PARTICIPANT HAND OUT

Fueling Your Body to Power Through the Pool!
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FUELING YOUR BEST PERFORMANCE

BEFORE TRAINING/COMPETITION

Less than 1 hour = a light snack
(medium to high GI foods)

Examples:

fresh fruit with plain greek yogurt (honey/maple syrup)
nut butter or hummus sandwich on whole grain bread
oatmeal with unsweetened almond milk and a 1/2 banana or berries (recipe)
berry smoothie (recipe)
protein bar - a high quality commercial bar
date-based energy ball X 2 (recipe)
banana or apple with 1 tablespoon of natural nut butter
fresh veggies with hummus
whole grain rice cakes with a natural nut butter and banana
homemade trail mix with nuts, raisins or natural dried cranberries, dark chocolate chips

2-3 Hours Before
(low GI foods)

Easily digestible meal based around a carbohydrate food such as whole grain bread/toast, potatoes, sweet potatoes, whole grain pasta, oats, quinoa, brown rice + a protein + decent portion of veggies, steamed or raw.

Ideas:

BREAKFAST
poached egg on whole grain toast with sliced avocado or steamed spinach
oatmeal with chia and hemp seeds, raisins, cinnamon, shredded coconut with plain yogurt and honey or unsweetened almond milk
berry smoothie with CHO, PRO and a FAT (1 tablespoon of natural nut butter or coconut oil)

LUNCH
tuna, salmon, roast chicken, egg sandwich on whole grain bread + fruit + veggies and hummus

DINNER
lean protein, big salad and/or steamed or raw veggies and either brown rice or quinoa
whole grain pasta with veggie sauce or lean ground turkey
veggie chili and brown rice

DURING TRAINING/COMPETITION

no need to eat during exercise for continual exercise for less than 90 minutes.

regular poolside hydration breaks are critical (every 15 - 20 minutes)

water and/or coconut water (nature's gatorade)

AFTER TRAINING/COMPETITION

Within 30 minutes = a light recovery snack
(medium to high GI foods)

Post-training/competition snack and meal is THE MOST important as it determines how fast you will recover before the next training session, the next competition, or the next-day competition

#1 priority is replenishing fluid losses with water and electrolytes (coconut water) and to top up carbohydrates (glycogen) stored in your liver and muscles and a protein for tissue and muscle repair

H2O/Electrolytes according to thirst + CHO + PRO in a ratio of 3:1

Examples:

date/tablespoon nut butter
banana or apple/tablespoon nut butter
seaweed snacks (to replenish sodium lost in sweat)

Within 1 - 2 hours
(low GI foods with a quality meat or vegetarian protein)

Post training/competition meals are similar to your pre training/competition meal

MACRONUTRIENT BREAKDOWN FOR THE YOUNG ATHLETE

Carbohydrates (CHO): approx. 50%
Protein (PRO): approx. 20%
Fat: approx. 30%

1. CHO - 50% of diet

It is recommended that children obtain at least 50% of their energy from carbohydrates, primarily found in plant foods and whole grains.
Aim for:
4 - 6 portions daily of gluten-free whole grains including millet, quinoa, brown rice, buckwheat, oats, amaranth, pasta, tortillas, beans, legumes, squashes, potatoes, sweet potatoes, leafy greens and vegetables of all kinds.
2 - 3 portions daily from fruit, dried fruits - apples, bananas, kiwi, pears, berries, grapes
(all lower GI)
raisins, natural dried cranberries, golden berries, apricots (higher GI)

2. PRO - 20% of diet

Because children and growing and developing they need more protein relative to their weight than adults. Athletic children require 1.1 - 1.2g PRO per kg body weight per day.
Aim for:
2 - 4 portions of protein-rich foods daily from lean poultry, fish, eggs
plant proteins: beans, lentils, quinoa, brown rice, nuts and seeds, hemp hearts, chia seeds, tofu

3. FAT - 30% of diet

Studies suggest that during exercise children us relatively more fat and less carbohydrate than do adolescents or adults. This applies to both endurance and short, higher intensity activities where they tend to rely more on aerobic metabolism (in which fat is the major fuel.)

Polyunsaturated Fatty Acids: Omega 6 and Omega 3 Essential Fatty Acids in a ratio of 4:1.

Best food sources: nuts and seeds; high quality animal products; wild cold water fish; Extra Virgin Olive Oil, Flax Seed Oil

Raw Coconut Oil - rich in *lauric acid*, a medium chain triglyceride (MCT). MCTs are easily digested by the body and used as a form of direct energy because they are so easily absorbed and processed. This is particularly good new for children who tend to rely more heavily on fat-burning for fuel than CHOs. 1 tbsp in a smoothie is a great way to consume coconut oil, or use as a high temperature cooking oil for stir fry, veggie chilli, in baking, etc.

