School Athletes & Eating Disorders

Why, Who, and How?

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Disclosures

- Faculty at Boston University

- Senior Consultant to Walden Behavioral Care

What I bring to this conversation…

- Registered Dietitian
- Nutrition faculty, Boston University
- Writer & researcher
- Built BU's Sports Nutrition service
- Sports nutrition practice for 20 years
- Specialist in eating disorders and eating disorders in sport
- Built the GOALS program at Walden Behavioral Care
- Former student-athlete
- Mother of three highly competitive athletes…

http://sites.bu.edu/nutritionalepilab/

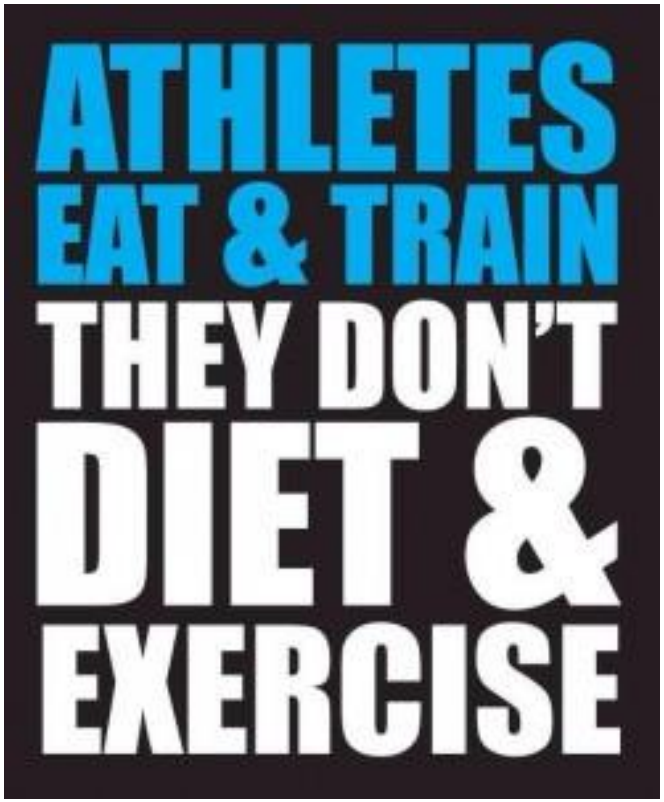
My objectives

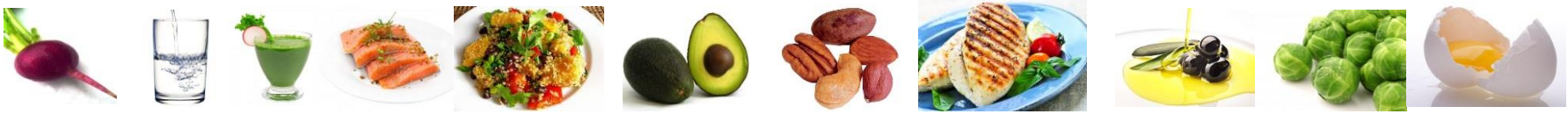
- Describe unique and intersectional vulnerabilities of student-athletes that put them at risk for eating disorders, body dissatisfaction, and compulsive exercise
- Identify the consequences of eating disorders in sport
- Empower a call to action
- Share tools and resources to build capacity to prevent and respond to eating disorders in sport

Nutrition for the Athlete

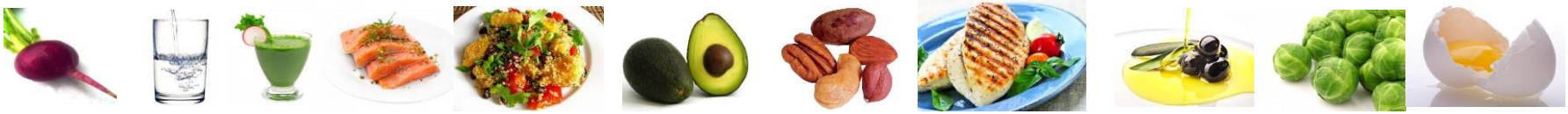
- Healthy strong body
- Increased nutritional needs
- Optimal performance
- Adequate hydration
- Better immunity
- Injury prevention
- Faster recovery
- Mental focus

Show Up 4 Nutrition

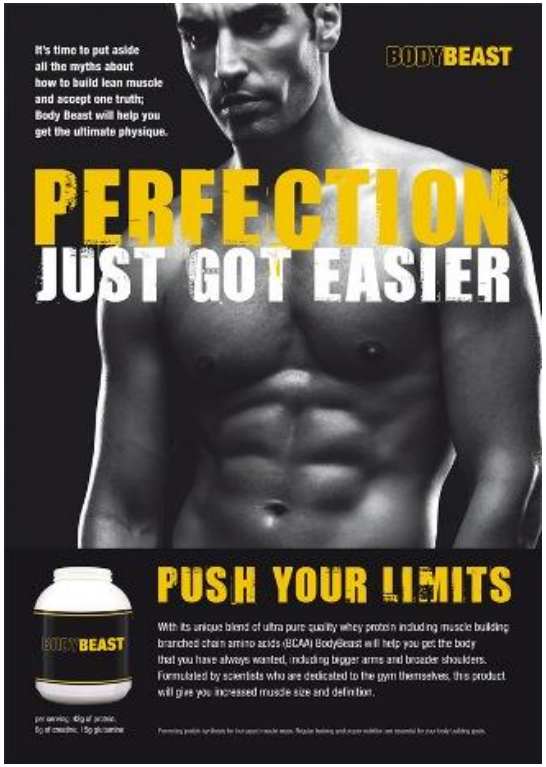


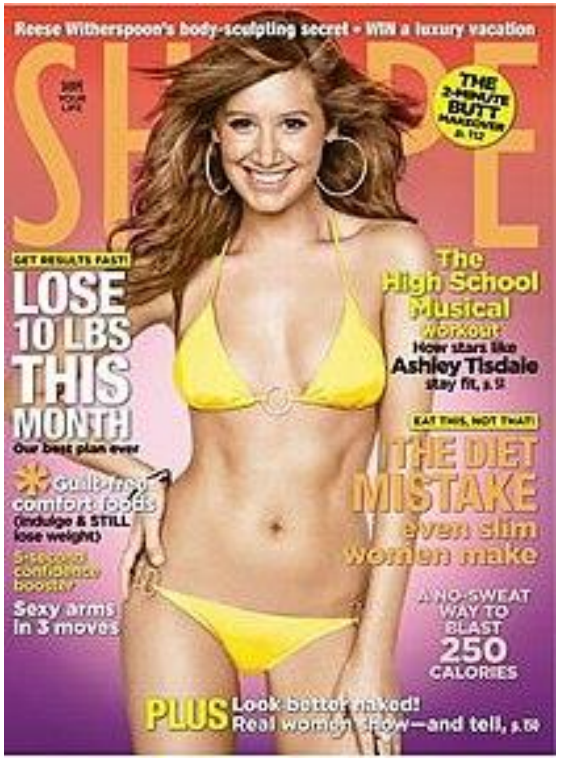


Show Up 4 Nutrition

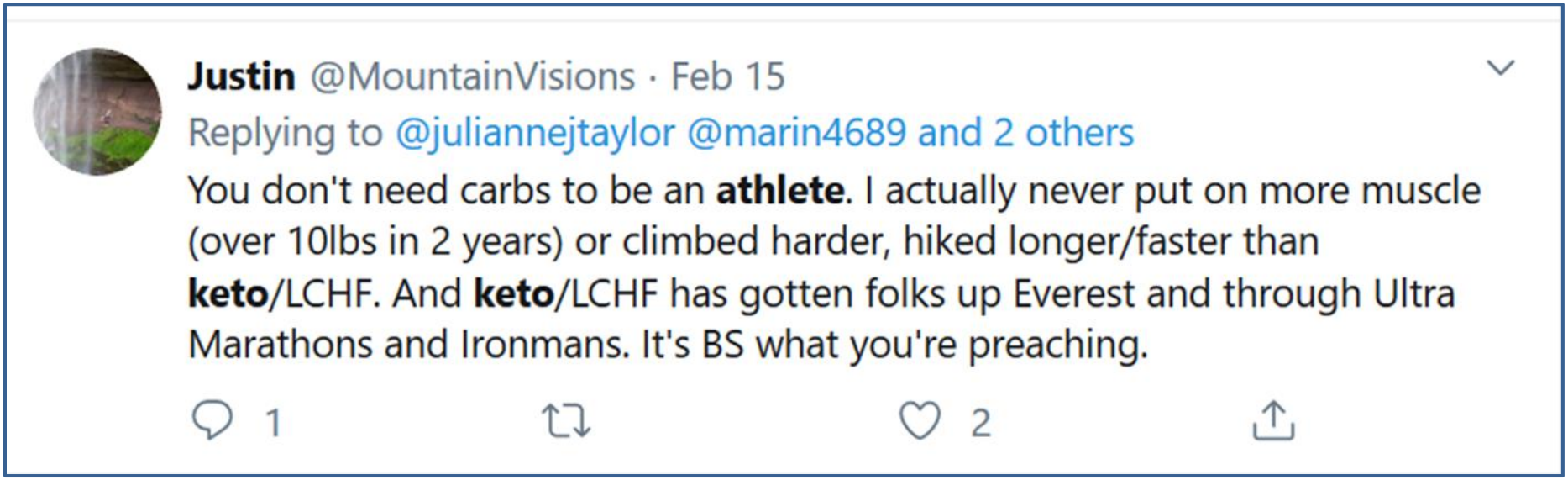


Where do your athletes get advice about nutrition for sport?





Who's advice do athletes listen to?



