

## Science to Simple: Making Nutrition Science Accessible and Practical



### Indiana Academy of Nutrition and Dietetics

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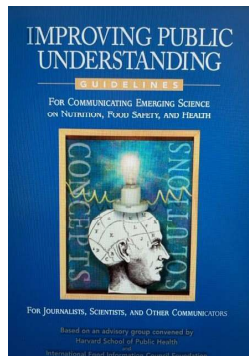
*I have no disclosures related to sponsors or business contracts to report*

## Science to Simple - Translational Research

- Encourages and promotes multidisciplinary collaboration among laboratory and clinical researchers
- Incorporates the **desires of the general public** with **communities being engaged** to determine their needs for health innovation
- Identifies and supports the adoption of best medical and health practices

Source: Translational Research Institute at University of Arkansas for Medical Sciences – [www.tri.uams.edu](http://www.tri.uams.edu)

## Tips for Communicating Science



<https://foodinsight.org/wp-content/uploads/2015/11/Harvard-IJC-Guidelines.pdf>

1. Will your communication enhance public understanding of diet and health?
2. Have you put the study findings into context?  
SCIENCE TO SIMPLE
3. Have you disclosed the important facts about the study?

## Know Your Audience

*...otherwise known as "Behold the Mighty Ham Ball"*



- What is important to your audience or your client/patient?
- What is your audience concerned about? What motivates them? What do they **like to eat**?
- How can science impact people on a daily basis?
- How can implementing recommendations from solid science solve people's problems?
- Our audience must **TRUST** us as professionals who know what we are talking about.
- We must **LISTEN** to concerns and challenges of our audience.



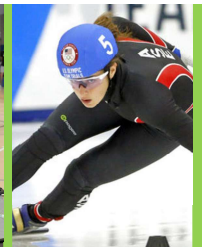
Nolan



Tracy



Gracien



Katherine

## Meet our Athletes

## Meet Nolan

First-year swimmer at **The Ohio State University**

- 18 years old
- 6'2"
- 200#

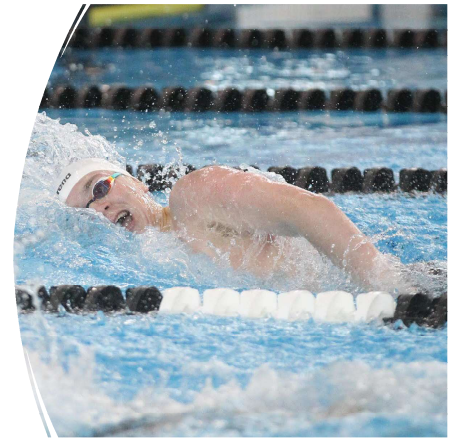
• **Main Goals:**

- Get stronger
- Swim faster
- Recover better
- Win the Illinois State Title in the 200 FREE



## Nolan – Nutrition Focus Areas

1. Increase total energy intake
2. Boost muscle energy during training
3. Optimize recovery fuel
4. **TEAMWORK** with Nolan and Mom



## Nutritional Needs in the Professional Practice of Swimming

- Aquatic sports include a variety of sport disciplines with varying degrees of metabolic, strength, and technical demands.
- As the displacement speed of the swimmer increases, the drag forces also intensify, requiring an increase in strength as performance levels rise.
- An adequate nutrition and supplement plan can improve the health and performance of swimmers.

Dominguez, R., Sánchez-Oliver, A. J., Cuenca, E., Jodra, P., Fernandes da Silva, S., & Mata-Ordóñez, F. (2017). Nutritional needs in the professional practice of swimming: A Review. *Journal of Exercise Nutrition & Biochemistry*, 21(4), 1–10. <https://doi.org/10.20463/jenb.2017.0030>

## Carbohydrate Intake Recommendations

- 6-8 g/kg/day (2.7-3.6 g/#/day) on days with moderate to high training volume with low intensity.
- 10-12 g/kg/day (4.5-5.5 g/#/day) on days with moderate to high volume high intensity.
- 1-2 g/kg (.5 to 1.0 g/#) of carbohydrate within 3-4 hours of training.

