

EATING SUSTAINABLY FOR ACTIVE PEOPLE



WELCOME!



Jessica A. Chon, RD, CSSD
Nutrition Scientist at Clif Bar &
Company



Stephanie Howe, PhD
Elite Ultra-Runner and Clif Nutrition
Advisory Council Member



DISCLOSURES

Jessica Chon

- Clif Bar & Company – Employee

Stephanie Howe

- Clif Bar & Company - Nutrition Advisor, Athlete
- NOW Foods - Ambassador
- Big Spoon Roasters – Ambassador
- Protect Our Winters – Athlete Ambassador



REMINDERS



Awarded 1.0 Continuing Education Credit

- Commission on Dietetics Registration (CDR)



Complete the post-webinar survey for CEU-claiming information



**Slides and handouts are available at:
[ClifBar.com/Nutrition-Education](https://www.clifbar.com/nutrition-education)**



LEARNING OBJECTIVES

At the end of the webinar the attendees will be able to:

- Articulate the connection between eating to support active lifestyles and planetary health
- Evaluate the evidence surrounding plant-based diets to fuel physical activity
- Develop recommendations to help active people consume a healthier, more sustainable diet that aligns with their fitness goals and personal values



ROADMAP

**Why does
sustainability matter?**

**What does
sustainable eating
look like?**

**Can a plant-based
diet fuel physical
activity?**

**What are steps
towards consuming
a nutritious,
sustainable diet?**

A man wearing a plaid shirt, jeans, and a baseball cap is walking through a field of tall, golden-brown grass. In the background, there are trees and houses under a clear sky.

**WHY DOES SUSTAINABILITY
MATTER?**



WHY IS SUSTAINABILITY IMPORTANT?





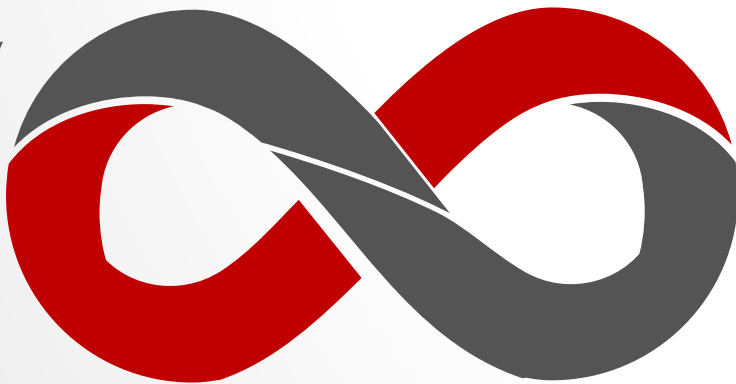
WHAT IS A NUTRITIOUS AND SUSTAINABLE DIET?