- Social media is a known driver of mental health distress
  - Eating disorders included
- Athletes may be particularly vulnerable
  - Unscientific nutrition advice from "trusted" sources
  - Constant comparisons, seeking a competitive edge

Common Obstacles to Good Nutrition for Athletes

- Not eating enough
- Not hydrating enough
- Skipping meals
- Missing out on recovery nutrition
- Unsupervised or unsafe dieting
- Uninformed vegetarianism
- An obsession with the scale, body size, or clean eating
- Unhealthy relationship with food

Truth is…

The limiting factors in why most athletes do not achieve their performance goals are…

- **Under-fueling**
  - Not eating enough, dieting, or intentionally restricting
  - Skipping meals and missing out on recovery nutrition
- **Over-training**
  - Training hard but under-fueling
  - Not taking rest days
  - Training when injured

Time off doesn't make you slower. Training injured and overtraining does.

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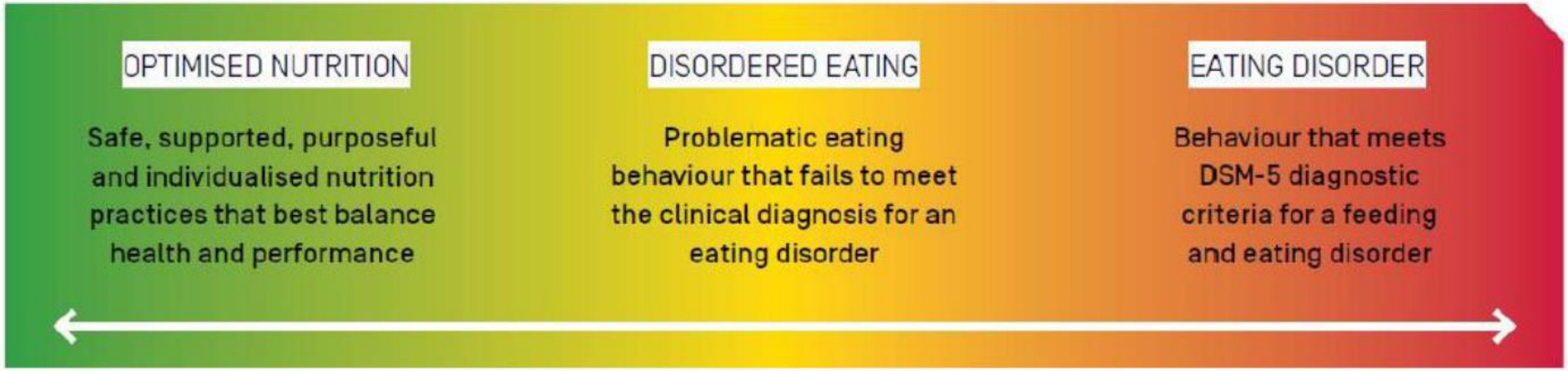
What does an eating disorder look like?

Don’t be fooled by stereotypes…

No sport is immune

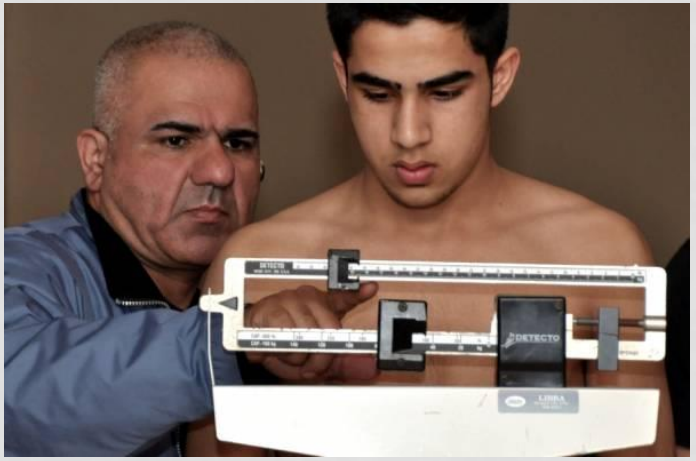
Eating behaviors exist across a spectrum



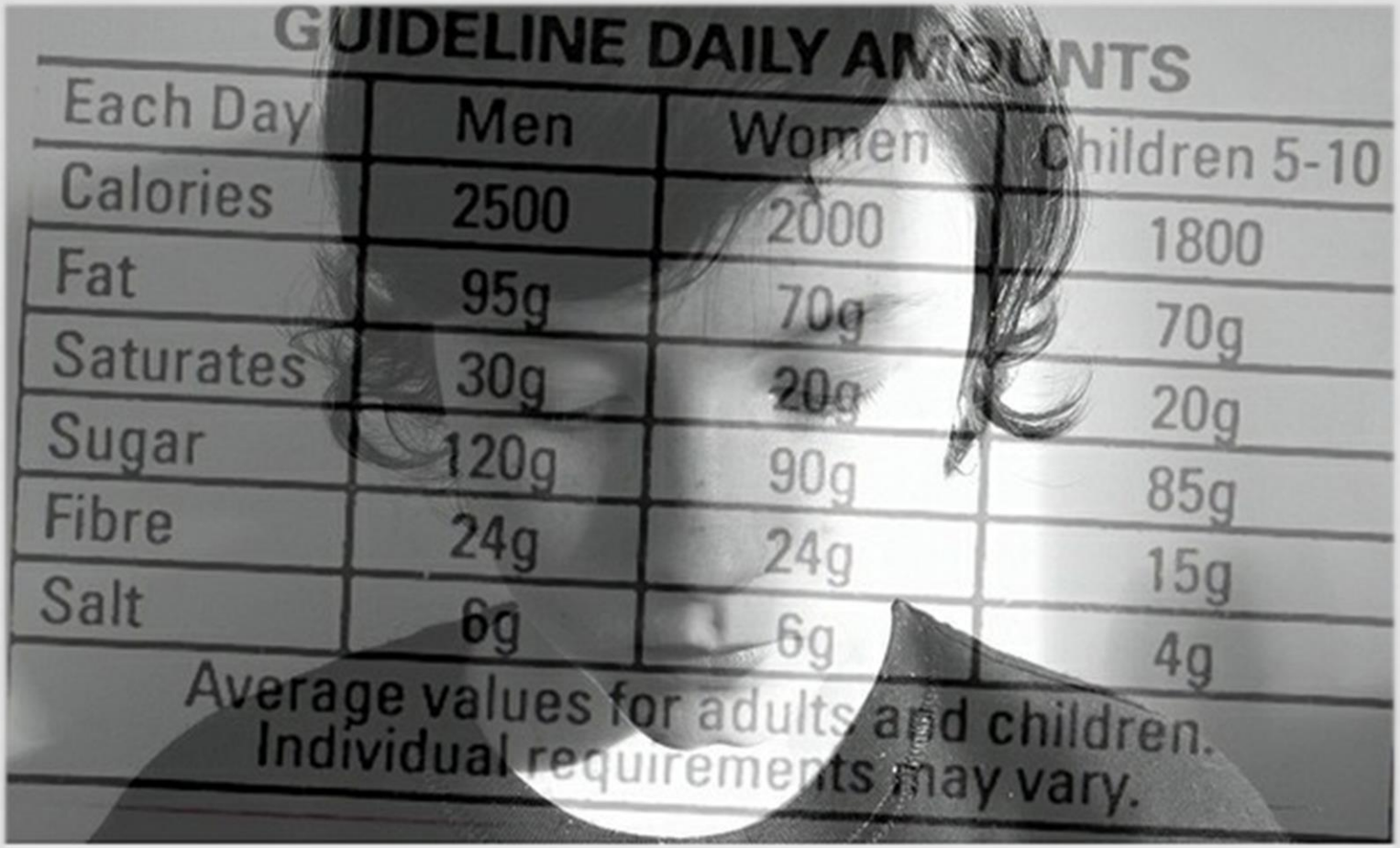
Eating Disorders are diagnosable psychiatric disorders that affect eating behavior and often involve body image

Wells, et al. Br J Sports Med, 2020; 54(21):1247-58

It starts with the best of intentions



It quickly becomes an obsession…



GUIDELINE DAILY AMOUNTS

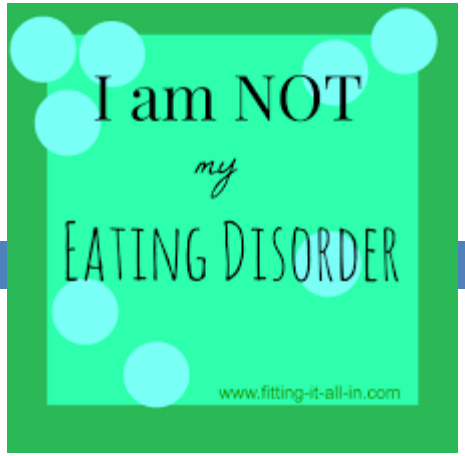
Each Day	Men	Women	Children 5-10
Calories	2500	2000	1800
Fat	95g	70g	70g
Saturates	30g	20g	20g
Sugar	120g	90g	85g
Fibre	24g	24g	15g
Salt	6g	6g	4g

Average values for adults and children.
Individual requirements may vary.