## Protein Intake Recommendations

- 1.2 - 2.0 g/kg/day (.55 - .9 g/#/day) depending on level of training and goals.
- 2.0 g/kg/day (.9 g/#/day) when training at high intensity and to maximize power and strength.
- 0.3 g/kg (0.14 g/#) protein intake at meals and snacks 5-6 times per day to maximize protein timing.
- Consume high bioavailable protein sources each day.
- To maximize recovery, ingest 20-25 g of protein with 1 g cho/kg (.5 g/#) after training.

## Nutrient Needs - Nolan

### **Average daily nutrient needs (180#):**

**CALORIES:** 3,500 – 4,000 per day (increase by 1,000+)  
**CARBOHYDRATE:** 600 grams or more (3-4 g of carbohydrate per pound per day)  
**PROTEIN:** 180 grams (2.0 grams per kg or 0.9 g of protein per pound per day evenly distributed)  
**RECOVERY:** 90 grams carbohydrate (.5 g of carbohydrate per pound) with 15-30 grams protein post-workout and eat a meal within 1-2 hours



### Early Morning and Afternoon Practices – Sample Day

**Night before:** 2 granola bars + a big handful of peanuts + water

**Early morning pre-workout:** 20-ounce bottle of apple juice + water

**Post-workout:** Zone bar and 20-ounce bottle of apple juice + water

**Breakfast:** 4 eggs + 4 slices French toast + extra water

**Lunch:** Steak burrito + water

**Snack:** Banana + handful of peanuts + handful of Wheat Thins + water

**Pre-workout:** Quesadilla easy on the chicken/cheese + handful of grapes + 20-ounce apple juice + water

**Post-workout:** Zone bar + 20-ounce apple juice + water

**Dinner:** 6 ounces grilled chicken breast + side of veggies + potatoes + water



### Nolan's Keys to Boost Performance

- ✓ Changing **WHEN** I eat and knowing **WHY** I need to eat at certain times
- ✓ Increasing carbs and focusing on refueling every day
- ✓ Replacing water with apple juice – simple!
- ✓ I eat foods I like and am used to eating
- ✓ Being consistent
- ✓ I know I am fueling my body well
- ✓ I still go on my donut run every Sunday morning!



“I’m kind of known for my apple juice”

-- Nolan

### Karyn's Nutrition Tips

- ✓ Understanding misconceptions around food like “sugar is bad for you.”
- ✓ Offering practical, easy-to-implement solutions at home, at meets, and when we were on the road.
- ✓ Staying in close touch so we could brainstorm food ideas on the road and when we needed to make modifications.
- ✓ “You didn’t always give Nolan the answers I thought you would.”



### 2023 Illinois State Champion

### 200 FREESTYLE!



### Meet Tracy

Endurance and Ultra-Endurance runner and walker; health enthusiast

- 62 years old
- 5'0"
- 110-115#

#### Main Goals:

- Maintain a healthy body
- Continue to be able to run endurance and ultra-endurance races
- Stay strong / maintain muscle mass
- Repair tissue / recover from training
- Decrease inflammation

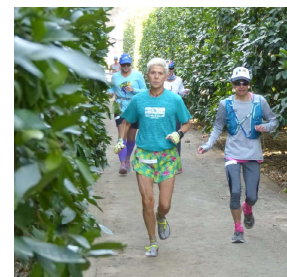


### Ultra-Endurance Competition

#### \*Events lasting 6 hours or more

\* Ultra-endurance athletes must follow appropriate training regimens and nutritional practices to recover and prepare for daily training and remain injury free and healthy.

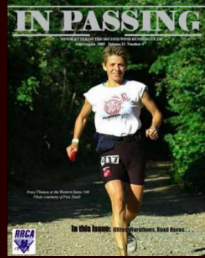
\* Rehydration after exercise, together with the timing and method of increased food intake to cope with heavy training, are essential for optimal performance.