Avocados! - 77% of calories are from healthy Monounsaturated Fatty Acids (MUFAs) in the form of *oleic acid*. Avocados are very rich in vitamins and minerals, particularly potassium, which is so critical to athletic performance. Great to add creamy texture in smoothies; add to salads, smash on to gluten-free bread/toast or rice cakes with a sprinkle of salt and pepper.

* Exact portion sizes depends on your energy requirements. Generally, older, heavier, more active children need bigger portions.
* Rule of Thumb = be guided by appetite and not too prescriptive about exact amounts

MICRONUTRIENTS THE 'MAGIC WANDS' OF NUTRITION

Micronutrients are the backbone of nutrition itself. They are vitamins and minerals in food. They don't provide energy but they are critical to help convert macronutrients into energy. They are the 'magic wands' that are critical for optimal athletic performance. They act as co-enzymes (protein-based molecules that speed up chemical reactions in the body). Micronutrients are essential for growth, digestion, elimination and immunity.

The danger of refined sugar is that it is completely void of all nutrients and consequently it causes the body to deplete its own stores of various, vitamins, minerals and enzymes contributing to fatigue, mood swings and poor athletic performance.

THE EIGHT COMPONENTS OF GOOD NUTRITION FOR ATHLETIC PERFORMANCE

1. Alkaline-Forming Foods - the measure of acidity or alkalinity is called pH and maintaining a balanced pH is an important part of reaching and sustaining peak health and athletic performance. Since minerals are exceptionally alkaline-forming, the pH of any food is largely dependent on mineral content

Eat alkaline forming foods to help your muscles recover and eat those particularly rich in chlorophyll soon after exercise. Chlorophyll is the green pigment that gives leaves and green vegetables their rich colours.

Best sources: ALL green vegetables and seaweed!
Benefits: improves bone strength and muscle efficiency

2. Antioxidants - when our body's activity level rises, we use extra oxygen, which causes cellular oxidation. Oxidation can create free radicals which can cause cells to degenerate prematurely. We can combat free radicals with antioxidant compounds found in fruits and vegetables.

Best sources - berries, dark-colored fruit, colorful vegetables (eat the colour of the rainbow), cinnamon, walnuts, pumpkin seeds!
Benefits: speeds physical recovery

3. Calcium - for most people building, strengthening and repairing bone is calcium's major role. For kids it's also growth! But for active kids this mineral has another really important role: muscle contraction and rhythmic heartbeat coordination, in concert with magnesium. Another micronutrient, Vitamin D maximizes calcium absorption. Vitamin D comes from the sun. Consuming an adequate supply of calcium from leafy green vegetables ensures our bones stay strong and that muscle contractions remain smooth and efficient.

Best plant sources: dark leafy greens such as spinach and kale. Best non-dairy sources of calcium = white beans, canned salmon, dried figs, blackstrap molasses, almonds, oranges, sesame seeds and seaweed snacks!

Benefits: improves muscle function and efficiency, increases bone strength

4. Electrolytes - electrolytes are energy-conducting salts drawn from the soil and include calcium, chloride, magnesium, potassium, and sodium. Electrolytes in body fluid and blood regulate or affect the flow of nutrients into the cells and of waste products out of cells and are essential for the regulation of muscle contractions, heartbeats, fluid levels and general nerve function.

Best sources: coconut water, molasses, seaweed
Secondary sources - bananas, tomatoes, celery
Benefits: helps maintain hydration, improves fluidity of muscle contractions, increases the heart's efficiency, lowers the heart rate, improves endurance, boosts mental clarity

5. Essential Fats - are a very important dietary component of overall health. The word "essential" means the body cannot produce these fatty acids so they must be ingested There are 2 families of EFAs - Omega 3 and Omega 6. EFAs support the cardiovascular, immune and nervous systems. From an athlete's perspective, when combined with proper endurance training, a diet with an adequate supply of EFAs can improve endurance. The ideal ratio of O6:O3 = 3:1.

Best sources: (balanced O6:O3) so no need to worry about ratios - chia, flaxseed, hemp
Benefits: improved endurance, increases the body's ability to burn fat as fuel, improves the body's ability to stay well hydrated, improves joint function

6. Iron - helps to maintain blood cell health so that the heart can deliver oxygen rich blood to the hard-working extremities - maximizing athletic performance. Iron also builds blood proteins essential for food digestion, metabolism and circulation. Iron is really important for athletes because iron is lost through sweat and is consumed during muscle contraction. ATP (our energy currency) production drops and energy levels decrease as a result. Iron is critically important for all athletes, young and old!

Best plant-based sources: pumpkin seeds, leafy greens (especially kale)
Other sources: dried apricots, blackstrap molasses, lentils, quinoa, brown rice, oatmeal,, nuts and seeds, tomato sauce
Benefits: improves blood's oxygen-carrying ability, increases physical stamina, boosts energy

7. Phytonutrients - are plant compounds that offer health benefits independent of their nutritional value. Ex. phytonutrients in tomatoes improves blood vessel elasticity and thereby enhances blood flow to the heart. Every type of fruit and vegetable has at least a few phytonutrients so simply eating many servings on a daily basis will boost health and therefore performance.

