

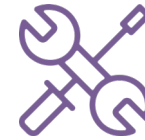
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Special Operations Nutrition Optimization



Special Operations Nutrition Optimization



Event Materials

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Continuing Education

This webinar has been approved to offer continuing education credit. Please stay tuned for more information!

Nutrition for the Tactical Athlete

Spring & Summer 2025

- Energy Drinks, Dietary Supplements & Operation Supplement Safety
- Social Drivers of Health for Tactical Athletes
- Special Operations Nutrition Optimization
- Engineering Food to Fuel Warfighter Performance



OneOp.org/series/nutrition-for-the-tactical-athlete



**NUTRITION FOR THE
TACTICAL ATHLETE**

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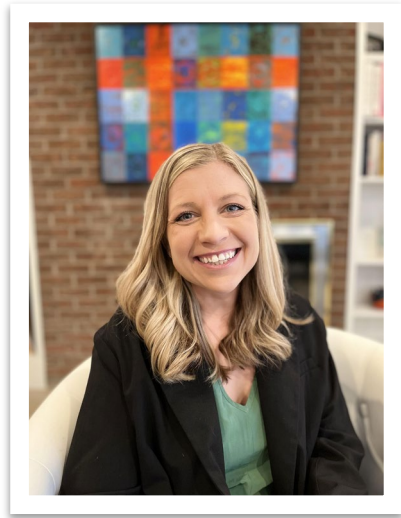
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This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, and the Office of Military Family Readiness Policy, U.S. Department of Defense under Award Number 2023-48770-41333.

Today's Presenter



Kelsey Bailey, MS, RD, CSSD, CSCS, IFNCP

Performance Dietitian
B. Well, LLC

Disclosures

I work with Eternal, a telehealth company for athletes.
I consult with Momentous on education development.

Learning Objectives

- Discuss proactive, active, and reactive interventions as they relate to feeding Special Operators.
- Review the impacts of environmental conditions and type of mission on an Operator's nutritional needs.
- Explain the considerations for traumatic brain injury, Operator Syndrome, and environmental exposures in Special Operations nutrition.
- Discuss the important biomarkers to track over time to promote Special Operators' long-term health.

WHERE ARE WE GOING?

.....

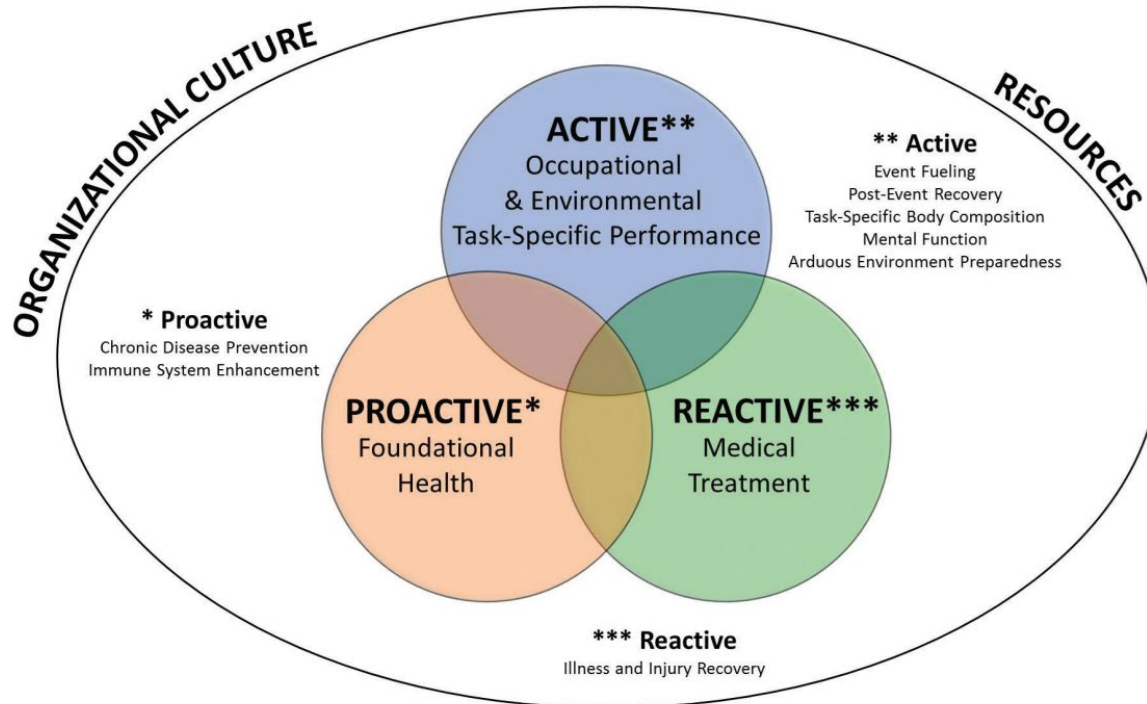
01 | Proactive,
Active, and
Reactive Care