Socio-Cultural Health

- Worker Health & Safety
- Gender & Racial Equity

Planetary Health

- Carbon Footprint
- Food Loss & Waste
- Agri-Chemical Inputs



Human Health

- Nutritious Food & Diets
- Food Access & Affordability
- Food Safety

Economic Health

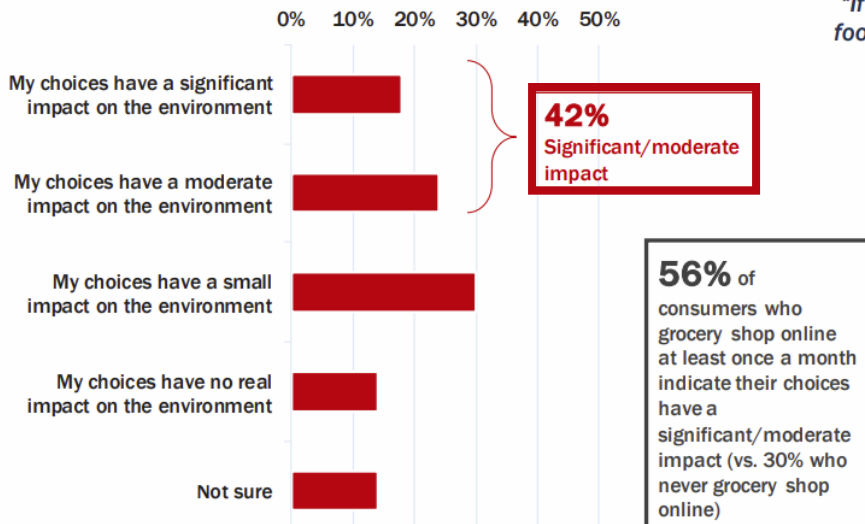
- Job Stability
- Living Wage

CONSUMERS ARE MAKING THE CONNECTION BETWEEN FOOD CHOICES AND PLANETARY IMPACT

Over 4 in 10 believe their individual food and beverage choices impact the environment

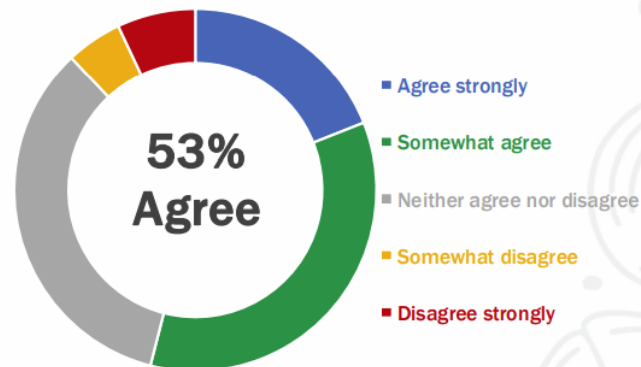
Half of Americans also agree that if it were easier to understand the actual impact of their choices, it would have a greater influence

Impact of Individual Choices on Environment



Agreement with Environmental Impact Statement

"If it was easier to understand the actual environmental impact of my food choices, it would have a greater influence on the choices I make."

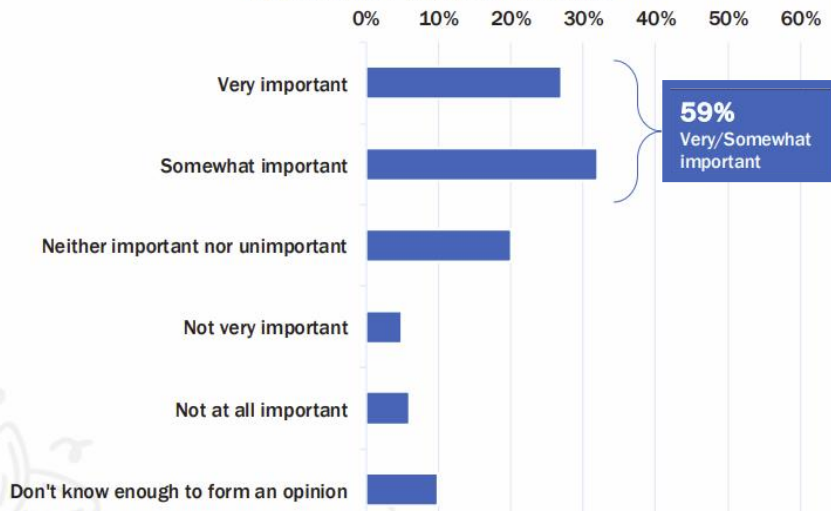


PEOPLE ARE BECOMING INCREASINGLY AWARE OF EQUITY ISSUES

Six in 10 Americans say fair and equitable treatment of food workers is important to them

African Americans are especially likely to see this as important; those who do find it important are mixed on how easy it is to actually find this information

Importance of Fair and Equitable Treatment of Workers on Purchase Decisions



Ease of Finding Information on Fair and Equitable Treatment of Workers
(Of those who believe it is important)



