (3 slices of bread)	2 slices whole wheat bread + turkey
2 cups of white rice with veggies & sauce	1 cup of brown or wild rice with chicken & veggies
3 pancakes or waffles w/ syrup & juice	2 oatmeal pancakes with Greek yogurt and berries
Corn Flakes, Special K, or Rice Krispies + milk	Oatmeal (not instant) with milk/soy milk + walnuts or almonds, berries
Juice/Fruit drink	Water
White crackers & dip	Veggies & hummus
Smoothie made from pureed fruit	Smoothie made from fruit with milk/soy milk, Greek yogurt, or cottage cheese
Granola bar or cereal bar	Whole fruit + handful of nuts
Boiled white potatoes	Roasted squash, sweet potatoes with skins

# Protein requirements for training & Performance

- Proteins role: feeling of fullness, recovery, building cells and repairing muscle
- Energy **balance** must be achieved for optimal protein use and performance
- **Example athlete (45.5kg): recommendations of 1.2-1.7g/KG/d= 54.6-77.4 g**

## What is a Quality Protein choice?

- Ideal intake would be to include protein at all meals and snacks
- Between 20 to 25g of protein at each meal or snack

# Protein Supplements

- Most athletes can easily meet their protein needs with food
- Supplements are convenient for recovery choices
- Protein supplements are expensive compared to food sources
  - 500ml 1% milk (18g protein, 54g CHO) = \$1.25
  - 500ml MuscleMilk<sup>®</sup> (34g protein, 17g CHO) = **\$4.08**
  - 284g Greek yogurt (26g protein, 46g CHO) = \$2.25
- **Purity of the supplement is not regulated- take at own risk**  
**Ensure NSF or HFL third party tested**
- AA in a food form are absorbed better by the body and are usually of higher quality
- Excess protein is not stored as muscle in the body

# Protein content in common foods:

Food	Serving	Protein (g)	Food	Serving	Protein (g)
Chicken Breast	4 oz	27	Tofu, soft	1 cup	10
Fish	4 oz	23	Tofu, firm	1 cup	20
Egg (whole)	1	7	Greek yogurt	1 cup	15
Legumes	1 cup	14	Light yogurt	1 cup	8
Beef	4 oz	19	1% cottage cheese	1cup	28
Soy milk	1 cup	7	Almond butter	2 Tbsp	6
Skim milk	1 cup	8	Peanut butter	2 Tbsp	8
Quinoa	1 cup	11	Cooked vegetables	½ cup	2-3
Brown rice	1 cup	5	Kashi cereal	1 cup	11
Oatmeal cooked	1 cup	6	Lara bar	48g	7
Nuts	2 Tbsp	7	Kashi granola bar	1 bar	6
Soybeans	½ cup	11	Beef jerky	28g	11

# Balance= Combine source of CHO and Protein

## PROTEIN

**Lean meats and fish** (chicken, turkey, ham, roast beef; tuna, salmon)

**Eggs** (e.g. hard-boiled or scrambled & in a wrap)

**Dairy proteins:** milk, yogurt, cottage cheese, cheese

**Soy protein:** soya beverage, tofu, soy nuts, veggie meats

**Beans & legumes:** chick peas, lentils, black beans, hummus

**Nuts & seeds:** almonds, walnuts, sunflower seeds, pumpkin seeds, peanut or almond butter

**Other:** PowerBar/protein/meal replacement bars; whey protein powder; Breakfast-to-Go

## CARBOHYDRATES

**Whole grain cereals** (oatmeal, higher fibre cereals, etc.)

**Whole grain bread products** (wrap, bread, pita, bagel)

**Grain products** (brown or wild rice, whole wheat pasta, quinoa, etc.)

**Starchy vegetables** (potato, sweet potato, squash, corn, turnip, etc.)

**Fruit** (preferably fresh or frozen instead of canned or juice)

**Non-starchy vegetables** (any kind)

**NB:** there are carbohydrates in milk, yogurt, beans and legumes

**Other:** Granola bars, baked goods, graham crackers, fig newtons, etc.)



# Balanced Snack Ideas

- Yogurt, berries, and homemade granola
- Smoothie with fruit, milk, and yogurt
- Hummus and raw vegetables (cucumbers, peppers, carrots)
- Canned tuna and whole grain crackers
- Cottage cheese and mandarin orange
- Whole wheat wrap with almond butter and banana
- Peanut or almond butter and apple
- Almonds, walnuts, or cashews, raisins, and Kashi cereal
- Homemade muffin with glass of 1% milk
- Whole grain cereal or oatmeal with milk
- Leftover chicken in a whole wheat wrap



# Planning your Day:

**For optimal energy and continual recovery- avoid going longer than 3-4 hours without eating**

- ▶ Breakfast include 2 high protein choices: 1 cup skim milk,  $\frac{3}{4}$  cup yogurt,  $\frac{3}{4}$  Greek yogurt, 1 cup 1% cottage cheese, or 2 eggs
- ▶ @ snacks: 100g yogurt, 200ml Yop, 4 thin slices cheese (<20% M.F.),  $\frac{1}{4}$  cup almonds,  $\frac{1}{2}$  cup hummus, 1 cup 1% chocolate milk, small tuna snacks
- ▶ Lunch and Supper: 2 high protein choices: include 1 serving of milk/alternatives + 1 servings of meats/alternatives (example: 1 serving of meat = 2.5 oz.)
- ▶ **Recovery Snack:** include between 20-25 grams of protein (0.2-0.4g/KG bodyweight/hr)
  - ▶ Example athlete (61.4 KG)=13g to 25g post workout
  - Milk, yogurt, cheese, deli meats, beans, lentils, etc.