03 | Environment &
Exposures

02 | A Resilient
Foundation

04 | What to Track

Comprehensive Performance Nutrition Program Concept



PROACTIVE



Optimal Performance

Fueling for all/unknown situations

Immune System and Long Term Disease Risk

Cognitive function especially under pressure

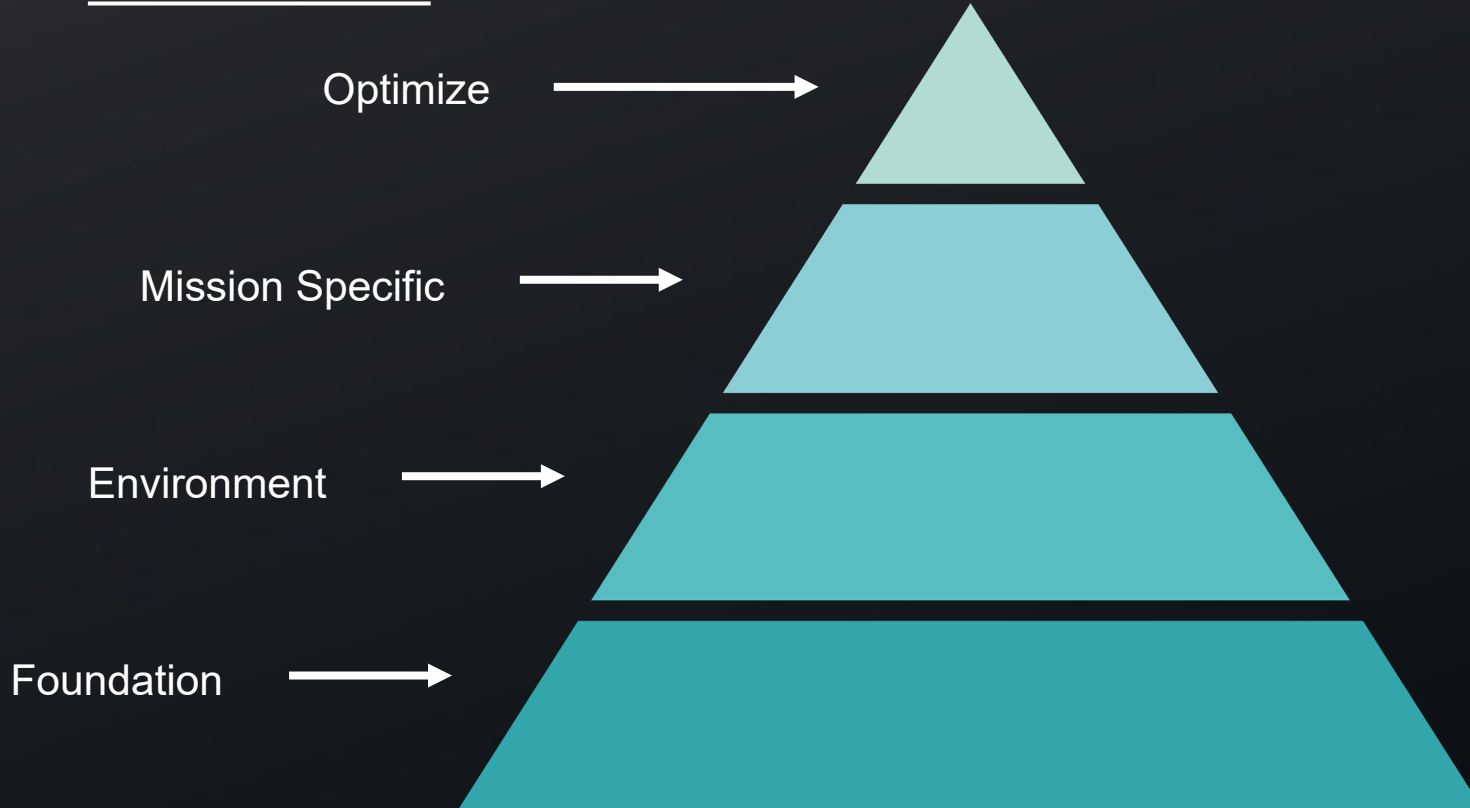
Body composition, movement ability, injury risk

Chronic Medical Conditions

**Injury Recovery and Surgery
(Training & Work Related)**

**Performance Recovery
(Work & Training Related)**

PERFORMANCE PYRAMID



FOUNDATION

You're only as strong as your foundation.