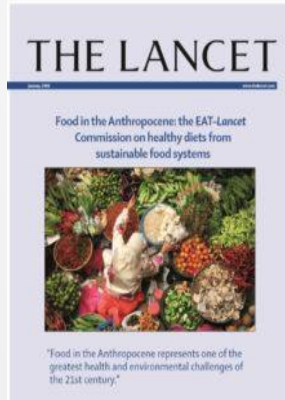
The background image shows a top-down view of a person's hands with purple nail polish mixing a salad in a large wooden bowl. The salad contains lettuce, tomatoes, cucumbers, and red and yellow bell peppers. To the left is a wooden cutting board and a large knife. Below the bowl are two small white bowls, one containing white crumbled cheese and the other containing a dark seed mixture.

**WHAT DOES SUSTAINABLE
EATING LOOK LIKE?**

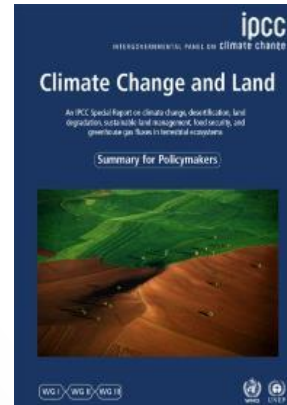
EMERGING CONSENSUS SUGGESTS SUSTAINABLE DIETS ARE PRIMARILY PLANT-BASED



We must change diets particularly by **reducing ruminant meat consumption** to reduce gaps in food use, land use and GHG mitigation in ways that contribute to better nutrition.



Healthy, sustainable diets have an optimal caloric intake and **consist largely of a diversity of plant-based foods**, low amounts of animal source foods.



Balanced diets featuring plant-based and sustainably produced animal-sourced food present opportunities for adaptation and mitigation while generating significant co-benefits in terms of human health.



Transitioning towards more **plant-based diets in line with international dietary guidelines** could decrease global mortality, shrink the global food gap and substantially reduce diet-related GHG emissions.



CHARACTERISTICS OF A PLANT-BASED DIET

- Prioritizes fruits, vegetables, whole grains and plant-based proteins (nuts, seeds, legumes)
- **NOT** plant-exclusive!
- Associated with less of an impact on the environment than the typical American diet
- Can meet nutritional needs
- Can support muscle protein synthesis rates and/or gains in muscle mass

Lynch HM et al. *Int J Environ Res Public Health*. 2020;17(11):3871.
Banaszek A et al. *Sports (Basel)*. 2019;7(1):12.
Scientific report of the 2015 Dietary Guidelines Advisory Committee. US Department of Agriculture, 2020.
Blackstone NT et al, *Lancet Planetary Health* 2018; 2(8); P344-352.



The background of the slide is a photograph of three people running through a dark, arched tunnel. On the left is a Black man in a grey t-shirt and dark blue pants. In the center is a woman with dark hair in a purple sleeveless crop top and reddish-brown leggings. On the right is a woman with dark hair in a dark grey sleeveless top and black shorts. They are all running towards the camera, and the tunnel's arches create a sense of depth and motion.

CAN A PLANT-BASED DIET FUEL PHYSICAL ACTIVITY?