## Tracy – 21 Years Ago!

- 40 years old in 2002
- 5'0" / 105#
- Lifelong athlete
- Marathoner turned 100-miler
- Raw foods diet primarily
- Wants to stay lean, stay within 100-105#, and improve energy during training and competition



## Daily Fuel Needs

- 2,850 calories
- Carbohydrate Needs: 10 g CHO/kg = 470 grams / 1,880 calories (66% of energy intake)
- Protein Needs: 1.8 g protein/kg = 85 grams / 340 calories (12% of energy intake)
- Fat Needs: 1.5 g fat/kg = 70 grams / 630 calories (22% of energy intake)
- \*\*Based on 2-3 hours of training per day
- Fuel during training: 30+g of carbohydrate per hour
- Recovery fuel: 70 g CHO / 15-20 g PRO within 30-60 minutes and again within 2 hour of heavy training

## Food Tidbits

- Homemade sports drink: purified water + pure maple syrup + electrolytes (sodium, potassium, magnesium) worked well
- Raw nuts were a staple for calories
- Sushi 3-4X/week for fish protein
- Sprouted breads ok

### Curried Grain and Nut Dish

1 C barley, soaked 3 days  
 1/2 C almonds, soaked 12-24 hours, blanched, chopped  
 1 C sunflower seeds, soaked 5-6 hours  
 1/4 C flax seed oil  
 2 T Spike vegetable seasoning

### Curry Sauce

1 C almonds, soaked 12-24 hours, blanched  
 16 oz. purified water  
 2 medium sized Fuji apples, cored & diced  
 1 C raisins  
 1 t curry powder  
 2 T flax seed oil  
 2 T Braggs or to taste  
 1 medium sized ripe banana

## SUCCESS!



- **Across The Years 72-hour run, 2006-2007: Female Winner, 4th overall and broke the 15-year course record with 250.72 miles**
- **Badwater Ultramarathon: 3rd Female, 2007 in 37:26:44**

The Badwater Ultramarathon describes itself as "the world's toughest foot race." It is a 135-mile course starting at 282 feet below sea level in the Badwater Basin, in California's Death Valley. It ends at an elevation of 8,360 feet at Whitney Portal, the trailhead to Mount Whitney.

## CURRENT FOCUS

1. Optimize meals on a vegan diet.
2. Eat intuitively.
3. Eat more anti-inflammatory foods and nutrients.
4. Maintain / build muscle.
5. Maximize her body's ability to keep training and competing.



### Review Article Anti-Inflammatory Properties of Diet: Role in Healthy Aging

Kristina Stromnes<sup>1,†</sup>, Angela G. Correas<sup>1,†</sup>, Jenny Lehmann<sup>2,3</sup>, Juan Gambini<sup>1,4,†</sup>

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- Inflammation is acutely activated by infections, trauma, toxins, or allergic reactions.
- However, if it becomes chronic, inflammation can end up stimulating the development of diseases such as cardiovascular disease, autoimmune disease, neurological disease, or cancer.
- Additionally, during aging, inflammation becomes increasingly more chronic.

## Key points

- Inflammation is a key physiological process in immunity and tissue repair.
- As we age, inflammation becomes more chronic.
- Specific foods have anti-inflammatory properties, especially **fruits, veggies, whole grains, fish, nuts, seeds, legumes, and oils.**
- A combination of foods rich in compounds with anti-inflammatory activity could exert beneficial effects during aging and in pathologies associated with inflammation and in reducing detrimental effects of foods with pro-inflammatory activity.
- Anti-inflammatory foods in our diet could help alleviate the inflammatory processes derived from diseases and suboptimal diets and promote healthy aging.



