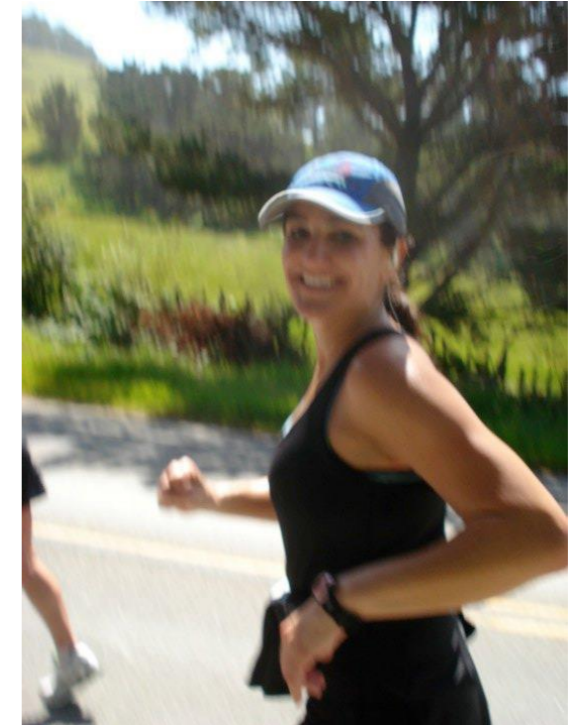


Finding Your Fuel

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Introduction



Content

- Definition of terms
- Fueling recommendations
- Pre-/During-/Post-race fueling
- Matching your best fuel choice

Carbohydrate

- Primary fuel source for body and brain
- Sources: Starches and sugars
- Complex vs simple
- Goals:
 - Adequate intake pre/during/post
 - Avoid using protein for energy

Protein

- Not a preferred fuel source for runs.
- Needed for protein repletion and to avoid muscle breakdown.
- Goals:
 - Adequate intake to avoid lean body mass loss

Fat

- Main energy source if no carbohydrate intake.
- Needed to ensure adequate caloric intake, maintain cellular health, avoid protein energy usage.
- Goals:
 - Adequacy, depends on intake levels of carb and protein

Fueling Recommendations: Pre-Race/Run

- 1-2 hours prior to race/run =
1g carb/kg
- Example: 150 lbs (68.2kg)
68g carb = 1 Cup Cream of Wheat and 1/4
cup raisins

Fueling Recommendations: During Race/Run

- 50-70g Carb/hour starting ~60 minutes into the race/run
- “Early and often” every ~60 minutes following the first ingestion
- ALWAYS practice running with nutrition prior to your race

Fueling Recommendations: Post-Race/Run

- Goal: Glucose and protein repletion within 1 hour or run
- 3:1 ratio carbohydrate to protein
- 30-60g carb and 10-20g quality protein
 - 1 cup Greek yogurt & 1 cup raspberries



Finding your Fuel

- Things to consider:
 - Gastrointestinal issues
 - Chew vs drink
 - Preference for sweets
 - Race distance
 - Ingestion rate
 - Caffeine?
 - Fuel/water belt?
 - Isotonic (amount of water needed to digest product into blood stream)



Carbohydrate Source

- Look for “-ose” in ingredients to determine sugar content
- Brown rice syrup = “bitter aftertaste”
- Sucrose = GI upset and bonking/hypoglycemia
- Fructose: can slow down absorption of other carb in the gel
- Glucose: quick energy, possible GI upset
- Maltodextrin: commonly paired with fructose

Product Matching: GU Gel

- What's in it?
 - 100 calories, 25g carb, 0g protein
 - 70-80% Maltodextrin
 - 20-30% Fructose
 - Amino Acids: Leucine, Isoleucine, Valine, Histidine
 - Caffeine (in some flavors)
 - Electrolytes: Sodium, Potassium
 - Antioxidants
 - Isotonic: 175mL



Is it for you?
Do you like sweets?

Product Matching: Hammer Gel

- What's in it?

- 80cal, 21-22g carb, 0 prot
- ~95% Maltodextrin
- ~5% Fructose
- Amino Acids: Leucine, Isoleucine, Valine (BCAAs) Alanine (aids in carb absorption)
- Caffeine (some flavors)
- Electrolytes: Sodium, Potassium
- Isotonic: 103mL



Is it for you?
Slightly easier to digest than Gu

Product Matching: Stinger Gel

- What's in it?
 - Honey (glucose/fructose)
 - 100cal, 27g carb, 26g sugar
 - Electrolytes: Sodium & Potassium
 - B Vitamins
 - Caffeine: some flavors
 - Isotonic: 575mL



Is it for you?
Do you like sweet taste?
Do you have GI issues?
Can you drink lots of water during your race?