THERE ARE SOME DIFFERENCES



COMMON QUESTIONS AND SOLUTIONS

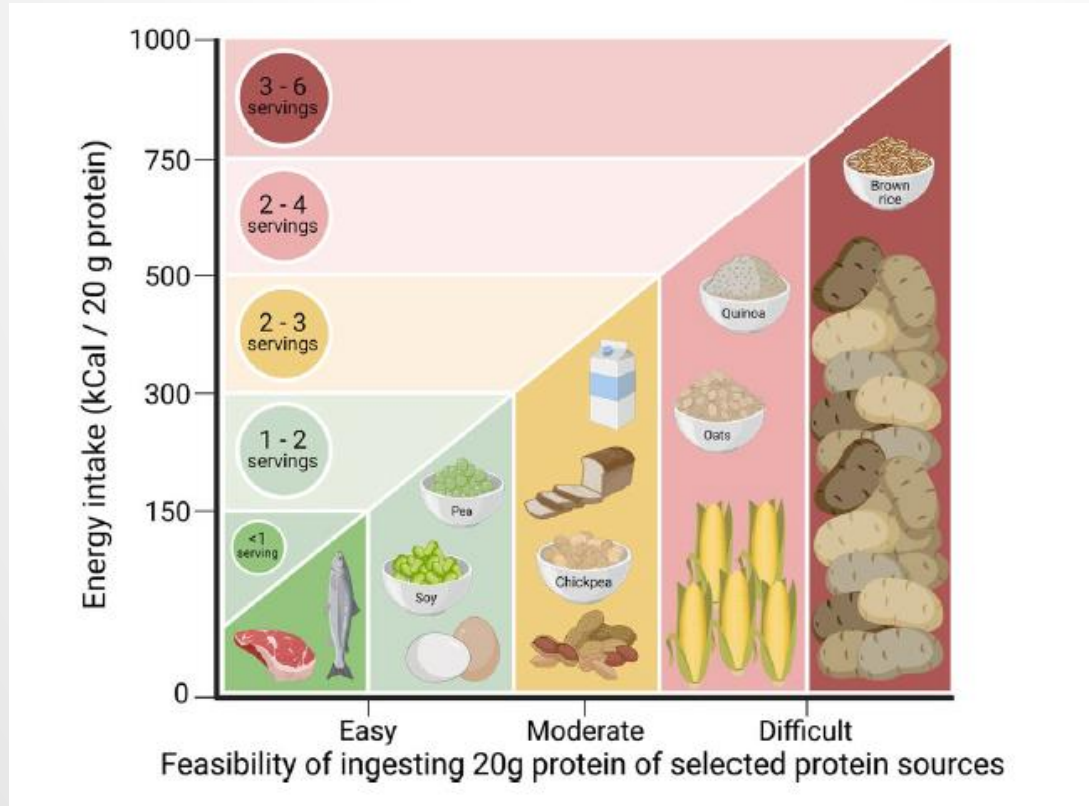
- Protein Amount
- Protein Quality
- Performance Impact



A Black male athlete is sitting on a grey gym floor, leaning back with his knees bent and feet flat on the floor. He is holding a black medicine ball with both hands in front of his chest. He is wearing a dark purple tank top and olive green leggings. His skin is glistening with sweat. In the background, there is a gym setting with various equipment, including a wooden box and a person standing in the distance.

**CAN ATHLETES GET ENOUGH PROTEIN
FROM PLANTS?**

PLANT FOODS ARE OFTEN LOWER IN PROTEIN





BASELINE PROTEIN NEEDS CAN BE MET ON A PLANT-BASED DIET

Protein Consumption

	Meat-Eaters	Fish-Eaters	Lacto-Ovo	Vegan
n (%)	18,244 (60)	4,531 (15)	6,673 (22)	803 (3)
Energy (kcal)	2,091	2,030	2,002	1,944
% Energy from protein	17.2	15.5	14.0	13.1
Protein (g/kg of body weight) ¹	1.28	1.17	1.04	0.99
Protein (g) ²	90	79	70	64
Body weight (kg) ²	70	67	67	64

¹Based on a subsample of 29,028 individuals with information on body weight

Protein Recommendations
(example of 68 kg (150 lbs) person)

Sedentary	0.8 g/kg/day	54 g/day
Training (A)	1.2 g/kg/day	82 g/day
Training (B)	2.0 g/kg/day	136 g/day