Eating Disorders are…

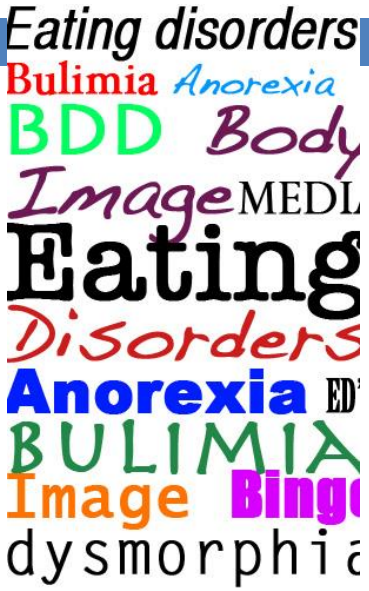
- Mental health diagnoses
- Multi-factorial
- Sometimes visible, oftentimes not
- Shrouded in secrecy, shame, stigma & denial
- Associated with severe illness
- Deadly
- Treatable
- Deserving of attention and timely intervention
- Very poorly understood, often missed or dismissed
- Underdiagnosed & undertreated

Eating Disorders are not…



- A choice
- Caused by any one thing or any one person
- Necessarily visible
- Something to dismiss or leave unaddressed because, *"I'm not **that** sick!"* *Do you have to tell my parents?*
- Something the person can *"give up"* or likely goes away on its own without intervention
- Necessarily the end of an athlete's career
- Usually treated with one cycle of intervention

DSM-5: Typical vs Atypical EDs



- **The three typical EDs**
  - Anorexia Nervosa (AN)
  - Bulimia Nervosa (BN)
  - Binge Eating Disorder (BED)

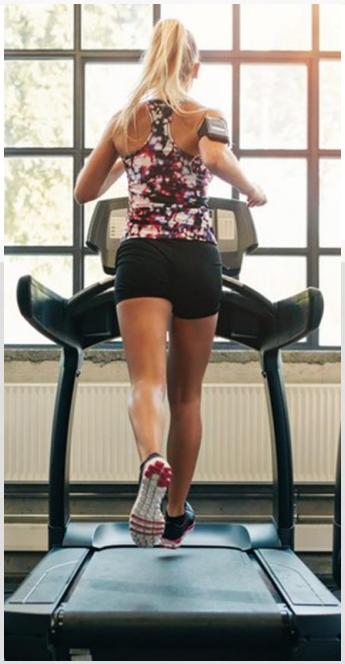
- **OSFED:** Other Specified Feeding & Eating Disorders
  - Atypical AN
  - Sub-threshold BN or BED
  - Purging
  - Night Eating Syndrome (NES)

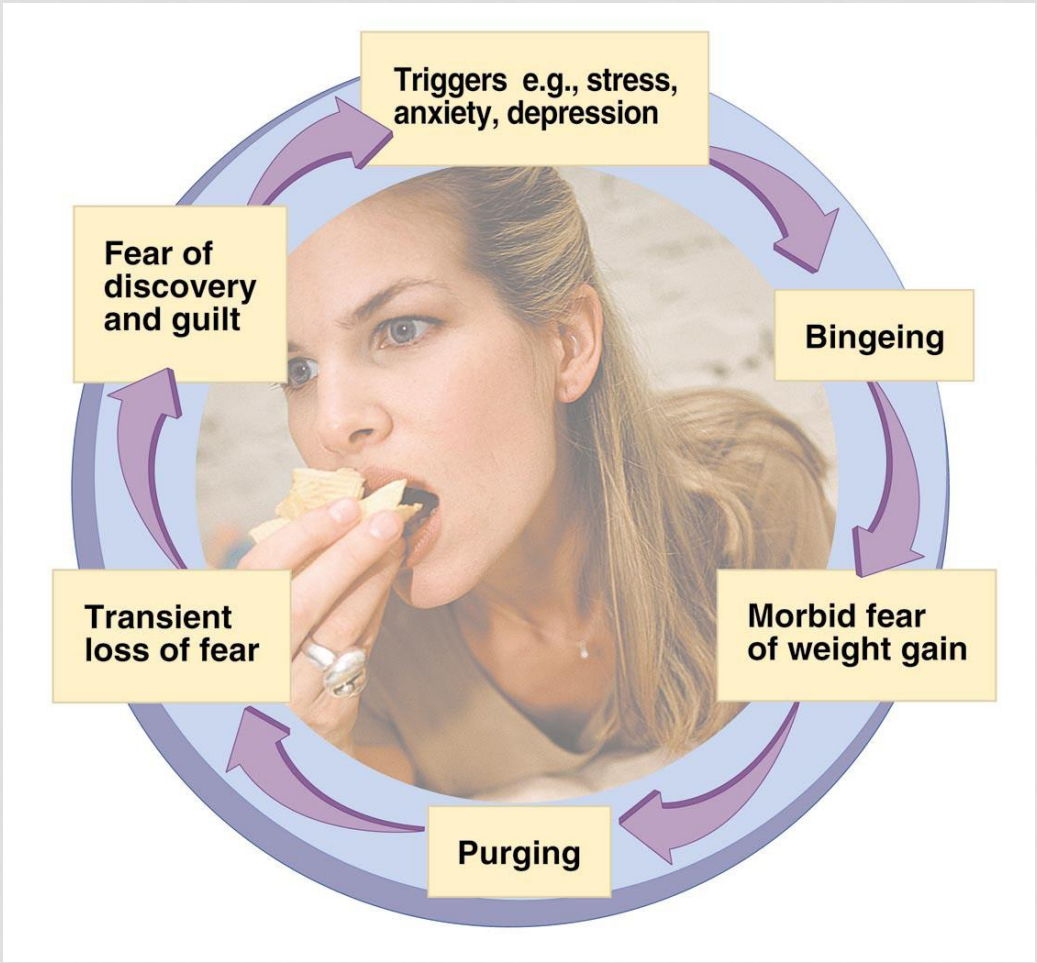
Galmiche, Am J Clin Nutr 2019

Restrictive AN

- **Binge & Purge subtypes**
- **Intense fear**
- **Disturbed body perception**
- Most severe or serious?
- Most visible?
- Lowest occurrence (about 1% of the pop)
- Most female (10:1 ratio)

Binge/Purge Cycle





Bulimia

May be no visible signs

Symptoms are hidden

Exists across a wide range of body weights

Affects about 2% of the population

About 3-10 females per male affected

The Diet/Binge Cycle

Most common
Least discussed

- Affects up to 4% of the population
- About half are males!

Other Specified Feeding or Eating Disorders (OSFED)

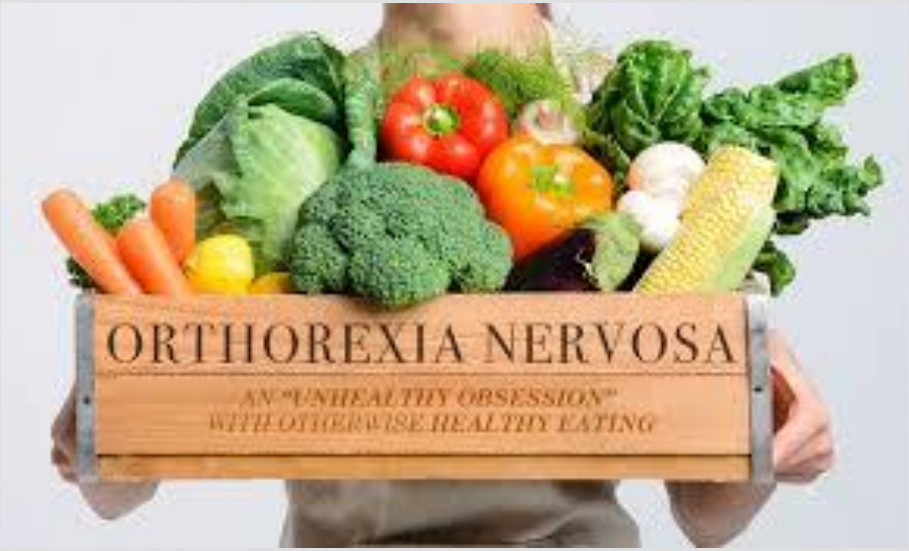
- **Atypical AN:** Significant weight loss from a higher initial body weight

These individuals are as sick as those with AN; they need and deserve assessment and treatment.

- **Subthreshold AN, BN or BED:** Behaviors occur below the threshold of diagnostic criteria (less frequent)

These individuals need and deserve assessment and timely intervention; Don't wait!

Orthorexia Nervosa



A slippery slope between a healthy lifestyle and obsession, when commitment to a virtuous diet interferes with psychosocial functioning

Let's start by knowing the Truths…

Nine Truths about Eating Disorders

TRUTHS

1. Many people with eating disorders look healthy, yet may be extremely ill.
2. Families are not to blame, and can be the patients' and providers' best allies in treatment.
3. An eating disorder diagnosis is a health crisis that disrupts personal and family functioning.
4. Eating disorders are not choices, but serious biologically influenced illnesses.
5. Eating disorders affect people of all genders, ages, races, ethnicities, body shapes and weights, sexual orientations, and socioeconomic statuses.
6. Eating disorders carry an increased risk for both suicide and medical complications.
7. Genes and environment play important roles in the development of eating disorders.
8. Genes alone do not predict who will develop eating disorders.
9. Full recovery from an eating disorder is possible. Early detection and intervention are important.

AED® Academy for Eating Disorders

Academy for Eating Disorders® | www.aedweb.org

Produced in collaboration with Dr. Cynthia Bulik, PhD, FAED, who serves as distinguished Professor of Eating Disorders in the School of Medicine at the University of North Carolina at Chapel Hill and Professor of Medical Epidemiology and Biostatistics at the Karolinska Institutet in Stockholm, Sweden. "Nine Truths" is based on Dr. Bulik's 2014 "9 Eating Disorders Myths Busted" talk at the National Institute of Mental Health Alliance for Research Progress meeting.

Leading associations in the field of eating disorders also contributed their valuable input.

The Academy for Eating Disorders® along with other major eating disorder organizations (Families Empowered and Supporting Treatment of Eating Disorders, National Association of Anorexia Nervosa and Associated Disorders, National Eating Disorders Association, The International Association of Eating Disorders Professionals Foundation, Residential Eating Disorders Consortium, Eating Disorders Coalition for Research, Policy & Action, Multi-Service Eating Disorders Association, Binge Eating Disorder Association, Eating Disorder Parent Support Group, International Eating Disorder Action, Project HEAL, and Trans Folx Fighting Eating Disorders, and other organizations) will be disseminating this document.