## Phytochemicals

- |                 |               |
|-----------------|---------------|
| Carotenoids     | Phytosterols  |
| Limonoids       | Polyphenols   |
| Glucosinolates  | Phytoestrogen |
| Terpenoids      | Fibers        |
| Polysaccharides | Saponins      |

### FOODS TO EAT MORE OFTEN TO LOWER INFLAMMATION

**PRODUCE** - Dark, leafy greens, especially beet greens, Swiss chard, and cooked spinach

Berries – blueberries, blackberries, strawberries, raspberries, and other berries

Citrus fruits – including oranges, tangerines, and grapefruit

Tart cherry juice cauliflower broccoli cabbage cherries tomatoes mushrooms beets peppers grapes

**PROTEINS** - Nuts - especially walnuts, peanuts, cashews, almonds, macadamia nuts, pecans, hazelnuts, and nut butters

Seeds – especially sunflower seeds, pumpkin seeds, ground flax seeds, chia seeds, hemp seeds, sesame seeds, and seed butters

Fish, especially salmon, tuna, herring, sardines, trout, tilapia, shad, mullet, and pollock

Dried beans and peas (legumes) – especially lima beans, Adzuki beans, white beans, black beans, lentils, and hummus

Eggs

**GRAINS AND STARCHES** - White, yellow, and purple potatoes sweet potatoes and yams whole grain cereals whole grain bread Whole grains like rye, barley, quinoa, and couscous

**FATS** - Avocados and avocado oil

Fish, especially salmon, tuna, herring, sardines, trout, tilapia, shad, mullet, and pollock

Nuts - especially walnuts, peanuts, cashews, almonds, macadamia nuts, pecans, hazelnuts, and nut butters

Seeds – especially sunflower seeds, pumpkin seeds, ground flax seeds, chia seeds, hemp seeds, sesame seeds, and seed butters

Oils – especially extra virgin olive oil (EVOO), safflower oil, grapeseed oil, sesame oil, and canola oil

**LOVE FOODS and EXTRAS** - Dark chocolate! Try a 1-ounce piece lack and green tea turmeric garlic ginger herbs and spices



## Tracy's Diet

- Vegan
- Raw foods 25-50% of meals
- Gluten-free
- Tempeh, legumes, nuts, seeds, and hemp hearts
- Avocados and olives
- Sweet potatoes and rice
- Fresh, local foods
- Foods to boost energy for training and maximize health and recovery
- Foods to enhance well-being and longevity



## Tracy's Routine

- Fresh, local foods
- Homemade gel for training and races
- Meals =
  - Colorful fruits and veggies
  - Vegan proteins
  - GF Grains
  - Healthy fats
  - Flavor!

Colors	Fruits and Veggies
Green	Broccoli, Brussels Sprouts, Bok Choy, Cauliflower, Cabbage, Kale, Collards, Mustard Greens, Green Peppers, Kiwi, Spinach, Limes, Leeks, Avocados
Orange/Yellow	Oranges, Tangerines, Yellow Grapefruit, Peaches, Lemons, Papaya, Pineapple, Nectarines
Red/Purple	Red Grapes, Purple Grape Juice, Cherries, Berries, Plums, Prunes, Raisins
White	Onions, Chives, Garlic

Tracy's Homemade Endurance Goo	
Nutrition Facts	
Serving Size	0.3 × full recipe
Amount Per Serving	
<b>Calories</b>	<b>404.7</b>
% Daily Value*	
Total Fat	22.6 g 29 %
Saturated Fat	2.5 g 13 %
Trans Fat	0 g 0 %
Cholesterol	0 mg 0 %
Sodium	756.1 mg 33 %
Total Carbohydrate	49.4 g 18 %
Dietary Fiber	5.7 g 20 %
Total Sugars	35.8 g
Added Sugars	16.3 g 33 %
Protein	6 g
Vitamin D	0 mcg 0 %
Calcium	47.1 mg 4 %
Iron	1.8 mg 10 %
Potassium	318.3 mg 7 %