ENERGY
AVAILABILITY

Do you have enough fuel on board for optimal performance?



How many 'pennies in the bank' do you have?

FUEL FOR
WORK-
REQUIRED

What are you hoping to get out of your training?



Fuel for the demand and adaptation you are looking for.

RECOVERY
AND
RESILIENCE

You can only train as hard as you recover.

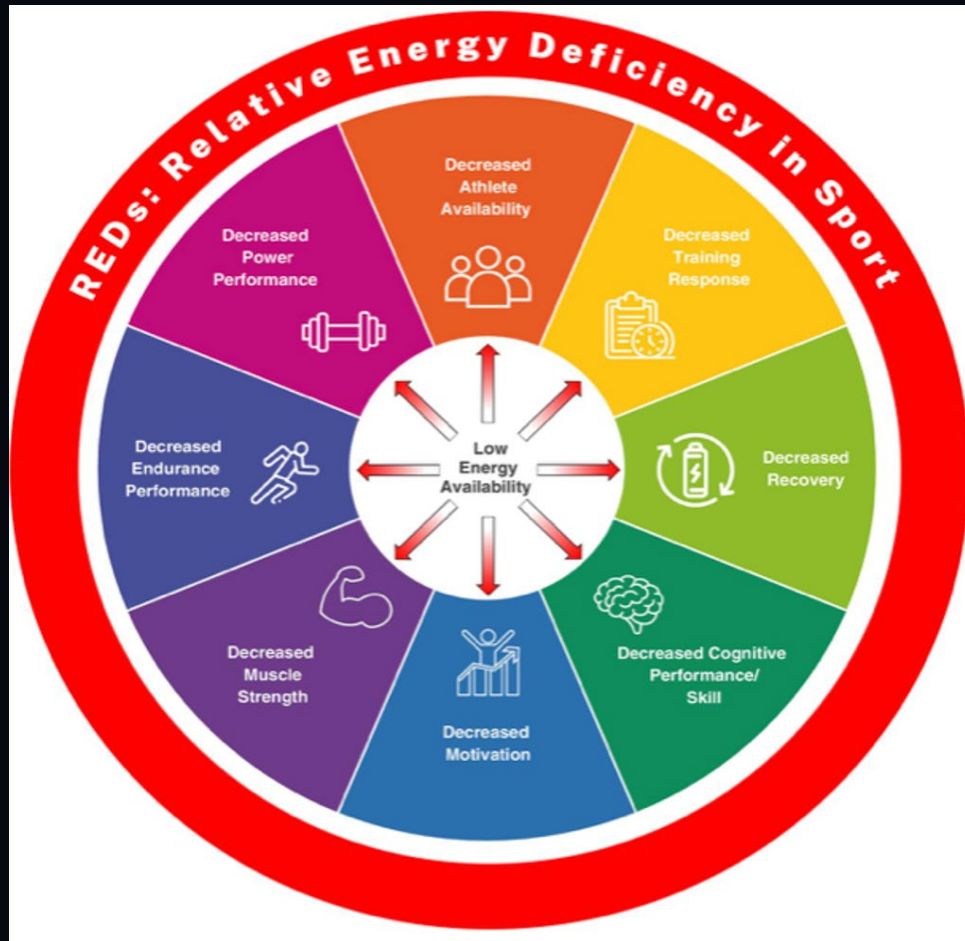


How are you timing fuel and prioritizing periodization?









Open Access Article

Energy Deficit and Factors Associated with Energy Balance during a Combat Deployment in U.S. Army Special Operation Forces Soldiers

by [Evan G. Tryon](#)^{1,*} , [Nicholas D. Barringer](#)² , [Harris R. Lieberman](#)²  and [William R. Conkright](#)^{1,3}  

¹ Nutrition Care Division, Madigan Army Medical Center, Joint-Base Lewis Mc

² Military Nutrition Division, U.S. Army Research Institute of Environmental M

³ Office of the Surgeon, U.S. Army Special Operations Command, Fort Bragg

* Author to whom correspondence should be addressed.