#1 Many people with EDs look healthy yet may be extremely ill

- Significant suffering of mind, body, and social well-being are difficult to detect
- Most individuals do not appear emaciated
- Many signs are not visible
- Low willingness or ability to report distress
- Poor insight into level of dysfunction or impairment
- Low help-seeking
- Low rates of detection
- Delayed treatment

Eur Eat Disord Rev 2017

#2 Families are not to blame, they are allies in treatment

- Eating disorders place stress on families
- Patterns of family dysfunction may be a contributor to, or a consequence of, eating disorders
- Caregivers need support!
- Family-based treatment for adolescents has been shown effective and parents are **key allies** in this treatment model
- Social support networks are central to treatment

Eur Eat Disord Rev 2017

#3 An ED diagnosis is a health crisis that disrupts personal & family functioning

- EDs interfere with personal and family functioning
- EDs create financial burden
- EDs delay adolescent growth and development
- EDs cause functional impairments
- EDs interfere with social and intimate partner relationships, reproductive health, and health-related quality of life

Eur Eat Disord Rev 2017

#4 EDs are not choices, but serious biologically influenced illnesses

- EDs are guided by altered neuro-biological pathways involving neurotransmitters & reward/impulse control systems
- Some shared neurobiology with OCD and addiction
- Biologically-determined personality traits and cognitive styles are related to EDs
- Mood-regulating responses to eating, restriction, purging & exercise are **non-typical** in those with EDs
- EDs alter brain structure and function
- Endocrine changes are assoc. with EDs making puberty a vulnerable time

Eur Eat Disord Rev 2017

On Instagram last month…

"We all have **choices** to improve ourselves"

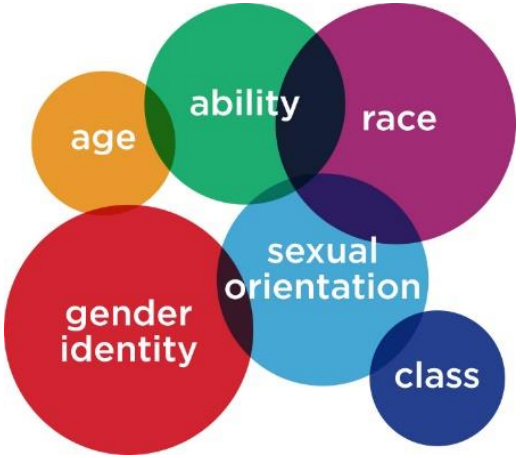
- Poems Porn

"Man cannot remake himself without suffering, for he is both the marble and the sculptor."

Tags: Motivation, Fitness motivation, Fitness

#5 EDs affect ALL people; they do not discriminate

- All genders
- Across the lifespan
- All races & ethnicities
- All body shapes & sizes



- Across different sexual orientations & gender identities with higher rates in LGBTQ+ individuals where body dissatisfaction is often also quite high
- Independent of socioeconomic status

Eur Eat Disord Rev 2017

#6 EDs carry an increased risk for suicide and medical complications*

- EDs are associated with premature death
  - Risk of death in AN is 6x that of the general population
  - Risk of death in BN is 2x that of the general population
  - For females ages 15-24 with AN, risk of death is 12x higher than from all other causes of death
- Heightened risk of suicide in EDs, in part due to shared genetic factors
  - 1 in 5 deaths in AN is attributed to suicide
  - Risk of suicide attempts is 5x higher in those with ED
  - About 1/3 of those with ED diagnoses have had at least one suicide attempt

Eur Eat Disord Rev 2017

EDs have Deadly Consequences

20% to 40% will die, including from suicide

Brain:
Impaired Cognitive Function (Ability to Process and Concentrate)

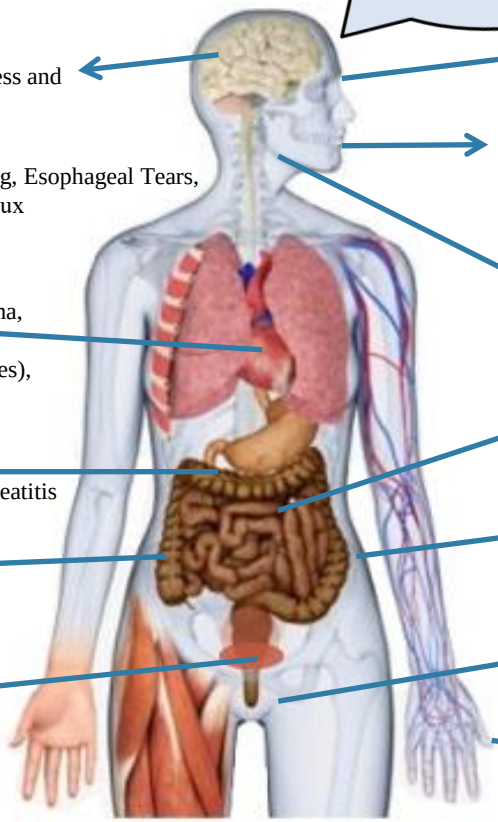
Esophageal/Throat:
Diminished Gag Reflex, Difficulty Swallowing, Esophageal Tears, Barrett's Esophagus, Esophageal Cancer, Reflux

Cardiac:
Loss of/Weakened Heart Muscle, Bradycardia/Tachycardia, Heart Failure, Edema, Heart Palpitations and Chest Pain, Sudden Cardiac Failure (Electrolyte Imbalances), Heart Disease

Kidney/Pancreatic:
Chronic Dehydration, Low Potassium, Pancreatitis

Gallbladder Disease

Menstrual/Fertility:
Menstrual Loss, and/or Irregularities, Infertility, Miscarriage, Premature Birth, Low Birth-Weight Infants



Eyes:
Broken Blood Vessels and Retinal Detachment

Dental:
Cavities, Enamel Loss, Bleeding Gums, Tooth Decay/Rotting, Bleeding Gums, Tooth Loss

Glandular:
Swollen Parotid Glands

Type-2 Diabetes

Gastrointestinal (GI):
Stomach Aches, Constipation, Loss of Bowel Function, GI Bleeding, Gastric Rupture

Sexual Development:
Delayed Puberty, Hormonal Imbalances

Hands:
Calluses and/or scars on knuckles (Russell's Sign)

EDs have the 2nd highest death rate of all MH disorders, surpassed only recently by opioid addiction

Key Take Home Message

Genetic variability contributes to missed or delayed diagnoses and dismissive attitudes that often invalidate the lived experience and delay intervention

***Validate* that no matter how many or how few medical manifestations exist, *the behaviors themselves are worthy* of care and treatment**

Gaudiani, Sick Enough, 2019

#7 Genes & Environment play a role in ED development

- EDs run in families, though it is difficult to tease apart the biologic/genetic influence from the environmental influences
- Family history of anorexia nervosa increases risk 4-fold
- Genetics influence the variability in ED expression:

  48% - 74% in AN

  55% - 62% in BN

  39% - 45% in BED

- Only a small proportion of those exposed to environmental factors will develop an ED; the ***"perfect storm"*** is complex

Eur Eat Disord Rev 2017

#8 Genes alone do not predict who will develop EDs

- Genes & environment **co-act** to influence risk
- An individual's risk is a composite of the cumulative impact of hundreds of genetic & environmental risk and protective factors to which they are exposed
- Those with high genetic susceptibility may be protected by other factors
- Those with low genetic susceptibility may be burdened by cumulative or extreme environmental insults
- Many ED cases are sporadic with no known familial cases

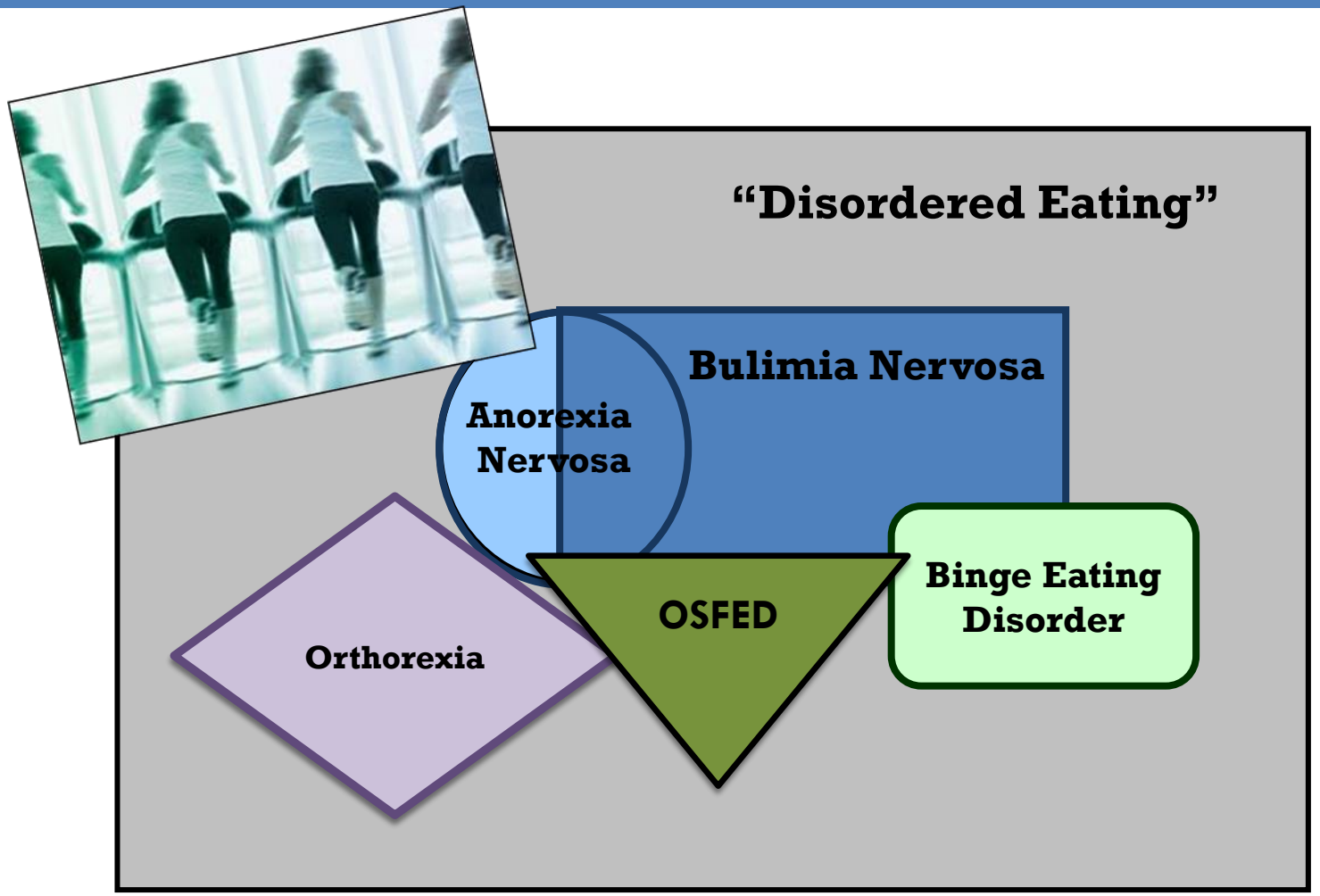
Eur Eat Disord Rev 2017

#9 Full recovery from an ED is possible. Early detection & intervention are key.