PLANT-BASED AND OMNIVORE DIETS CAN HAVE THE SAME TOTAL PROTEIN

Meal	Plant-Based	Protein (g)	Omnivorous	Protein (g)
Breakfast	2 slices whole wheat bread, ½ avocado, 2T hemp seeds	26.5	2 egg scramble, 1 slice toast	17
Lunch	¾ cup quinoa salad topped with 2T hummus and 1.5 oz pumpkin seeds	24.5	Turkey wrap with flour tortilla and greens	27
Snack	1 oz almonds	6	1 oz cheese + 4 crackers	7
Dinner	Falafel bowl with 3 falafel, ½ cup black beans, greens, 2 T tahini dressing, 1 oz sunflower seeds	26	4 oz chicken breast, ½ cup rice, 1 cup steamed vegetables	32
Total		83		83



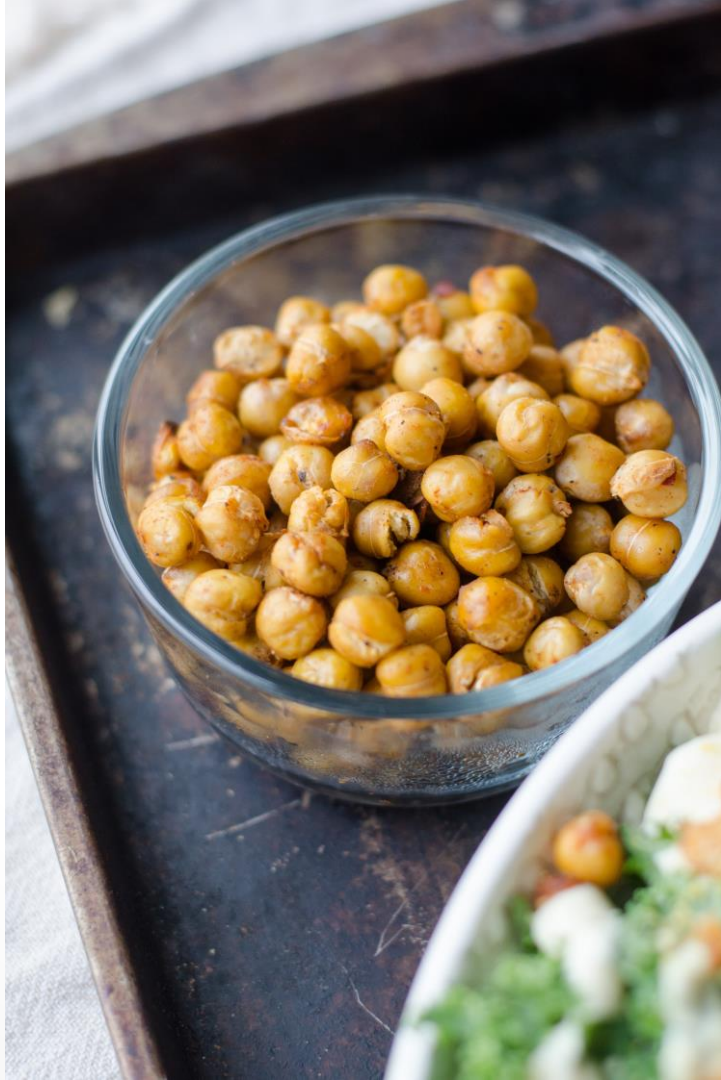
PROTEIN AMOUNT SUMMARY

Question: Can athletes get enough protein on a plant-based diet?

- Yes, but keep in mind that plants are less concentrated with protein compared to meat
- Many plant-based eaters meet average population protein requirements (1 g/kg/day), but athletes have elevated needs

Solutions:

- Vary protein sources
- Incorporate protein concentrates
- Increase total volume of relatively protein-dense plant foods (dependent on calorie needs)



The background of the entire image is an underwater photograph of a swimmer. The swimmer is seen from the chest up, wearing blue swim trunks and goggles. They are in a swimming posture, with arms extended forward and water splashing around them. The water is a clear, vibrant blue, and the overall scene is dynamic and energetic.

