



Performance Nutrition

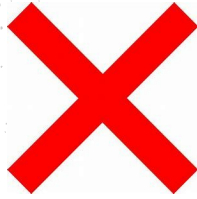
Waukesha Express

Elise Merucci

UMSPH Dietetics Student '25

Nutrition ... what is it?

Nutrition is not...



- Eating perfectly all the time
- Following “diet trends”
- Juice cleanses
- Counting calories

Nutrition is ...



- Fueling your body in a balanced way
- Fueling according to your body's needs
- Establishing a healthy relationship with food

Who am I?



- Student
 - Carthage College Psych
 - U of M Dietetics
- Athlete
 - Former swimmer
 - Current swimmer/runner

Nutrition for YOU

What is best for you?

- Nutrition is individual-be selfish!
- What works best for you might be different than what works for someone else
- Good nutrition is not measured by appearance



Overview

01 Energy Balance

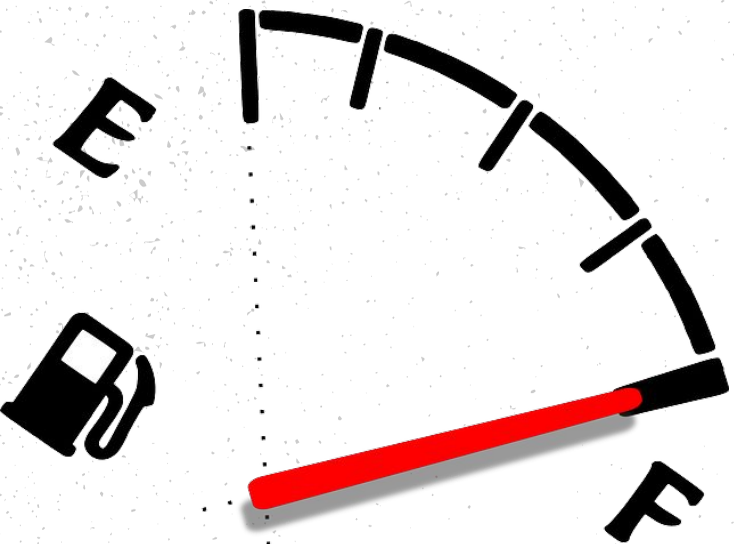
02 Performance
fueling timeline

03 Protein & recovery

04 Immunity &
Supplements

05 Miscellaneous
tips & resources

06 Questions and
wrap up



01

Energy Balance

What is energy balance?

- Energy consumed - energy used
- Processes that use energy
 - Typical daily activities
 - Learning
 - Digestion
 - Exercise
 - Recovery



Energy Balance

— Negative Energy Balance

- Sluggishness
- Less energy available for activity
 - Muscle strength and function, reduced recovery
- Reduced concentration, motivation, and cognitive functioning
- Misregulation of hormones & sleep

+ Positive Energy Balance

- Energized
- Energy available for activity
 - Increased strength, muscle building, improved recovery
- Increased motivation, concentration, and cognitive functioning
- Hormone & sleep regulation

Carbohydrates

- Energy
- Should make up majority of diet
- Main form of energy for muscles
- Brain uses carbohydrates
- Important for recovery and muscle building
- Carbohydrates are not all bad for you
- When should I eat carbohydrates?
 - Before, during, after practice/ meet
- Especially important for female athletes
 - Iron transport and hormones
 - Deficiency increases injury risk



Carbohydrate foods

- Breads
- Fruits & veggies
- Cereals
- Pasta
- Rice
- Crackers
- Honey

Protein

- Build and maintain muscle
- Helps transport blood and other important particles in the blood
- Important for athletes...
 - Build muscle
 - Recover
 - Perform better
- When should I focus on eating protein?
 - After workout/ meet
 - Should eat protein throughout the day
 - be careful of high protein content in the hour before



High protein foods

- | | |
|----------------|------------------|
| ◦ Eggs | ◦ Lean red meat |
| ◦ Greek yogurt | ◦ Pork |
| ◦ Chia seeds | ◦ Black beans |
| ◦ Milk | ◦ Cottage cheese |
| ◦ Chicken | ◦ Tofu |
| ◦ Salmon | ◦ Flax seeds |
| ◦ Chickpeas | ◦ Tuna |
| ◦ Turkey | |

Dietary fats

- **Myth:** Eating fats will make you fat
 - THIS IS NOT TRUE!
- Dietary fats are important and necessary
 - Brain health
 - Energy storage
 - Structure within the body
 - Hormone production and maintenance
 - Essential: Omega 6 and Omega 3s