Product Matching: Glukos

- What's in it?
 - 100% Glucose
 - 60 cal, 16g carb, 16g sugar
 - Electrolytes: Sodium & Potassium
 - No caffeine
 - Isotonic: 280mL



Is it for you?
Lighter taste (less sweet)
More packs/hour

Product Matching: Huma

- What's in it?
 - Carb source: Evaporated cane juice, Fruit puree, Brown rice syrup, Ground chia seeds (2:1 glucose:fructose ratio)
 - Electrolytes (In Energy Plus only): Sodium, Potassium, Calcium
 - Omega-3s in some flavors
 - Caffeine: Some flavors
 - Isotonic: 356mL

Is it for you?
Prefer fruit flavors
Like really sweet flavor
Prefer thinner gel consistency
Are you a purist?



Product Matching: Vespa

- What's in it?
 - Wasp extract amino acid complex
 - Bee propolis
 - Royal jelly

Is it for you?

Do you follow a ketogenic diet?

Usually accompanied by other carb source



Product Matching: Nuun

- Nuun Active: Electrolytes & Hydration
- Nuun Energy: Caffeine & B Vitamins
- Nuun Plus:
 - What's in it?
 - Dextrose & Sucrose
 - Electrolytes
 - Usually taken in combination with other Nuun products
 - 40cal, 10g carb, 9g sugar

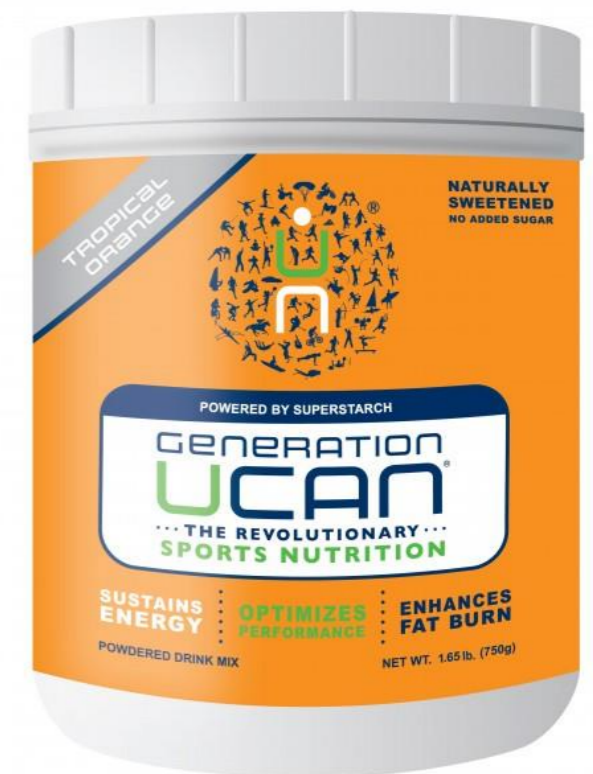


Is it for you?

- Are you running a very long distance?
- Would you prefer to drink your carb?
- Are you willing to wear a hydration belt?
- Do you have GI upset?
- Are you running in hot weather?

Product Matching: UCAN

- What's in it?
 - “SuperStarch” 100% Modified Corn Starch
 - Per 1 scoop: 80cal, 21g carb, 1g sugar
 - Vitamin C
 - Can add UCAN hydrate for electrolytes



Is it for you?
Do you prefer drinking your nutrition?
Possibly helpful for exercise-induced hypoglycemia
Do you carry a hydration belt?
Possibly helpful with GI issues

Product Matching: Tailwind

- What's in it?
 - Dextrose/Glucose and Sucrose
 - 100cal, 25g carb, 25g sugar
 - Electrolytes: Sodium, Potassium, Chloride, Magnesium, Calcium
 - Caffeine: certain flavors

Is it for you?
Do you prefer to drink nutrition over
chews/gels?
Do sugars give you GI issues?
Do you wear a hydration pack?
Minimalist approach



Other Option: Fueling with Foods?

- Things to consider...
 - Length of race
 - GI tolerance
 - Ability to eat and run



Whole Food Alternatives

- Recommendations:
 - Choose foods high in carb and relatively low in protein and fat
 - <3-5gm protein
 - Choose foods easy to chew/swallow

Whole Food Alternatives

- 2 Fig Newtons: 198cal, 40g carb
- 1 small box of raisins: 123cal, 34g carb
- 1 medium peeled apple: 77cal, 21g carb
- 1 large banana: 121cal, 31g carb
- 1/2 cup pretzels: 100cal, 24g carb
- 1 fruit “squeeze pouch”: 60-80cal, 24+g carb

Troubleshooting GI Upset

- Slow down ingestion rate (eg 1/2 gel pack every 20-30 minutes)
- Never take a gel/chew with a sports drink (sugar bomb!)
- ALWAYS practice with your product prior to race day
- Choose a caffeine-free product
- Check for Vitamin C in your product
- Choose a product with main carb source maltodextrin
- Check protein and/or fat content of fueling product

Bottom Line for Finding your Fuel

- Practice, practice, practice!
- Decide whether you want to drink, sip or chew your nutrition
- Decide how much extra water you are willing to drink
- Consider temperature and how much you will sweat
- Consider the length of your race
- Decide if/when you would like caffeine during your race

Questions