**DO PLANTS PROVIDE THE
SAME PROTEIN QUALITY?**

PROTEIN QUALITY

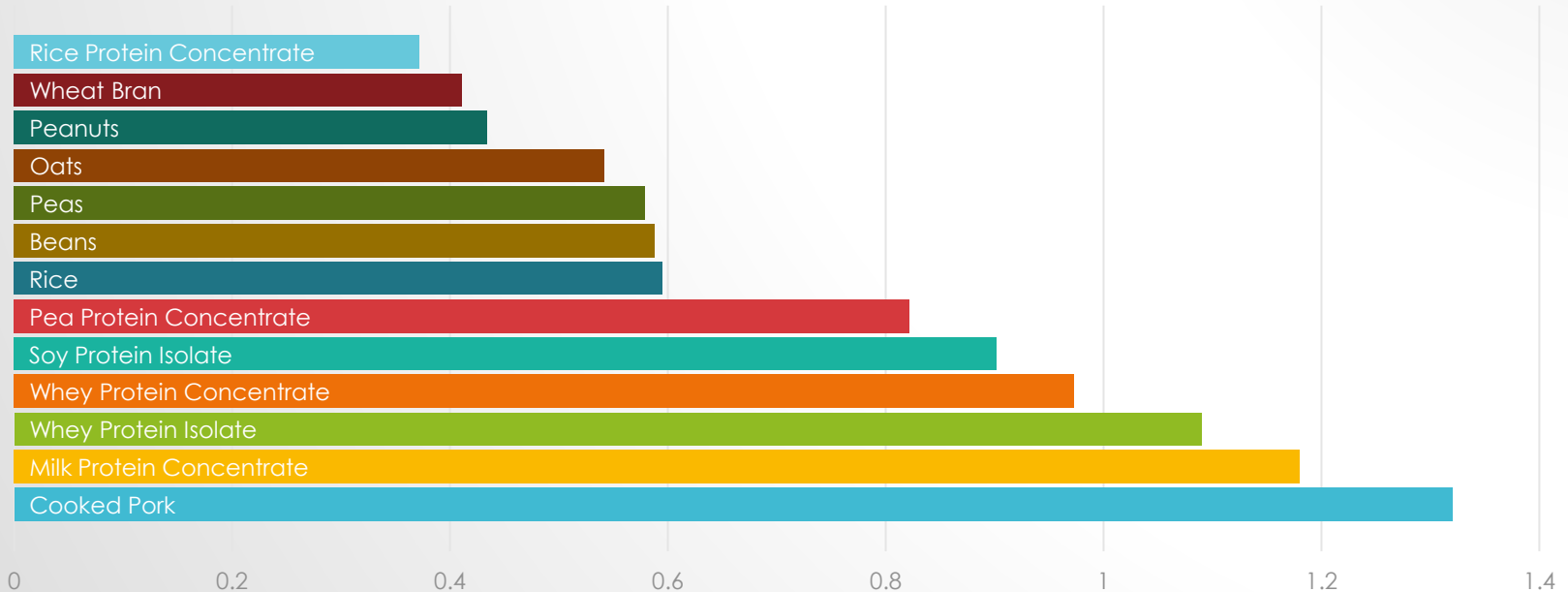
- Plant foods contain all 20 amino acids, including the 9 essential amino acids (EAA)
- Sometimes **EAA concentration in plant foods is lower than optimal human needs**
- Generally, if people are consuming a variety of plant-based foods, they meet EAA requirements





PLANT-BASED PROTEINS CAN BE LOWER IN PROTEIN QUALITY

Digestible Indispensable Amino Acid Scores





PLANTS CAN PROVIDE ENOUGH LEUCINE

	Amount of protein required for ~3g leucine
Whey	23g
Corn (Maize)	25g
Egg	36g
Rice	37g
Soy	38g
Pea	39g
Wheat	45g





PROTEIN QUALITY SUMMARY

Question: Do plants provide the same protein quality?