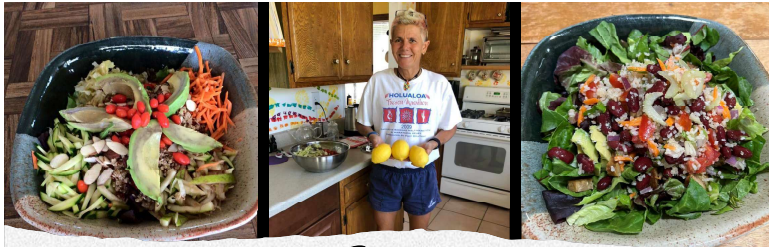
\*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Food facts at crosstimer.com

### Tracy's fueling plan during training and competition

- Homemade Gel (3 4-ounce servings)**
- 1 cup raw nuts
  - 1 cup dates or figs or fruit
  - 1 teaspoon Himalayan salt
  - 1 cup water





## Tips from Tracy

\*Enjoy a wide variety of fresh foods!

\*Every athlete is different in terms of what they can tolerate in training and competition (solids, liquids, specific foods, gels, bars, and drinks)

\*Be open to exploring alternative options to traditional endurance products with athletes (drinks, gels, homemade bars).

\*Be positive about and open to athletes' individual food preferences and personal backgrounds.

## Meet Gracien

Graduate student – University of Arkansas

- 23 years old
- 6'0"
- 250#
- **Main Goals:**
  - Lose extra weight he gained for his sport (30-40#)
  - Eat to boost overall health and well-being instead of to get bigger
  - Maintain muscle mass while getting leaner
  - Move from strength and power to fitness and health



## FOCUS AREAS

1. Decrease calories from 4,000+ per day to ~3,000
2. Maximize protein to help maintain lean mass while losing bodyfat
3. Optimize anti-inflammatory foods to help with healing and recovery
4. Plan and cook more meals at home

## Systematic review and meta-analysis of protein intake to support muscle mass and function in healthy adults

- Untrained or trained healthy men and women 18 or older from 74 randomized control trials.
- Does increased protein intake improve lean body mass in young and old healthy adults?
- The recommended protein intake worldwide for healthy adults is in the range of 0.8-0.9 g protein/kg body weight/ per day.
- **A higher protein intake (1.2 – 1.6 g/kg/day) has been recommended to maintain or increase lean body mass in young and old adults.**

Nunes, E. A., Colenso-Semple, L., McKellar, S. R., Yau, T., Ali, M. U., Fitzpatrick Lewis, D., Sherifali, D., Gaudichon, C., Tomé, D., Atherton, P. J., Robles, M. C., Naranjo-Modad, S., Braun, M., Landi, F., & Phillips, S. M. (2022). Systematic review and meta-analysis of protein intake to support muscle mass and function in healthy adults. *Journal of Cachexia, Sarcopenia and Muscle*, 13(2), 795–810. <https://doi.org/10.1002/jcsm.12922>

## Results

- Additional protein ingestion of 1.6 g of protein/kg/day or higher in younger (<65 years) subjects led to small increases in lean mass when combined with resistance exercise.
- The effect on increases in lean body mass in older (65 years or older) adults with protein intakes of 1.2 to 1.59 g of protein/kg/day was significant.
- Overall, the effect of protein intake on lean body mass was more pronounced in younger subjects.
- Factors including protein intake per meal may also affect results.

## Fueling for the Field: Nutrition for Jumps, Throws, and Combined Events

Nutrient and Energy Requirements	Daily
Calories	3,600 – 5,400
<b>Protein</b>	<b>1.5 to 2.2 g/kg</b>
Carbohydrate	5.0 to 8.0 g/kg
Fat	0.8 to 1.5 g/kg

Sygo J, Kendig Glass A, Killer SC, Stellingwerff T. Fueling for the Field: Nutrition for Jumps, Throws, and Combined Events. *Int J Sport Nutr Exerc Metab*. 2019 Mar 1;29(2):95-105. doi: 10.1123/ijsem.2018-0272. Epub 2019 Mar 13. PMID: 30676152.