Nutrients **2024**, *16*(18), 3072; <https://doi.org/10.3390/nu16183072>

Prediction equation for estimating total daily energy requirements of special operations personnel

[N D Barringer](#)¹, [S M Pasiakos](#)¹, [H L McClung](#)², [A P Crombie](#)³, [L M Margolis](#)^{1,4,✉}

▶ [Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#)

PMCID: PMC5885383 PMID: [29632452](#)

The current USARIEM study began at the Combat Diver Qualification Course in Key West, Fla. Crombie said preliminary results indicate that service members at that venue needed 4,600 calories a day. Data from Fort Bliss, Texas, and Fort Bragg, N.C., will also be included in the study.

Energy expenditure and intake during Special Operations Forces field training in a jungle and glacial environment

Authors: [Caleb D. Johnson](#) , [Andrew J. Simonson](#), [Matthew E. Darnell](#), [James P. DeLany](#), [Meleesa F. Wohleber](#), and [Christopher Connaboy](#) | [AUTHORS](#)

[INFO & AFFILIATIONS](#)

Publication: Applied Physiology, Nutrition, and Metabolism • 16 November 2017 • <https://doi.org/10.1139/apnm-2017-0622>

” 25 ↓ 273



Tryon, et al., 2024; Barringer, et al., 2018;
Johnson, et al., 2018

POWER PLATE

EAT TO FUEL YOUR PERFORMANCE

POWER UP

Increase grains & starchy vegetables to 1/2 of your plate for intense training or operations

STAND DOWN

Decrease grains & starchy vegetables to 1/4 of your plate on easy/rest days or for weight loss

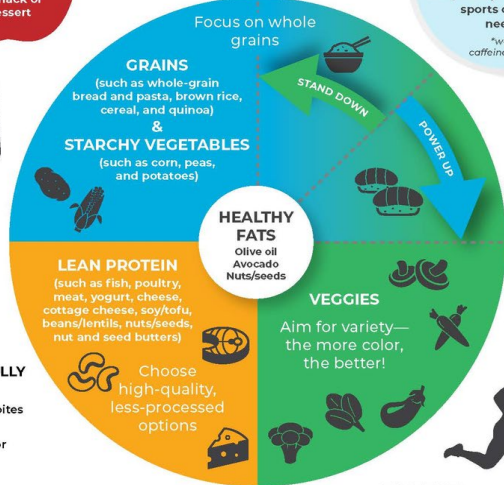
WATER OR UNSWEETENED DRINKS

Coffee*, tea*, milk/non-dairy milk, 100% juice (limit 4 oz); sports drinks as needed

*watch caffeine content



FRUIT
as snack or dessert



EAT MINDFULLY

- Slow down
- Take smaller bites
- Chew more
- Focus on flavor



BE ACTIVE!

For optimal performance, match your portions with your activity level (this can change day to day)

Adapted from: Team USA's Athlete's Plates
For more information, visit HPRC-online.org/nutrition



HUMAN PERFORMANCE RESOURCES by CHAMP | HPRC-online.org

EASY TRAINING / WEIGHT MANAGEMENT:

FATS
1 Teaspoon

Whole Grains
Pasta
Rice
Potatoes
Cereals
Breads / Legumes

Lean Protein
Poultry
Beef/Game/Lamb
Fish
Eggs
Low-Fat Dairy
Soy (e.g., Tofu, Tempeh)
Legumes/Nuts

Vegetables
Raw Veggies
Cooked Veggies
Veggie Soups
Fresh Fruit

FLAVORS
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup

Water
Dairy/Non-dairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

Avocado
Oils
Nuts
Seeds
Cheese
Butter

MODERATE TRAINING:

FATS
1 Tablespoon

Grains
Pasta
Rice
Potatoes
Cereals
Breads / Legumes

Lean Protein
Poultry
Beef/Game/Lamb
Fish
Eggs
Low-Fat Dairy
Soy (e.g., Tofu, Tempeh)
Legumes/Nuts

Vegetables
Raw Veggies
Cooked Veggies
Veggie Soups

FLAVORS
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup

Water
Dairy/Non-dairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

Avocado
Oils
Nuts
Seeds
Cheese
Butter

Fresh Fruit
Stewed Fruit
Dried Fruit

HARD TRAINING / RACE DAY:

FATS
2 Tablespoons

Grains
Pasta
Rice
Potatoes
Cereals
Breads

Lean Protein
Poultry
Beef/Game/Lamb
Fish
Eggs
Low-Fat Dairy
Soy (e.g., Tofu, Tempeh)
Legumes/Nuts

Vegetables
Cooked Veggies
Raw Veggies

FLAVORS
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup

Water
Dairy/Non-dairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

Avocado
Oils
Nuts
Seeds
Cheese
Butter

Fresh Fruit
Stewed Fruit
Dried Fruit

Human Performance
Resources by CHAMP, 2025

FED vs
FASTED

.....