Healthy fat sources

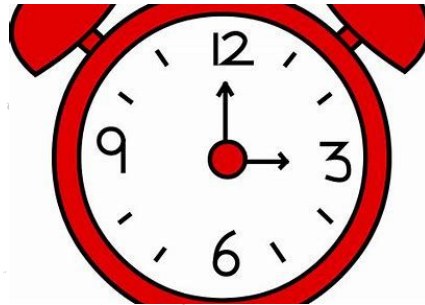
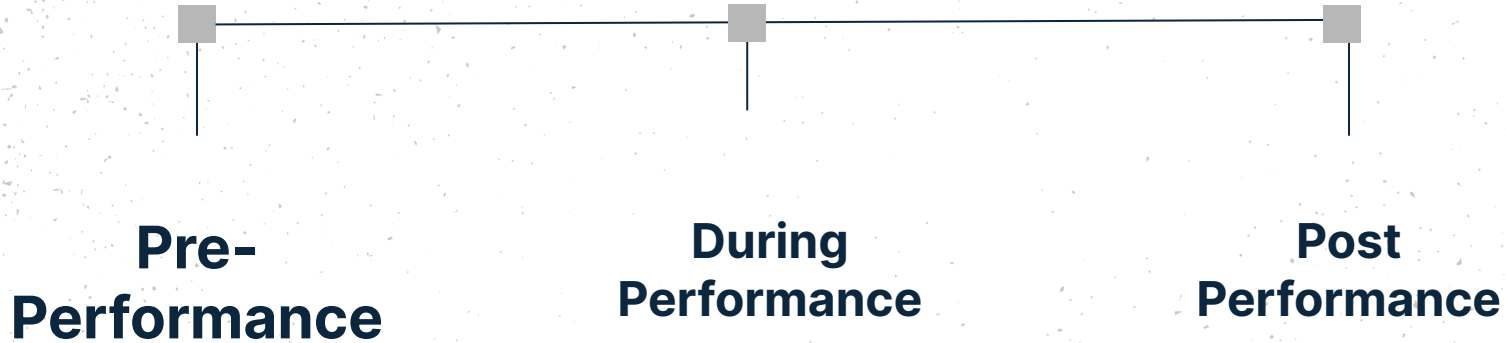
- Nuts
- Cheeses
- Avocados
- Milk
- Nut Butters
- Oils
- Salmon

Breakfast... yes it is important!

- Make it a habit
- Good for...
 - Energy levels throughout the day
 - Regulating sleep cycles
 - Controlling hunger levels
 - Focus
 - Energy in practice/ meet
- What can I incorporate into a balanced breakfast?
 - Eggs
 - Greek yogurt & fruit
 - Toast with nut butter or avocado
 - Oats with protein powder, nut butter, fruit
 - Fruit smoothie with protein powder



Performance fueling timeline



The night before

- Carbohydrates and proteins are both important!
- Carb Loading?
 - **Eating carbs is very important!!**
 - Overeating (eating past the point of being full) can make you tired and interrupt digestion..this is rare
- Protein is also important
 - Fueling with protein helps delay and prevent muscle breakdown and fatigue during a meet
- Examples:
 - Pasta with chicken, salmon
 - Rice with beans, tofu, chicken and vegetables
 - Whole grains (ie quinoa) with garbanzo beans, chicken and vegetables
 - Fruits, vegetables, salads, bread in addition



Pre-Performance

3- 4 hours before:

- Well-balanced meal
 - Aim for a balance of protein, carbohydrates, fats.
 - Lunch/ Dinner:
 - Sandwiches with turkey/ chicken, avocado, lettuce, tomato
 - Salads or pasta with chicken, salmon
 - Rice with beans, tofu, chicken and vegetables
 - Breakfast:
 - Eggs, bagel, oatmeal with fruit and honey
 - Pancakes/ waffles with fruit and nut butter
 - Yogurt with fruit,
 - Oats with nut butter, protein powder, fruits
- 3-4 g/ kg body weight of carbohydrates
 - Carbohydrates are very important!!
 - Insufficient intake increases risk of injury



Protein sources for non-meat eaters

- Beans: garbanzo, black, pinto
- Tofu
- Edamame
- Eggs
- Greek yogurt
- Lentils

Pre-Performance Hydration

- Hydrating regularly is important
- Hydrate with electrolytes:
 - Help your body hold onto water and carryout muscle functions
 - Sodium
 - Potassium
 - Magnesium
 - Calcium
- Consume at least half body weight in ounces throughout the day
- **TIP:** Carry a water bottle with you during the day
 - Create a routine that works well with schedule



Pre-Performance: 60 min window

30-60 min before:

- Focus on carbohydrates: Carbohydrates are the body's main source of energy, and easily digested
 - 30-60 grams in the hour prior to workout/ performance
 - Very important for high intensity
- Limit fiber, fat, and protein intake: these take longer to digest and can cause digestive distress during a workout
- Fluids: 8-12 oz



23 g carbs



10 g carbs



30 g carbs



27 g carbs



10 g carbs



19 g carbs

During practice or meet

What works best for you?

- Carbohydrates
 - 30-60 grams per hour
 - ~ 15 minutes
- Electrolytes & Fluids
 - Sodium, potassium, magnesium, calcium
 - Goal: about 20 oz fluid every 30 minutes



Post practice / competition: 30 minute window

30 minute window

- Carbohydrates AND protein
 - Carbohydrates speed up muscle recovery
 - Goal: 30-60 g carbohydrates & at least 15-20 g protein
- Keep snacks in bag for ride home
- Examples:
 - Chocolate milk
 - Protein shake and banana
 - Protein bars & fruit
 - Yogurt and granola
 - Dried fruit
 - Smoothies



30 g carbs



16 oz: 45 g carbs

Hours following...