- Plants tend to have a lower amount of essential amino acids, including leucine

Solutions:

- Consume a variety of plant protein sources throughout the day
- Use “complete” plant proteins surrounding activity
 - Soy or a blend of plant-based proteins
 - Plant-based concentrates
- Increase the overall amount of plant protein



The background image shows a woman in a white athletic top and red leggings performing a barbell overhead press in a gym. She is in the center of the frame, with her arms extended upwards holding a barbell with two black weights. To her left, a man in a grey t-shirt and black shorts is working with a battle rope. In the background, a large window looks out onto a balcony with various plants. To the right, a mirror reflects other people working out. The gym has a modern feel with colorful geometric wall art and a white storage rack filled with gear.

HOW DOES A PLANT-BASED DIET IMPACT PERFORMANCE?

IMPACT OF PLANT-BASED DIET ON STRENGTH

- **Question:** Does a plant-based diet provide adequate protein for muscular strength & muscle mass gains?
- **What the Science Says:**
 - Results from a meta-analysis of 16 studies on plant vs animal protein demonstrated that protein source did not affect changes in **absolute lean mass or muscle strength**.
 - Results from 2 studies comparing plant vs animal sourced diets showed **no difference in peak torque** and that **protein source does not affect resistance training-induced adaptations**.



IMPACT OF PLANT-BASED DIET ON ENDURANCE

- **Question:** Does a plant-based diet hinder endurance performance?
- **What the Science Says:**
 - Results from a comparison of elite vegetarian and omnivore athletes shows no impact of diet on **cardiorespiratory fitness among male athletes**.
 - In addition, a plant-based diet may **improve indices of endurance performance, including aerobic capacity (VO_{2max}) among female athletes** compared to omnivorous counterparts.



IMPACT OF PLANT-BASED DIET ON TRAINING & PERFORMANCE

- **Question:** Can a plant-based diet provide enough protein to adequately support training and performance?
- **What the Science Says:**
 - Total protein intake was lower among vegetarians, but **protein intake/kg body mass was not different** (1.2 ± 0.3 and 1.4 ± 0.5 g/kg body mass for vegetarian and omnivore, respectively).
 - A high-protein (1.6g/kg/day) plant-based diet (plant-based whole foods + soy protein isolate supplementation) is not different than a protein-matched mixed diet (mixed whole foods + whey protein supplementation) in **strength & muscle accrual**.



**WHAT ARE STEPS TOWARD CONSUMING A
NUTRITIOUS, SUSTAINABLE DIET?**

WHAT ARE WAYS TO SHIFT TO A MORE SUSTAINABLE DIET?

- Menu and meal planning
- Reducing food waste
- Plant-based swaps
- Choosing sustainably sourced packaged foods and snacks





WHAT SHOULD YOU LOOK FOR WHEN SELECTING FOOD ON THE GO?

Brand actions
and values

Plant-based
ingredients

Third-party
sustainability
certifications





A DAY OF SUSTAINABLE EATING

ENDURANCE ATHLETE

- **7 am Breakfast:** Oatmeal topped with nut butter and a banana
- **9 am:** 75 min run
- **Immediately post-run:** Recovery smoothie with leftover fruit, hemp seeds, and pea protein
- **12 pm Lunch:** Mediterranean Chickpea Salad
- **3 pm Afternoon Snack:** Plant-based yogurt with CLIF BAR® Thins
- **6 pm Dinner:** Tofu Noodle Bowl using soon-to-spoil veggies



KEY TAKEAWAYS

- Climate change is driving **attention and urgency** regarding the need for more sustainable lifestyles
- A **well-chosen plant-based diet** can support planetary and human health, while sustaining an active lifestyle
- Nutritious, sustainable diets don't have to be exclusively homemade
 - When selecting fuel on the go, consider a company's **commitments and values**, as well as options that feature **plant-based ingredients** and **third-party sustainability seals and certifications**
- **Registered dietitians** can meet athletes and active people where they are and help them add more plants to their day



HOUSEKEEPING

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THANK YOU

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