Understand Need

At least 0.5oz / lb body weight, closer to 1:1 for high losses, high training volumes



Understand Losses

Assess sweat rate, aim to keep losses <2% body weight



Understand Environment

Cold, heat, humidity, altitude, gear can all impact sweat losses and fluid demand



<https://www.dvidshub.net/image/7993062/macii-match>

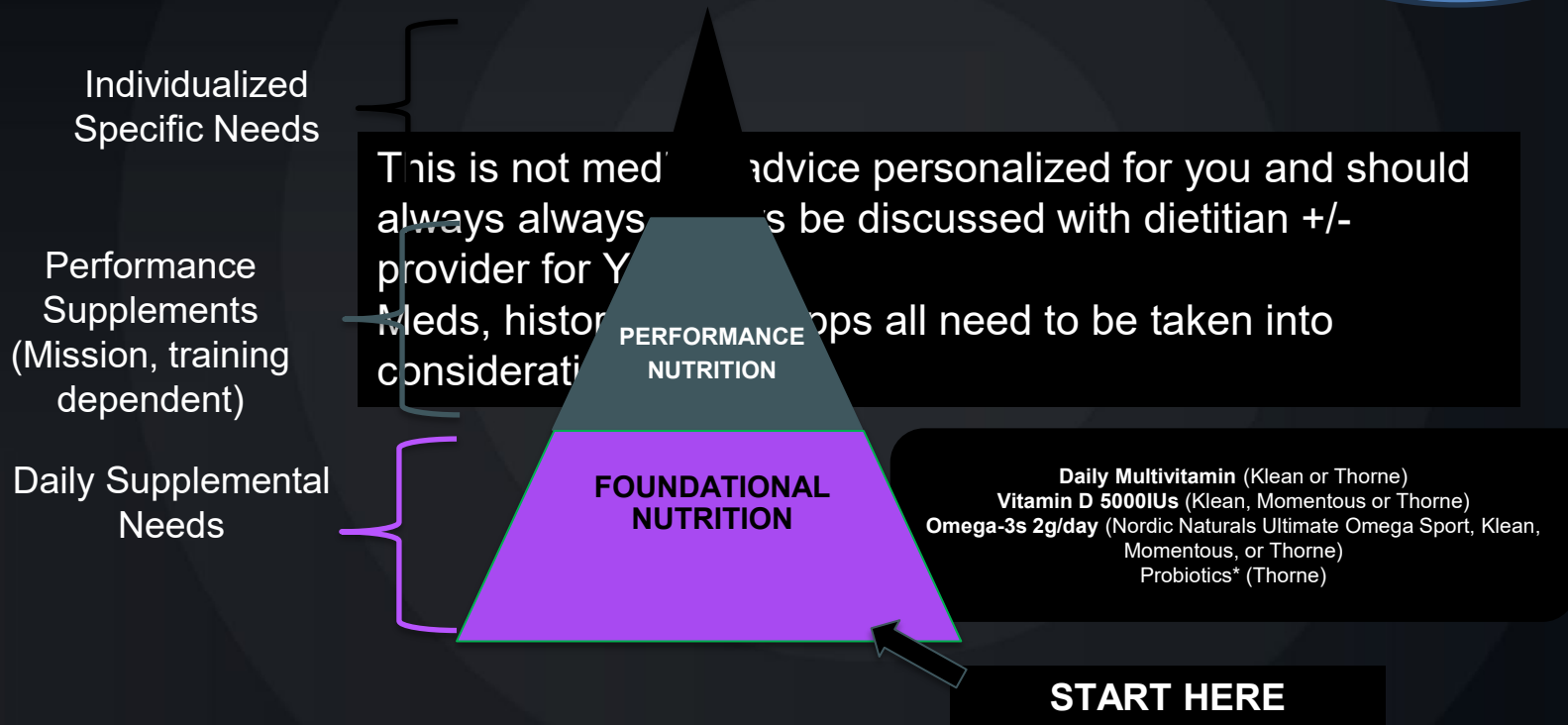
What Can We Do:

Goal: Food and Nutrients and Activities of Daily Living that enhance immune and metabolic resiliency to reverse disease and optimize performance.