Best sources: fruits and vegetables of all kinds
Benefits:i mproves circulation, blood vessel elasticity and improves hearth health

8. Lots of raw foods for snacks! loaded with vitamins and minerals

Best sources: nuts and seeds, fruit and most vegetables
Benefits: improves digestibility of most foods; maintains high vitamin content and allows for higher net gain and therefore more energy.

+ One more for swimmers! **Probiotic foods**. Chlorine in pools is used to kill bacteria. Ingesting pool water may therefore wipe out beneficial bacteria in the gut. Probiotics help balance the gut flora in your digestive system. They improve bowel health, aid digestion and absorption of nutrients and improve immunity. I highly recommend probiotic foods in your diet, including plain yogurt, kefir and cottage cheese. Other fermented, probiotic-rich foods include sauerkraut, kimchi and pickled cucumbers and beets.

FUELING FOR PERFORMANCE RECIPES!

EFFORTLESS OVERNIGHT OATS IN A MASON JAR

1/2 cup rolled oats
1 cup unsweetened almond milk
1/4 cup chia seeds
1/2 tsp ground cinnamon
1/2 banana, mashed

In small bowl whisk together oats, almond milk, chia seeds, banana and cinnamon. Cover and refrigerate over night to thicken.

Modified from the Oh She Glows Cookbook

BRIGHT BERRY SMOOTHIE
(sometimes the green colour doesn't cut it!)

1 cup fresh spinach
1 banana (either fresh or frozen)
1 1/2 cups frozen strawberries or mixed berries
1/2 cup kefir (optional probiotic add-in!)
1 cup unsweetened almond milk or coconut water
1 tbsp raw almond butter, cashew butter or coconut oil
1 tbsp ground flax, chia and/or hemp
1 sprinkle cinnamon

Cutting down on the spinach takes out green colour, the red berries add great colour.

Blend and serve.

DATE-BASED ENERGY BALLS
(30 minutes before competition for fuel and after for re-fueling)
Prep time - 15 minutes

1 cup raw cashews or almonds
1 cup pitted Medjool dates (8 -10 large dates)
1/4 cup hemp seeds
1/4 cup shredded coconut for rolling

Mix cashews or almonds and pitted dates together in a food processor until a course dough has formed (allowing some cashews or almonds to remain coarsely chopped). Add the hemp seeds and pulse several times until combined.

Use your hands to shape the dough into 1 - 1 1/2 inch balls. Roll in shredded coconut. Store in tupperware in freezer for long-term storage.

Low Glycemic Foods List 0 - 55	Medium Glycemic Foods List 56 - 70	High Glycemic Foods List 70+
Most non starchy vegetable <15 Peanuts <15 Low-fat yogurt, no sugar<15 Tomatoes 15 Cherries 22 Peas 22 Plum 24 Grapefruit 25 Pearled barley 25 Peach 28 Can peaches, natural juice 30 Soy milk 30 Baby lima beans 32 Fat-free milk 32 Low-fat yogurt, with sugar 33 Apple 36 Pear 36 Whole wheat spaghetti 37 Tomato soup 38 Carrots, cooked 39 Apple juice 41 All-Bran 42 Canned chickpeas 42 Custard 43 Grapes 43 Orange 43 Canned lentil soup 44 Macaroni 45 Pineapple juice 46 Banana bread 47 Long-grain rice 47 Bulgur 48 Canned baked beans 48 Grapefruit juice 48 Green peas 48 Oat bran bread 48 Old-fashioned porridge 49	Canned kidney beans 52 Kiwifruit 52 Orange juice 52 Banana 53 Potato chips 54 Special K 54 Sweet potato 54 Brown Rice 54 Linguine 55 Oatmeal cookies 55 Popcorn 55 Sweet corn 55 Muesli 5 White rice 56 Pita bread 57 Blueberry muffin 59 Bran muffin 60 Hamburger bun 61 Ice cream 61 Canned apricots, light syrup 64 Macaroni and cheese 64 Raisins 64 Couscous 65 Quick-cooking porridge 65 Rye crisp-bread 65 Table sugar (sucrose) 65 Instant porridge 66 Pineapple 66 Taco shells 68 Whole wheat bread 68	Bagel 72 Corn chips 72 Watermelon 72 Honey 73 Mashed potatoes 73 Cheerios 74 Puffed wheat 74 Doughnuts 75 French fries 76 Vanilla wafers 77 White bread 79 Jelly beans 80 Pretzels 81 Rice cakes 82 Mashed potatoes, instant 83 Cornflakes 84 Baked potato 85 Rice, instant 91 French bread 95 Parsnips 97 Dates 100 Compiled by: www LowGIHealth.com.au from various sources