- Post practice/ meet meal
 - Well- balanced meal within a 1-2 hours of training / competition
 - Snacks are important if waiting this long!
 - 1-2 g carbohydrates/ kg of body weight
 - At least 20 grams of protein
 - Fruits and vegetables
 - Hydrate: recommended about 24 ounces of water per pound of body weight lost
 - General rule of thumb: at least 24 oz of fluid

1 lbs	0.45 kg
110 lbs	50 kg
120 lbs	54 kg
130 lbs	59 kg
140 lbs	64 kg
150 lbs	68 kg
160 lbs	73 kg
170 lbs	77 kg
180 lbs	82 kg
190 lbs	86 kg

reference



32 oz

Let's talk about protein & recovery

MYTH: protein is too many calories

- Inefficient digestion->need energy supply
- Body needs energy to digest proteins and build muscle
- Avoid negative energy balance

Building Muscle:

- Carbohydrates
 - Essential for muscle building
- Building muscle while you sleep

Tip:

- Bring snacks with you throughout the day
- Consider a protein snack before bed
- Speed up recovery
 - Protein shake, yogurt and fruit, tart cherry juice

Eating a variety

- Gut microbiome
- Bacteria respond to our food intake
- ↑ variety ↑ defense
- Sleep
- Energy
- Mood & mental health



Good gut foods:

- | | |
|----------------|--------------|
| • Greek yogurt | • Bananas |
| • Sourdough | • Oats |
| • Kefir | • Vegetables |
| • Kombucha | • Grains |
| • Kimchi | • Greens |

Sleep

- Creating a healthy evening sleep routine
 - Avoid screens before bed
 - Relax
 - Stretch, read, journal
 - Do not sleep next to your phone
- Natural light in the morning > screens
 - Avoid looking at your phone right when you wake up



Supplements

- A healthy diet should be your first priority
- Be cautious- not regulated
- **How to know if a supplement is third party tested?**
 - Look for a certification stamp on the label
 - Test for quality, manufacturing, and labeling accuracy
- NCAA mandates



graphic from strongerbyscience.com

Protein products



Caffeine $\neq$ energy



- Caffeine affects everyone differently
- Make sure caffeine intake does NOT replace food
- Some sources controversial with NCAA
- Can aid with performance if not overdone and taken at the right time
- **Good sources:** coffee, tea, nuun sport, honey stinger chews

Pre-workout and other supplements

- Many have “hidden ingredients”
- Caffeine anhydrous is very concentrated
- Synthetic ingredients
- NCAA mandate <500 mg within 8 hrs
- FDA recommends <400 mg

A few closing tips

Sleep

- 7-8 hours (if not more)
- Consistent schedule
- Stretch before bed
- Don't sleep with your phone by you

Supplements

- Must be sport safe
- Should aim to get what you need through diet

Eat if you're hungry

- If you're body is hungry, you are likely in a negative energy balance
- Eat for energy
- Balance & Moderation

Take your recovery seriously

- Performance improves with good recovery strategies

Pack snacks on the go

- Student athletes are busy and need to eat throughout the day

Keto, whole 30 & more

- Focus on a whole diet
- Be cautious of nutrition information on the internet

Questions:



Non-meat protein?

- Eggs
- Rx bar
- Aloha bars/shakes
- Cashews
- Go macro bars
- Greek yogurt
- Black beans
- Tofu
- Pumpkin seeds

How much is too much?

- Balance is priority-we are not perfect
- Focus on what we should eat, not what to avoid

- Tuna
- Bobo's protein
- Chia seeds
- Chickpeas
- Cottage cheese
- Milk
- Salmon
- Edamame
- Almonds

Making good meals

- Meal plan/ prep balances meals
- Pick things you look forward to eating
- Branch out!

Restaurants on the Go

- Sub shops
- Noodles
- Chipotle
- Core life
- Sweet greens
- Panera
- Jimmy Johns

Travel snacks

- Lara bars, rice cakes, granola bars, oat energy bites
- Protein shakes/ bars
- Trail mix
- Electrolyte drinks
- Sandwiches
- Hard Boiled eggs
- Fruit

Resources

Reading

- [ROAR: female athlete nutrition](#)
- [RED-S information \(underfueling\)](#)
- [Today's Dietitian](#)

Instagram:

- @ealeatnutrition
- @unbeatablewellness (submit questions)

Spotify:

- The Eat For Endurance Podcast
- The Nutrition Science Podcast
- The Performance Nutrition Podcast
- Female Athlete Nutrition Channel

Websites

- [NCAA substance guidelines](#)
- [Gnarly Nutrition \(gognarly.com\)](#)
- [Klean Athlete](#)
- [Pre-workout supplement review](#)
- [Honey Stinger](#)



Contact me with questions, comments etc



Elise Merucci
Dietetics Student

Email:
meruccie@umich.edu

Phone:
616-710-2394



Instagram:
@unbeatable_wellness

Note:

I am somewhat limited in what I can do as a student and not yet a registered dietitian. If your needs are beyond my ability I am happy to recommend you to other resources.