WHAT DO YOU RECOMMEND?

All examples
are 3rd party
verified





	BSCG Certified Drug Free	Informed Sport	NSF Certified Sport	USP Verified
Is the product tested for substances prohibited in sport?	Yes	Yes	Yes	No
Is the product tested for contaminants? (e.g., heavy metals, pesticides, etc.)	Manufacturers can pay extra, but not included automatically	Yes	Yes	Yes
How often or which lots of the product have been tested?	Every Lot	Every Batch	Lots Listed on NSF Website	Annually
Is there an app to help choose certified products?	No	Yes	Yes	No

AOMD

SUBJECT: Army Special Operations Forces (ARSOF) Performance-Based Menu Standards and Guidelines

menu that fuels ARSOF training and missions, optimizes physical and mental performance, prevents chronic disease, enhances the immune system, supports task-specific body composition, and provides education through environmental modeling.

b. The standards and guidelines delineated within this policy were originally developed in 2012 by the United States Special Operations Command (USSOCOM) Performance Nutrition (PN) Working Group and are in revision to accommodate changes in DoD regulations in accordance with the national nutrition guidelines. The PN Working Group, comprised of performance dietitians of Army, Navy, Air Force, and Marine SOF, will monitor implementation and provide continuing guidance for Performance-Based Menu Standards and Guidelines as required by emerging diet and nutrition science-based evidence.

c. Modified guidelines for boxed cold meals and catering guidelines are outlined in the appendices and throughout this document. These revisions and modifications are required due to the limitations of temperature control, space, and portability for boxed meals, and to provide guidelines for non-military contract food service in support of training events.

d. The goals of the ARSOF Performance-Based Menu Standards and Guidelines are to:

- (1) Provide guidance to USASOC DFACs and non-traditional food service support venues on offering a varied, colorful, flavorful, and balanced nutritional fueling program for the needs of ARSOF Soldiers in training and operational missions.
- (2) Reduce food costs and waste by utilizing sustainable food preparation practices, reducing pre-packaged convenience food products and replacing them with freshly prepared items or more natural alternatives, serving foods in bulk, and reducing use of individual serving products (PC).
- (3) Optimize Soldier physical and cognitive performance, enhance physiological function, strengthen the immune system to prevent chronic and systemic disease, and support appropriate task-specific body composition.
- (4) Provide Soldier training and education on the benefits of optimal diet and nutrition in support of performance, recovery, and longevity.

DFACs



ACTIVE



THE FIELD

Prepared for any and all extreme conditions



**EXTREME COLD
ALTITUDE**



**EXTREME HEAT
DESERT**



**WATER OPERATIONS
SUBMARINES**



**HUMIDITY
HEAT
JUNGLE**

FUELING AND PREPARATION

Preparing for the known and unknown.



Understand Environment

Environment

Gear

Packing in



Understand Fueling and

Hydration Options

MREs

Feeding in garrison and deployed dining facility (DFAC), hunting, access to fresh foods



“Food is a tactical weapon.”

-Nutritional Guidance for Military Operations
in Temperate and Extreme Environments

USARIEM TECHNICAL NOTE TN-01/4

U.S. Army Research Institute of Environmental Medicine
(USARIEM), 1993

Failing to plan is planning to fail.



Limit Liabilities

Will items melt, freeze
Do Special Operators consume provisions?
Timing of training or mission
(pre fuel, options during, estimated duration, etc.)



Support Mission Readiness

Strong foundations create the basis for success in times of unknown fueling

ENVIRONMENTAL EXPOSURES

Modern day exposures are high.
They're even higher in the
military.