- There is no universal definition of recovery
- Often, psychological recovery is incomplete with focus on resolution of physical & behavioral symptoms
- 5-year clinical recovery rates are estimated at 67% for anorexia nervosa and 55% for bulimia
- Duration of illness is inversely related to likelihood of recovery
- Effective psychological & re-nourishment interventions exist, but there are barriers to adequate treatment
- Medications are less well-evidenced

Eur Eat Disord Rev 2017

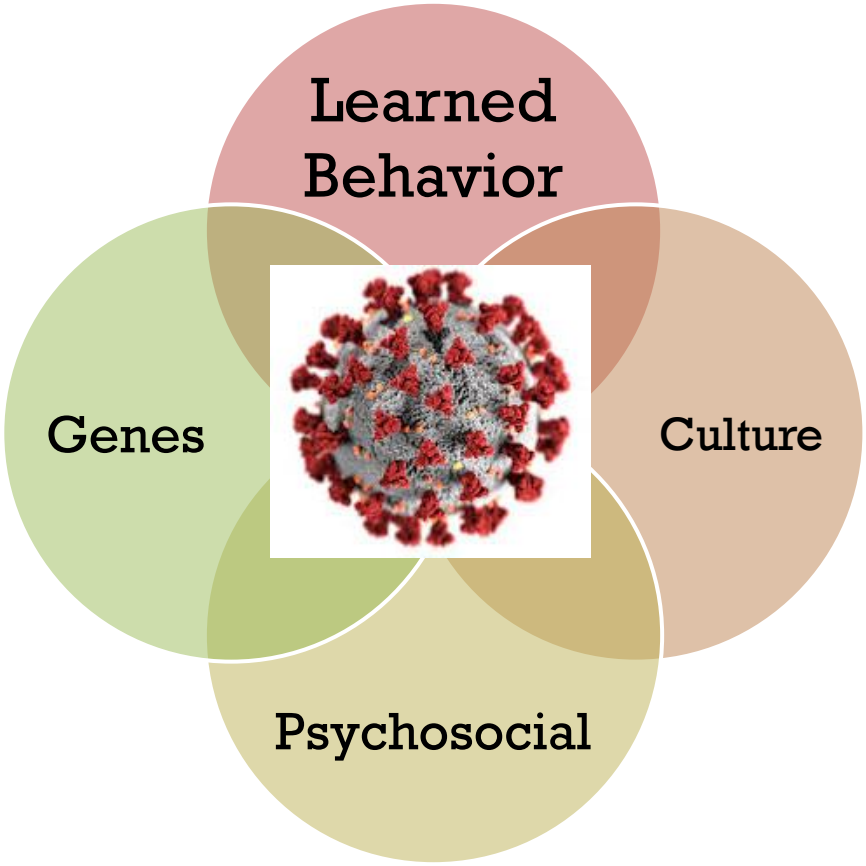
All are worthy of care & concern



Eating Disorders are Multifactorial

Environment

- Home
- Campus
- Academic
- Sport
- Work
- Society
- Poverty
- **T(t)rauma**
- **Isolation**



- **Stress that exceeds coping skills**

Co-existing Mental Health Conditions

- Depression
- Anxiety
- Attention deficit hyperactivity disorder
- Obsessive compulsive disorder (OCD)
- Post-traumatic stress disorder
- Borderline personality disorder
- Substance abuse disorder

ED Onset in Female Athletes

Disordered eating among **female** athletes in any sport appears to be predicted by two main factors: desire to enhance sport performance by losing weight, and negative emotions about missing training sessions *(Krentz & Warschburger, 2011)*

Learned Behavior	Psychological	Social	Culture
• Dieting • Taking control in response to injury	• Perfectionism • Low self-worth • Anxiety	• Peers role modeling ED behaviors • Others taking control of food/eating	• Performance pressures • Team weigh-ins

Arthur-Cameselle & Quatromoni, 2017

New Insights: Male Athlete EDs

Onset Factors

- Sport Environment
- Performance pressure
- Appearance pressure
- Social media comparisons

Maintenance Factors

- Perceived as taking control
- Prove dedication to sport
- Praise, external reinforcement

Barriers to Treatment

- Shame
- Stigma
- Gender stereotypes
  - Low awareness that behaviors were problematic and not normative
  - Low awareness that males get eating disorders
  - No one to talk to…