## Higher Protein Diets and Weight Loss

- In a meta-analysis reviewing protein intake and weight loss, higher-protein diets were found to aid with weight loss.
- Protein intakes of 1.2 to 1.6 g/kg/day were considered “high protein.”
- Specific protein quantities of at least 25-30 grams of protein per meal are also recommended.
- Higher-protein diets were noted to result in improvements in appetite, body weight management, cardiometabolic risk factors, and overall health outcomes.



Leidy HJ, Clifton PM, Astrup A, Wycherley TP, Westertep-Plantenga MS, Luscombe-Marsh ND, Woods SC, Mattes RD. The role of protein in weight loss and maintenance. *Am J Clin Nutr*. 2015 Jun;101(6):1320S-1329S. doi: 10.3945/ajcn.114.084038. Epub 2015 Apr 29. PMID: 25926512

## Gracien’s Plan

- Move from strength (size) and power to strength (lean) and fitness
- “It’s less about eating as much as I can and more about eating to be healthy”
- Decrease inflammation – chronic injuries
- Recover and repair
- Feel better / less pain
- Cook more on my own!



## Gracien’s Plan

- Recommended protein intake for weight loss / and to maintain lean mass – 1.4 g/kg/day or 160 grams per day.
- Divide protein into three meals and recovery fuel after workouts:
  - 40 grams with breakfast
  - 40 grams with lunch
  - 40 grams with dinner
  - 40 grams for recovery from Gracien’s 1-hour workout



## Easy Budget-Friendly Protein Options

- Milk
- Greek yogurt
- Cheese and cottage cheese
- Eggs
- Canned beans
- Nuts
- Nut butters
- Seeds
- Poultry, fish, and meat in bulk
- Canned tuna and salmon
- Skillet meals; crock pot meals



### Southwest Skillet Meal

Preparation time: 5 minutes  
Cooking time: 10-12 minutes  
Number of servings: 6

#### Ingredients

- 1-pound lean ground turkey or ground beef (at least 50% lean)
- 1 15-ounce can tomato sauce
- 1 green pepper
- 1 red or yellow pepper
- 1 1.5-ounce package taco seasoning
- 1 1/2 cups elbow macaroni (try whole grain macaroni)
- 1/2 cup shredded cheddar cheese
- 1 1/2 cups water



## FAST SIMPLE MEALS

- 2 cups produce
- 4 ounces protein
- Whole grain
- Healthy fat



#### Breakfast

- 1 cup orange juice
- 1 banana
- 1 cup low fat milk with coffee
- 3 scrambled eggs
- 2 slices whole grain toast/jam

#### Dinner

- 2 cups steamed broccoli
- 4 ounces grilled chicken
- 1 cup whole wheat pasta/sauce
- Whole grain bread/olive oil

#### Lunch

- 1 apple
- 1 cup baby carrots
- Turkey and cheese sandwich on whole grain bread with avocado spread and veggies
- Cookies

#### Recovery Smoothie

- 1 cup pineapple juice
- 1 cup frozen peaches
- 1 scoop protein powder
- 1/2 cup Greek yogurt
- 2 T chia seeds
- Ice



## Meet Katherine

- \*World Champion speed skater
- \*Two-time Olympic medalist in the 2010 Olympics - speed skating
- \*Health and well-being advocate

\*34 years old  
\*HEALTHY!

#### Main Goals:

- Enjoy eating and moving my body
- Cook real food – food from my Grandma’s kitchen!
- Enjoy life that is wellness-oriented vs. performance-oriented