# The Importance of Hydration:

The single most important factor associated with sustaining a high level of athletic performance is maintenance of blood volume during exercise

**1% drop in pre-exercise BW=**

Heart rate



Core body temperature



RPE



Cardiac output



PERFORMANCE



# Question?

- Drinking fluids every 15-20 minutes during intensive training is recommended.

A. True










B. False



# The Importance of Hydration

## **AM I HYDRATED?**

### Urine Color Chart

<b>1</b>		If your urine matches these colors, you are drinking enough fluids
<b>2</b>		Drink more water to get the ideal color in Shade 1 and 2.
<b>3</b>		Dehydrated
		
<b>4</b>		You may suffer from cramps and heat-related problems
<b>5</b>		Health risk! Drink more water.
<b>6</b>		Health risk! Drink more water.
<b>7</b>		Health risk! Drink more water.
<b>8</b>		Health risk! Drink more water.

# Question?

- ▶ Sports drinks (Gatorade and PowerAde) are high sugar drinks. They have the same amount of sugar as pop or ice tea

- A. True
- B. False



# Being Your Best

## Basic guidelines:

1. Include protein at each meal and snack
2. Have a handful of nuts or seeds each day
3. Try to eat fish (especially salmon, trout & other oily fish) twice/week
4. Limit added sugar to less than 20 g (4 tsp)/day
5. Hydrate so that you “pee clear” and choose plain water whenever possible

# Being Your Best

daydeyrousseau



- Foods that give energy & tons of nutrients
  - Fruits, vegetables, lean meats, yogurt, root veggies, whole grains, nuts, seeds, eggs
  - Eat whole fruit and vegetables instead of juices (even 100%), purees, fruit/veg “bars”
  - Aim to eat 5 colours of fruits & vegetables per day
- Foods that can take energy away:
  - Sugary foods, pop, white noodles & rice, white bread & bagels, sugary cereals & granola bars

# Do I Need a Supplement?

- Everyone is different
- Avoid supplementing without a specific purpose
- Having said that, if there is one supplement to take, it should be vitamin D
- Possibly prevent stress fractures, immune system, reduce pain
- Research suggests gymnasts are particularly prone to vitamin D deficiency (indoor sport)



# Do I Need a Supplement?

- Where do we get vitamin D?
  - The sun
- Where don't we get it from?
  - Food (not much, anyway)
- When do we need it most?
  - Definitely winter (Oct-March), but unless exposed to sun in mid-day without sunscreen for 10-15 minutes most days in summer, then should take it year-round

# Do I Need to Supplement?

- How much?
  - At least 1000 IU/day
  - Most: 2000-3000 IU/day = 2-3 min summer sun
  - Up to 4000 IU/day is safe
- As drops, tablets, chews
- Ideally with food (50% better absorption)
- Can take several days' worth at once

# Fuel for Performance

Before you hit the gym in the morning, plan a small to medium-sized balanced meal/snack

- includes a protein & carbohydrate
- Why? For fuel to use during workout, without a spike & crash
- Examples:
  - Cereal (less than 8 g sugar/30 g svg) + milk
  - Oatmeal (pref. plain/slower-cooked) + milk
  - Whole wheat toast/English muffin + 2 boiled eggs
  - Chicken or turkey sandwich/wrap
  - Smoothie w/ milk/yogurt & fruit

# Fuel for Performance

During gym, if it is going to be more than 4 hrs since your last meal, plan a small snack to help energize you for the second half of your workout:

- Fruit or fruit juice (ok in this case)
- Yogurt
- Few bites of sandwich/wrap
- Homemade muffins/Energy bar
- Clif bar/Builder's Bar/Power Bar – about 1/2

# Fuel for Performance

After your training session:

- Recover with ~10-20 grams of protein + some carbohydrate within 15-30 minutes
- Then have your regular meal (lunch or dinner)
  - E.g. ½-¾ cup Greek yogurt (fruit-flavoured)
  - Banana + 1 cup of milk or soy beverage
  - Smoothie with milk/soy beverage, yogurt, berries, banana – add some spinach?
  - ½ cup cottage cheese + slice apples
  - ½ protein bar (watch for sugar content) + mandarin orange

# The DREADED Grocery Store

- Make the grocery store a family trip!
- Hit the produce section first- plan your snacks for the week and fill the cart for meals
  - Don't forget frozen is as healthy as fresh!
  - One-pot meals are a major time savour
- Hit the whole grains- brown rice, ww wraps and pitas, quinoa, millet, oats
- Dairy: Milk, Greek yogurt, Cottage cheese, hard cheese
- Hit up the canned beans, tuna
- Lastly, cereals, bars and nut butters before you head home (<10g sugar!)

# Save Time

- Sunday night week prep:
  - Cut up all your vegetables and store in bags
  - Boil a dozen eggs for the week
  - Plan your one pot meals to have for left-overs (double the recipe)
  - Game plan for the week
- Thaw meat night before
- Have a meatless meal once a week
- Keep it simple! Gourmet meals are not necessary

# Summary:

- Adequate ENERGY intake is critical for performance
- Don't ditch the CHO, keep it whole!
- Protein is key for performance, growth and development
- Hydration- consistency is key
- Try to plan your food intake around training- monitor your timing of intake
- Aim for Nutrient Dense, not Energy Dense
- **ALWAYS** be prepared!





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