Freedman, Hage & Quatromoni
J Clin Sport Pshycol 2021

IT STARTS YOUNG

https://www.nationaleatingdisorders.org

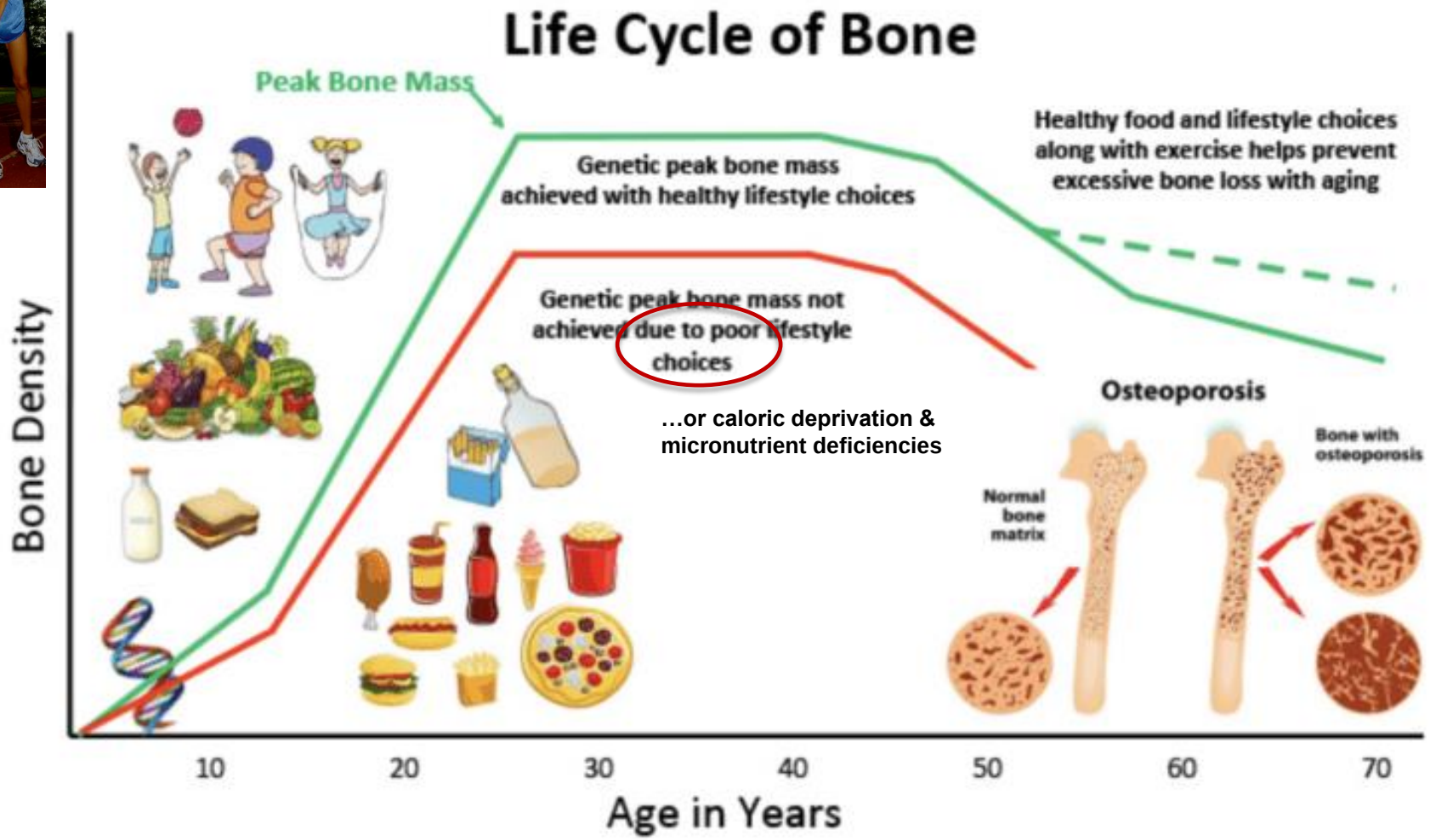
Body Concern

Fat Phobia

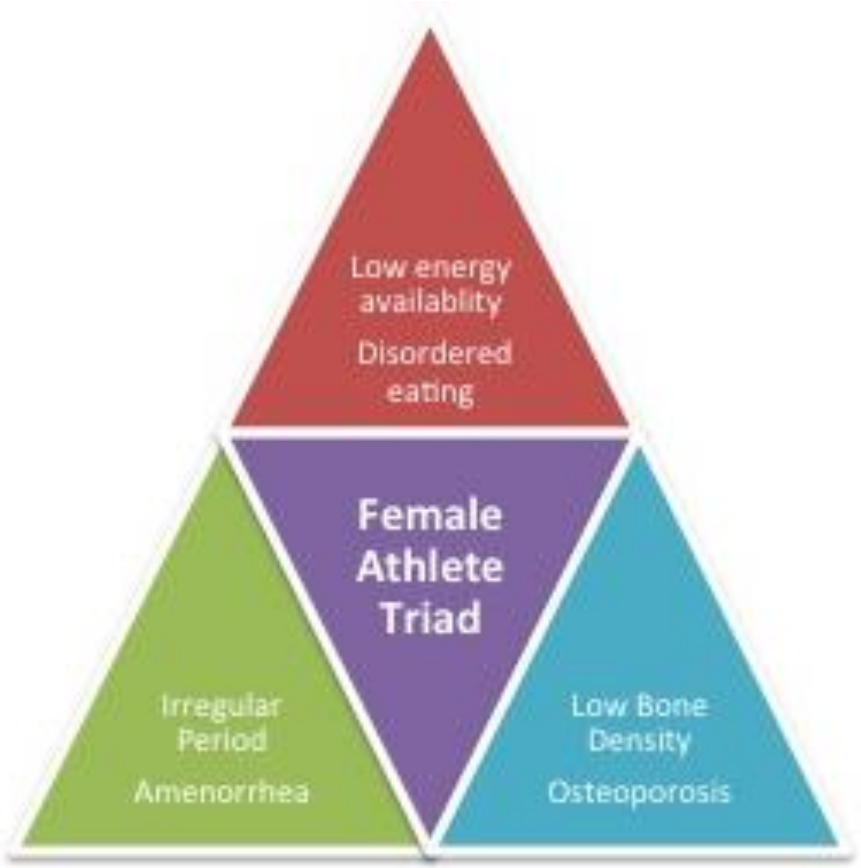
Society & Media

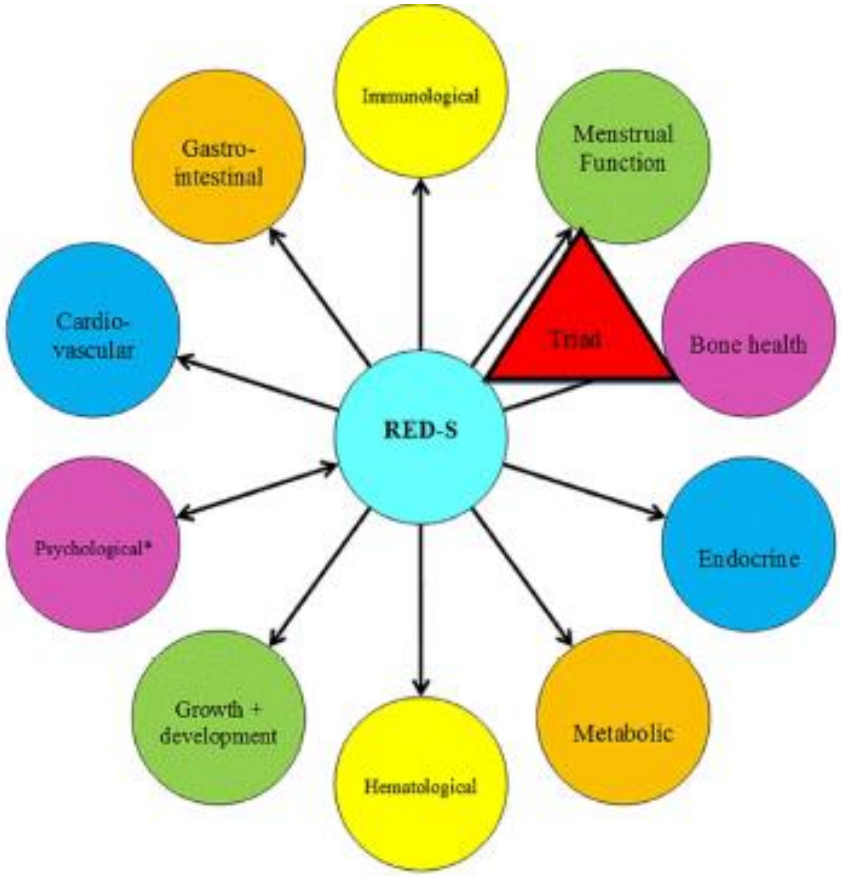
Psycho-Social Distress

Adolescent Eating Disorders hurt Bone



Relative Energy Deficiency in Sport (RED-S)





Mountjoy et al, Br J Sports Med 2014

Malnutrition is a serious medical condition that requires urgent attention. It can occur in patients engaging in disordered eating behaviors, regardless of weight status. Individuals with continued restrictive eating behaviors, binge eating or purging, despite efforts to redirect their behavior, require immediate intervention.

Starvation can occur in people of any body shape and size

Gaudiani, 2019

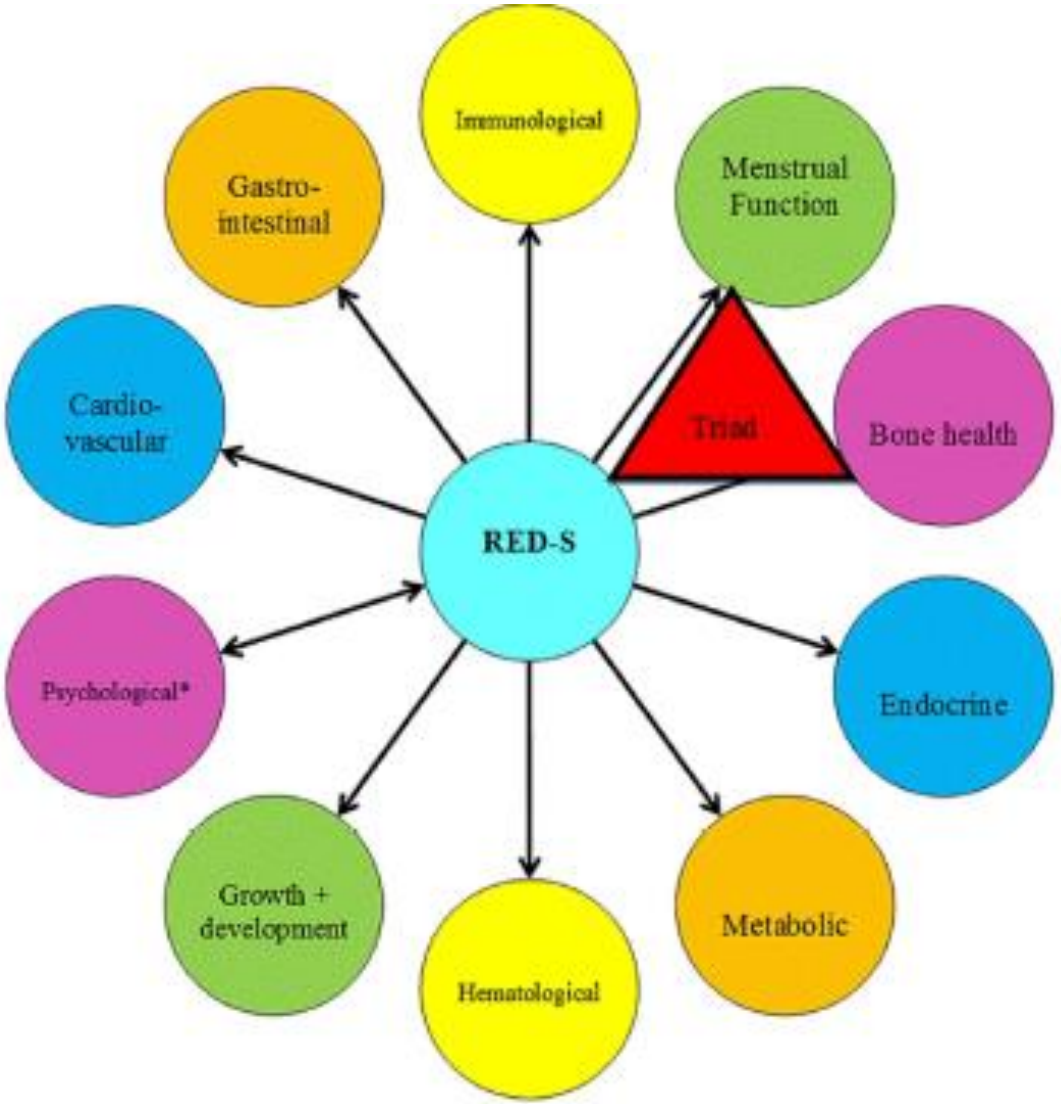
Nutrition is the solution

AED Report, 2016

Relative Energy Deficiency in Sport (RED-S)

Low Energy Availability **sabotages** health, mental health, and performance.

It also risks injury.