Heavy Metal

Guns
Ammo
Smoke



Blasts

Explosives
Guns



Pollution

Burn Pits
City Pollution
Fire



Food and Water

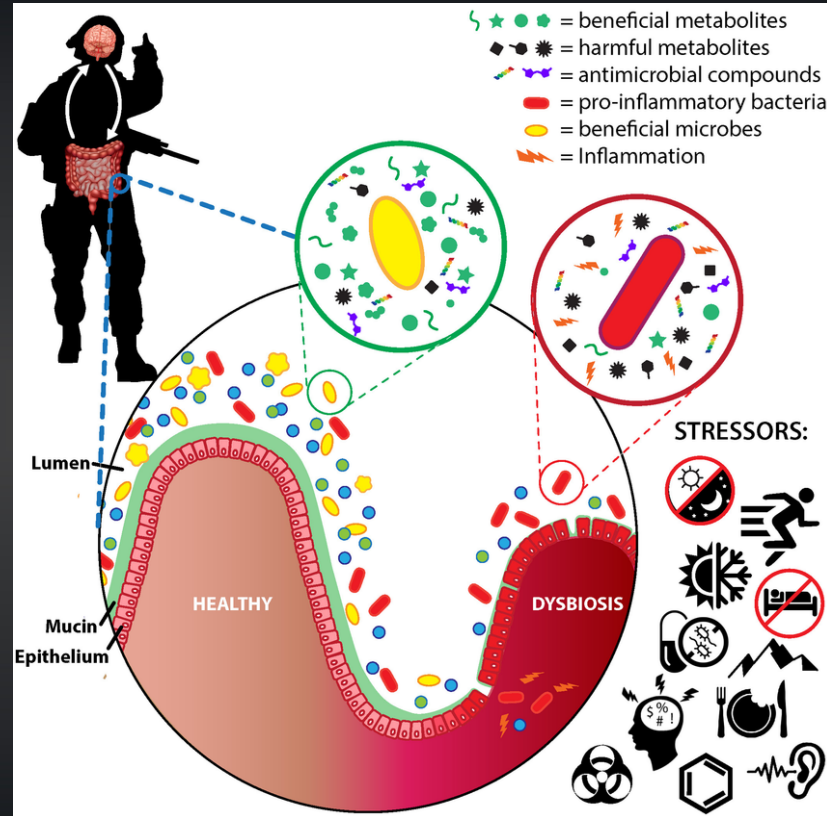
Plastics
Contaminated Food
Contaminated Water



GUT MICROBIOME

Building Up Defenses

Food and Water
Blast Exposure
Travel
Stress
Extreme
Temperatures
Sleep Deprivation
Physical Demand
Altitude



Karl, et al., 2018

REACTIVE



INJURY

Goal to return to duty as efficiently and safely as possible.

SOFT
TISSUE

1

Tendon
Ligament
Muscle Sprain/Strain

BONE

2

Stress Fracture
Break
Location/Severity

NERVE

3

Impinged
Limb loss

BRAIN

4

Traumatic Brain
Injury
Blast Exposures

TRAUMATIC BRAIN INJURY

DOD Numbers for Traumatic Brain Injury Worldwide

2000-2024 Q4

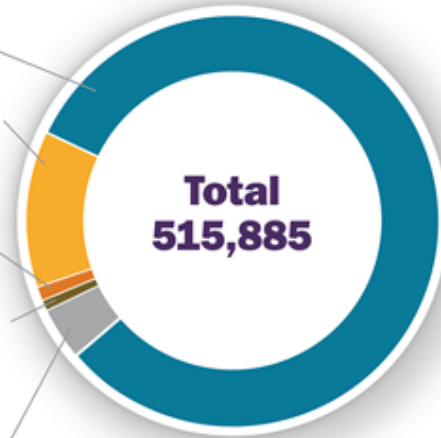
Mild: 81.8%

Moderate: 12.1%

Severe: 1.0%

Penetrating: 1.1%

Not
Classifiable: 4.0%



Penetrating: 5,883

Severe: 4,979

Moderate: 62,573

Mild: 421,760

Not Classifiable: 20,690

Source: Defense Medical Surveillance System, Theater Medical Data Store provided by the Armed Forces Health Surveillance Division. Prepared by the Traumatic Brain Injury Center of Excellence. *Percent may not add to 100% due to rounding. 2000-2024 Q4, as of February 10, 2025