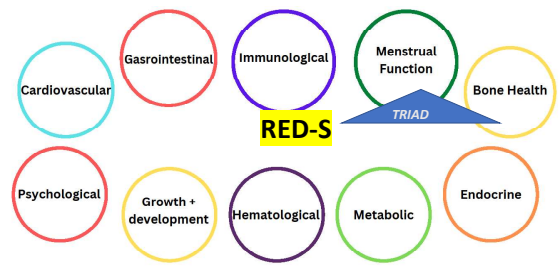




## Low Energy Availability (LEA)

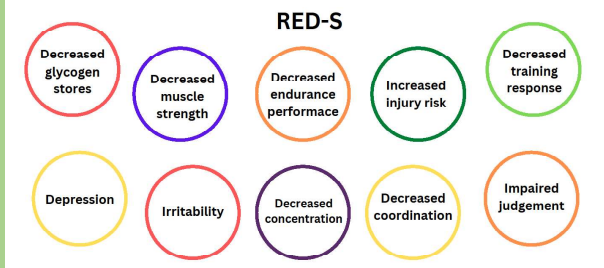
- **Low energy availability** occurs when an individual's dietary energy intake is insufficient to support the energy expenditure required for health, function, and daily living, once the cost of exercise and sporting activities is taken into account.

## Health Consequences of Relative Energy Deficiency in Sport (RED-S)



Adapted from Mountjoy, M. "Relative Energy Deficiency in Sport: Clinical Approach in the Aquatic Disciplines," October 2015. ASPETAR Sports Medicine Journal.

## Potential Performance Effects of Relative Energy Deficiency in Sport



## UPDATED IOC Consensus Statement on REDs

- Since the 2018 REDs consensus, there have been more than 170 original research publications advancing the field of REDs science.
- Focus areas of research include the role of low carbohydrate availability, the relationship between mental health and REDs, and the impact of LEA on male athletes.
- A new Physiological Model and REDs Clinical Assessment Tool-Version 2 are introduced in this paper to facilitate the detection and clinical diagnosis of REDs.

Mountjoy M, Ackerman KE, Bailey DM, et al 2023 International Olympic Committee's (IOC) consensus statement on Relative Energy Deficiency in Sport (REDs) *British Journal of Sports Medicine* 2023;57:1073-1097.

## INJURIES: Correlation between menstrual irregularity (MI) and musculoskeletal injury (INJ)

- 249 female athletes from 3 high schools
- Competed in 33 interscholastic, school-sponsored sports teams, dance teams, cheerleading, or pompop squads during 2006-2007 school year.
- Prevalence of MI and INJ were 19.7% and 63.1%.
- Athletes who reported MI sustained a higher percentage of severe injuries.
- Athletes with MI were almost 3 times more likely to sustain an injury resulting in 7 or more days lost from sport than those with 7 or fewer days lost from sport.

Thein-Nissenbaum JM, Rauh MJ, Carr KE, Loud KJ, McGuire TA. Menstrual irregularity and musculoskeletal injury in female high school athletes. *J Athl Train*. 2012 Jan-Feb;47(1):74-82. doi: 10.4085/1062-6050-47.1.74. PMID: 22488233; PMCID: PMC3418118.

## Assessment and Management - Sports Dietitians in Australia

55 Sports Dietitians in Australia were surveyed about their assessment and management practices when working with athletes at risk for low energy availability.

### Athletes at risk most frequently presented with:

- Recurrent injury or illness (63%)
- Inability to meet daily energy requirements due to reduced dietary intake (63%)

### Sports Dietitians most often assessed:

- Dietary intake (90%)
- Menstrual dysfunction (89%)
- Training load (75%)

### Sports Dietitians most often monitored:

- Residual (ongoing) fatigue (96%)
- Training performance (92%)
- Recovery between sessions (92%)

Bowler AM, Coffey VG, Cox GR. Sports Dietitian practices for assessing and managing athletes at risk of low energy availability (LEA). *J Sci Med Sport*. 2022 Jun;25(6):460-465. doi: 10.1016/j.jsams.2022.02.002. Epub 2022 Feb 16. PMID: 35272936.