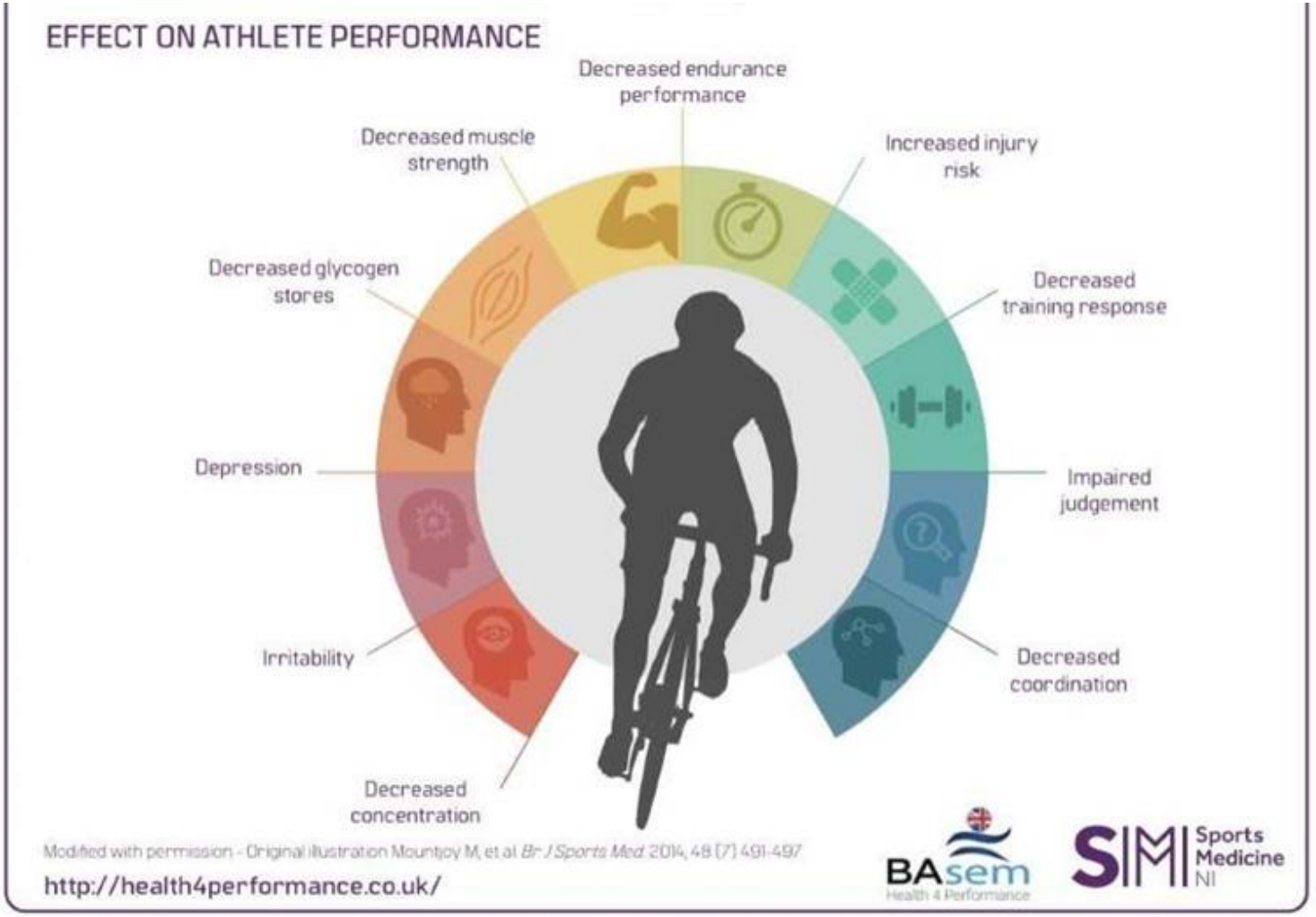
Mountjoy et al Br J Sports Med 2014

Social & Emotional Consequences…

- Increased depression, anxiety, irritablity
- Social isolation
- Difficulty concentrating, poor memory
- Poor academic performance
- Relationship conflicts and tension
- Poor self-esteem, low self-worth

- Inability to focus on other priorities due to preoccupation with food, weight, etc.
- Difficulty coping with stress
- Increased rigidity of thoughts and behaviors

RED-S Sabotages Performance



Signs of Athlete Suffering

- Chronic fatigue
- Depleted muscle and adipose stores
- Dehydration and electrolyte imbalances
- Fainting, weakness, anemia, low immunity
- Amenorrhea and osteopenia
- Compression fractures and stress fractures
- Delayed recovery from injury
- Suboptimal training and performance
- Inability to train or compete

Key Take Home Message

EDs cause **"metabolic hibernation."**

In this state, it is impossible to thrive as a student, athlete, teammate, sibling, partner, friend…

Use objective evidence of body suffering or dysfunction to challenge any firmly held convictions that the athletes is not sick enough to need help

Gaudiani, Sick Enough, 2019

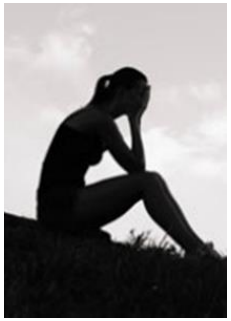
Heart Rate *"But I'm an athlete…"*

Athlete Heart

- Strong, well-conditioned cardiac and skeletal muscles
- Efficient & strong heart that only needs to beat 55 bpm
- But rarely does an athlete's HR fall <50, nor does it change when simply walking across the room

Starving Heart

Gaudiani, Sick Enough, 2019



- Bradycardia at rest (<60), conserving energy in hibernation
- Both skeletal muscle mass & cardiac muscle mass is lost, and loss is exacerbated in malnourished folks who exercise
- HR will rise even on minimal exertion
- Change from resting HR to walking HR of ≥75%

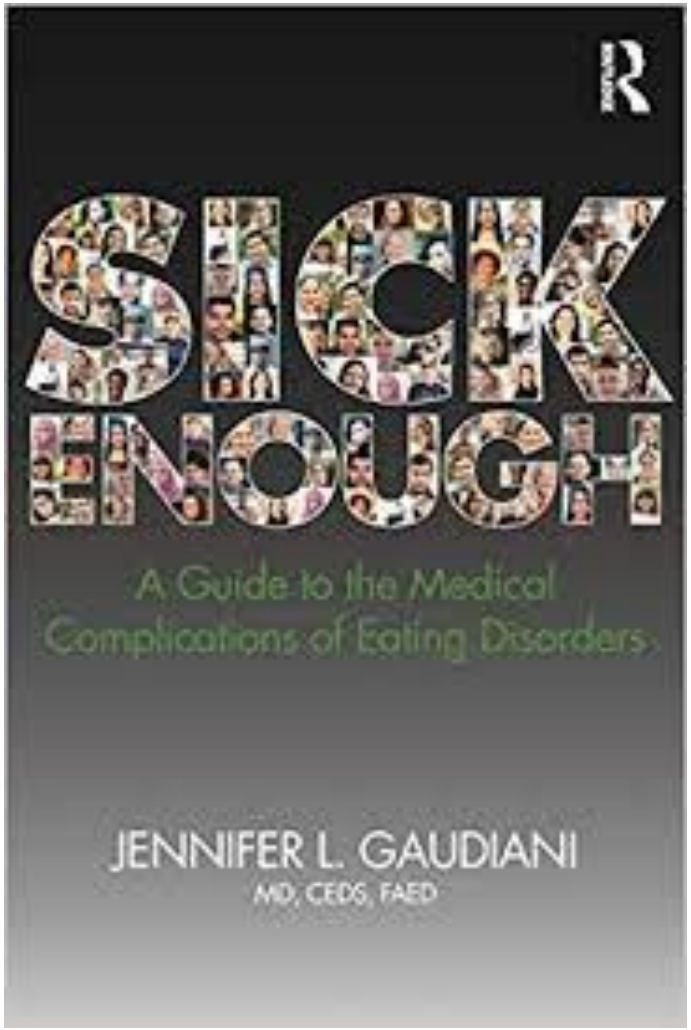
Walk across the room test

EDs in Sport are Metabolic Injuries

- Well-documented clinical signs and symptoms
- Sensitive and specific screening tools
- Diagnostic criteria
- Objective measures of disease severity
- Evidence-based intervention strategies
- Measurable treatment outcomes
- Markers of recovery and relapse
- Morbidity and mortality associated with progression and if left untreated

Why do we care so much about brains, and so little about minds?

Medical Consequences of EDs



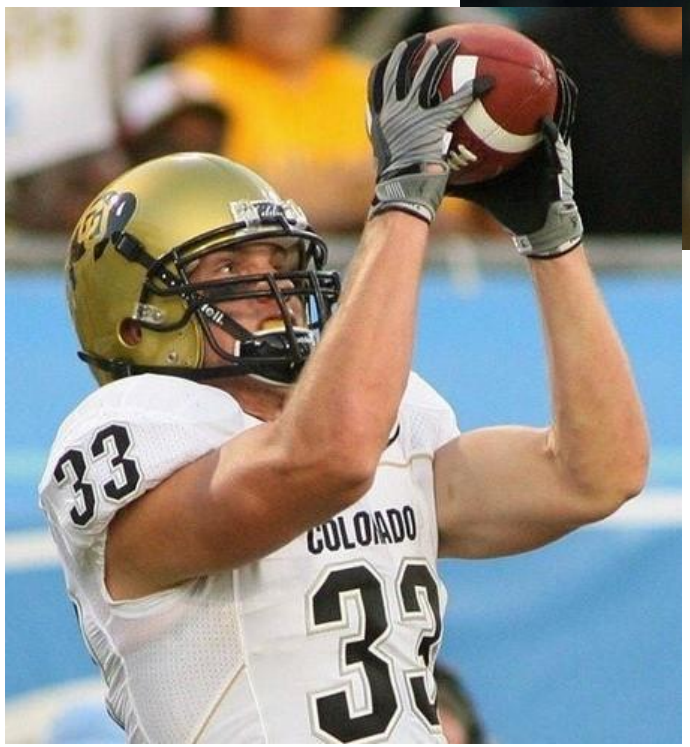
Key Messages

- Anyone with an eating disorder **is sick enough** to warrant treatment
- Medical complications are serious and life-threatening
- There is large variability in how EDs present
- There is no single marker of illness
- **Nutrition is the solution**