Nutrition

Personal Protective Nutrition
Anti-inflammatory Nutrition



Supplementation

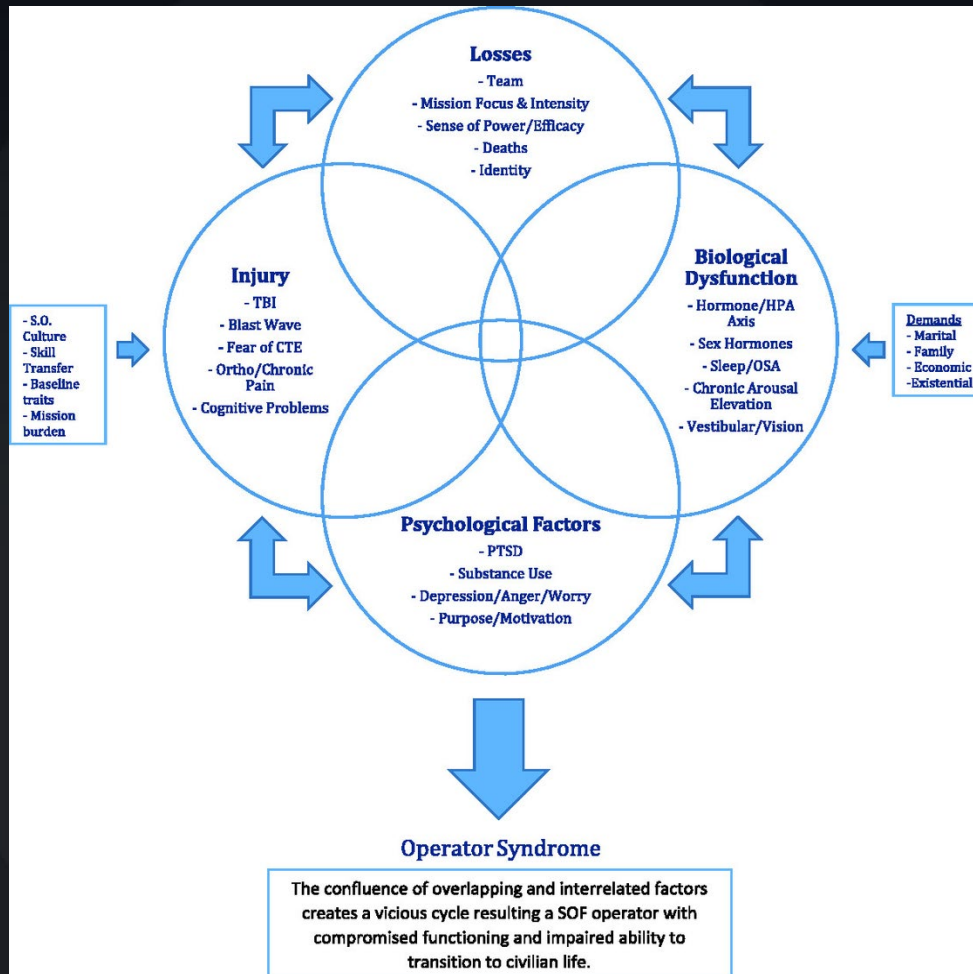
Omega-3s
Creatine
Vit D
B12



Recovery Considerations

Gut Health
Metabolic Support
Inflammation Management





ALLOSTATIC LOAD



LABWORK

Check 'under the hood'

PROACTIVE

CMP, CBC, Lipid Panel,
Metabolic Panels, Thyroid
Panels



General Health
Prophylactic Screening
Female Considerations

ACTIVE

Performance -related labs —same
as proactive + hormone panel +
iron markers, muscle markers



Pre/Post Deployment
Prior to large trainings
Considerations for iron
prior to altitude work

REACTIVE

Monitoring a particular disease
state or clinical condition



Cardiovascular Disease
Diabetes
Thyroid Disease
Hormone Dysregulation



Nutrition
Wheel

You're Worth It

THANK YOU

QUESTIONS!

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Upcoming Event

Engineering Food for Warfighter Performance

July 30, 2025

In operational settings, military service members consume rations that support and sustain warfighter performance in potentially very austere environments. Rations must be shelf stable for 1.5-3 years, withstand environmental conditions, be transportable through a variety of methods, resistant to contamination and safe to consume, contain optimal nutrition, and taste good. The Combat Feeding Division, part of the Army's Combat Capabilities Development Command (DEVCOM) executes the joint Combat Feeding Research & Engineering Program to provide all services with solutions to constantly evolving field feeding challenges. This presentation will discuss current fielded operational rations as well as active areas of research & engineering to meet future challenges.

Continuing education credit will be available for this session!



Nutrition for the Tactical Athlete

Spring & Summer 2025

- Energy Drinks, Dietary Supplements & Operation Supplement Safety
- Social Drivers of Health for Tactical Athletes
- Special Operations Nutrition Optimization
- Engineering Food to Fuel Warfighter Performance



OneOp.org/series/nutrition-for-the-tactical-athlete



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- **Practical Application:** Learn about tools and strategies you can implement immediately

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Continuing Education



This webinar has been approved for 1.0 continuing education (CE) credits by the following organizations:

- Commission on Dietetic Registration (CDR)
- American Association of Family and Consumer Sciences (AAFCS) for CFCS and CNWE
- National Commission for Health Education Credentialing (NCHEC)
- Certificates of attendance are also available

Evaluation Link

Go to the event page for the evaluation and post-test link.

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