## What Concerns Do Sports Dietitians Most Commonly See with REDs?

- Amenorrhea
- Bone Stress injuries
- Other sports-related injuries
- Recurrent Illnesses
- Interruption in competition
- Mood disturbances
- Extreme fatigue
- Gastrointestinal problems
- Underweight
- Under-fat
- Restrictive behaviors



Jennie Zabinsky, M.Ed., RD  
Owner - Bliss Nutrition  
Consultant - Virginia Tech  
Athletics



Christina Weidman, MS,  
RDN, CSSD, LDN  
Owner - CW Sports  
Nutrition  
Advanced Clinical  
Dietitian - Athletics  
Northwestern Medicine

## Take Home Messages from Katherine



- Be aware of the “5 Ring Fever” and the constant pursuit of winning at all cost. As sports professionals, treat the **WHOLE** athlete, not just the numbers.
- Challenge fat shaming and unrealistic weight and body composition goals.
- Be a resource and a support for athletes’ **health** as well as their performance.
- Be aware of what your athletes are doing to meet their performance goals. Providing positive reinforcement for doing well might encourage athletes to restrict or avoid foods if it helped them get to this point.
- Encourage times where athletes can be less focused on their food and enjoy eating for pleasure.
- Encourage mindful eating.



*How do we help clients, patients, and consumers eat well, move their bodies in ways that feel good to them, and support personal well-being to nurture a vibrant HEALTH SPAN?*

143-127

Employ simplicity and positivity to foster simple wellness opportunities each day

## Current Fruit and Vegetable Intake in the US

- 12.3% of adults meet the 1.5 – 2 cups of fruit recommended per day
- 10.0% of adults meet the 2 – 3 cups of vegetables recommended per day
- **2 cups each meal – provide simple options!**



## Fruits, vegetables, and health: A comprehensive narrative, umbrella review of the science and recommendations for enhanced public policy to improve intake

- Optimal consumption of fruits and vegetables can help reduce inflammation, prevent effects of various chronic diseases, and extend life expectancies along with an individual's healthy years.
- Current global intakes of fruit and vegetables are severely below recommendations.
- **Eat least 2 servings of fruit and 3 servings of vegetables a day.**
- **Optimal consumption of produce resulted in a 56% reduction in all-cause mortality.**
- **Diet has been suggested to be a more important factor associated with disease burden in the United States than both physical activity and BMI.**

Wallace, T. C., Bailey, R. L., Blumberg, J. B., Burton-Freeman, B., Chen, C. O., Crowe-White, K. M., Drewnowski, A., Hooshmand, S., Johnson, E., Lewis, R., Murray, R., Shapses, S. A., & Wang, D. D. (2019). Fruits, vegetables, and health: A comprehensive narrative, umbrella review of the science and recommendations for Enhanced Public Policy to improve intake. *Critical Reviews in Food Science and Nutrition*, 60(13), 2174–2211. <https://doi.org/10.1080/104088398.2019.1632258>

## Fruit and vegetable consumption and all-cause, cancer and CVD mortality: analysis of Health Survey for England data

- Review of over 65,000 participants 35 years or older in the 2001-2008 Health Surveys for England
- Fruit and vegetable intake was associated with reduced all-cause mortality (0.67 HR for consumption of **7+ portions a day**)
- Fruit and vegetable intake was associated with reduced cancer and cardiovascular mortality
- Vegetables may have a stronger association with reduced mortality than fruit
- Consumption of vegetables or salad was most protective

Oyebode O, Gordon-Dseagu V, Walker A, et al Fruit and vegetable consumption and all-cause, cancer and CVD mortality: analysis of Health Survey for England data *J Epidemiol Community Health* 2014;68:856-862.

## KEY PRODUCE GROUPS FOR HEALTH

Food groups	Examples
Cruciferous vegetables	Broccoli, cauliflower, cabbage, kale, arugula, Bok choy, turnips, watercress, rutabaga, and collard greens.
Dark-green leafy vegetables	Kale, turnip greens, cabbage, broccoli, Swiss chard, spinach, mustard greens, and romaine lettuce.
Citrus fruits	Oranges, tangerines, lemons, limes, grapefruit, kumquats, and pomelos.
Dark-colored berries	Blackberries, raspberries, and blueberries.

## Thank You!



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## More *Science to Simple?*

Stay in contact with Susie for more **Science to Simple** “research to practice” recommendations and newsletter.

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Eat Move Groove on YouTube



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