Don’t be fooled by stereotypes…

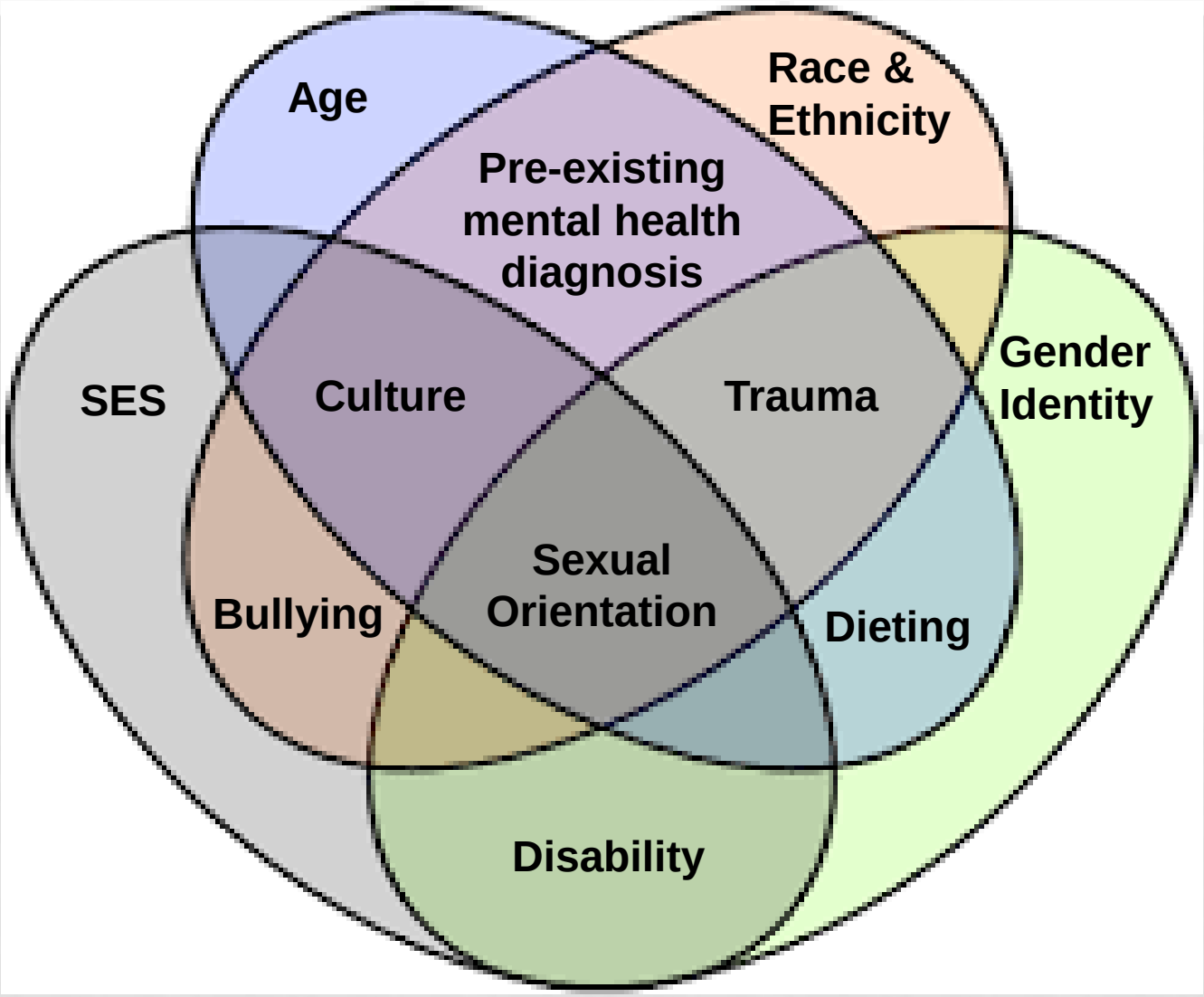
No sport is immune

It is not always visible or predictable who is at risk…



Vulnerable Populations

INTERSECTIONALITY



ACADEMY FOR EATING DISORDERS®

Nine More **Truths** about Eating Disorders: Boys and Men

Forenote: We acknowledge the diversity of gender identities. Gender identity refers to one's innermost concept and perception of self as man, woman, neither, or another gender. Although the following document is focused on boys and men, we recognize that many of these truths may be applicable across individuals with varied gender identities, and we note that most existing knowledge in this area is based on cisgender boys and men.

1. The eating disorders field historically developed through a female-centric lens.
2. Boys and men with eating disorders remain under-recognized and under-served.
3. Eating disorders can, but do not necessarily, present differently in boys and men.
4. Medical complications of eating disorders in boys and men can be severe, and mortality is elevated.
5. Seeking treatment for an eating disorder can be especially challenging for boys and men.
6. Boys and men can face additional eating disorder treatment barriers.
7. Eating disorders can affect boys and men across the lifespan.
8. Eating disorders can affect cisgender and transgender boys and men of all sexual orientations, race/ethnicities, cultures, socioeconomic backgrounds, and body shapes and weights.
9. Body ideals in boys and men are diverse and can be influenced by many factors.

Produced in collaboration with Dr. Jason M. Lavender, PhD, FAED. These "Nine More Truths about Eating Disorders: Boys and Men" are based on Dr. Lavender's "Where to from here? Bringing Males into the Eating Disorders Fold" sociocultural plenary discussion at the 2020 International Conference on Eating Disorders.

AED®

Eating Disorders in Sport

At risk:

- Any athlete training & competing at high levels
- Aesthetic, weight-based, and "lean" sports
- Perfectionists, harshly critical, low self-worth
- Injured athletes
- Any with co-existing psych conditions

- Performing below expectations
- Thin or sport-specific body ideal
- Muscular ideal (males)
- Over-valuation of athlete identity
- Compulsive exercisers
- **Unsupervised dieters…**

Akiko Suzuki

Trait Similarities *It's a fine line…*

A Good Athlete	An Individual with an Eating Disorder
Mental toughness	Asceticism (severe self-discipline)
Commitment to training	Excessive/Compulsive exercise
Pursuit of excellence	Perfectionism
Coachability	Overcompliance
Unselfishness	Selflessness
Performs despite pain	Denial of discomfort

Thompson & Sherman, Eating Disorders: J Treat & Prev, 1999

Symptoms & Behaviors: Often Normalized

How Athletes Present

- Increased focus/dissatisfaction with weight or body shape, size, image
- Eating too little, exercising too hard, overtraining or compulsive exercise
- At any BMI, may be underweight, in larger body, weight suppressed
- Dieting, binge/purge or binge/diet cycling
- Stress fractures or recurrent overuse injuries
- Extremist thinking, rigid behaviors, harshly self-critical
- Dissatisfied with performance
- Supplements valued, food distrusted
- Overly restrictive diets, veganism, extreme clean eating, orthorexia
- Difficulty coping with stress… sports, academics, family, coach, peers, relationships, bullying, trauma…

How common among Athletes?

- Estimates are underestimates
- Unmentionable, undetected and untreated
- Athletes are more likely to underreport symptoms and consider their ED habits benign, a sign of commitment
- Prevalence estimates are 2-3 times higher in athletes vs. non-athletes; rates are increasing for male athletes
- ED rates vary by sport, noted as high as 42% of athletes in aesthetic sports
- As many as 70% of athletes in weight class sports are dieting or have disordered eating behaviors

Joy et al. Br J Sports Med 2016

My objectives

- Describe unique and intersectional vulnerabilities of student-athletes that put them at risk for eating disorders, body dissatisfaction, and compulsive exercise
- Identify the consequences of eating disorders in sport
- Empower a call to action
- Share tools and resources to build capacity to prevent and respond to eating disorders in sport

Success, or Sabotage?

A Tale of Two Runners

Quatromoni, J Acad Nutr Diet 2017

David

- International student
- Cutting body fat
- Seeking coach approval
- High training load
- Tracking calories, weight, mileage, times
- Performing below expectations
- Fatigued, anemic
- Distracted, stressed

Andrea

- State champion in HS
- Prior hospitalization
- Coach's "favorite"
- "Extra" training load
- Eating mainly produce
- Lives alone, isolated
- By Dec, weight <100#
- Amenorrheic
- Recurrent bone injuries

Key Similarities

Tale of Two Runners
Quatromoni, J Acad Nutr Diet 2017

- Same urban university
- Same sport
- Same coaches
- Freshmen in the same year
- Access to same multidisciplinary providers
- In treatment for 5 years
- Achieved recovery from the eating disorder
- Achieved excellence in sport

eat right.

RESEARCH
Case Study

A Tale of Two Runners: A Case Report of Athletes' Experiences with Eating Disorders in College

Paula A. Quatromoni, DSc, RD, LDN

ARTICLE INFORMATION

Article history:
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Accepted 26 September 2016

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Eating disorder, not otherwise specified (EDNOS)
Sports nutrition
Case report
Eating disorders

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http://dx.doi.org/10.1016/j.jand.2016.09.032

ABSTRACT

Athletes are at higher risk than the general population for eating disorders, and risk is heightened for athletes in thin-build sports, including track. Collegiate athletes are particularly vulnerable to disordered eating when the transition from home to the college environment adds to the stress of performance pressures and the high demands of the sport environment. Male and female athletes who develop eating disorders share some common characteristics, yet their experiences can be quite different, in part as a consequence of their sex and how eating disorders develop, and are recognized, acknowledged, and treated, within the culture of sports. This case report describes the experiences of two track athletes, one male and one female, who were recruited to the same Division 1 collegiate track program. Both were elite athletes, freshmen in the same year, experiencing the same urban college environment, and experiencing an eating disorder characterized by restrictive eating, significant weight loss, injury, and compromised performance in sport. Both received treatment from a multidisciplinary team of professionals. Both athletes achieved weight restoration, recovery from the disorder, and success in their sport. In spite of the similarities, striking differences were apparent in clinical presentation, predisposing features, onset of symptoms, entry points to treatment, interventions received, and clinical courses through treatment that depict sex differences in how eating disorders present in athletes and are addressed in the sport environment. Findings endorse the need for research and inform prevention strategies, risk assessment, and intervention approaches for nutrition and sports medicine professionals and collegiate athletic departments.

J Acad Nutr Diet. 2017;117:21-31.

Key Differences

Tale of Two Runners
Quatromoni, J Acad Nutr Diet 2017

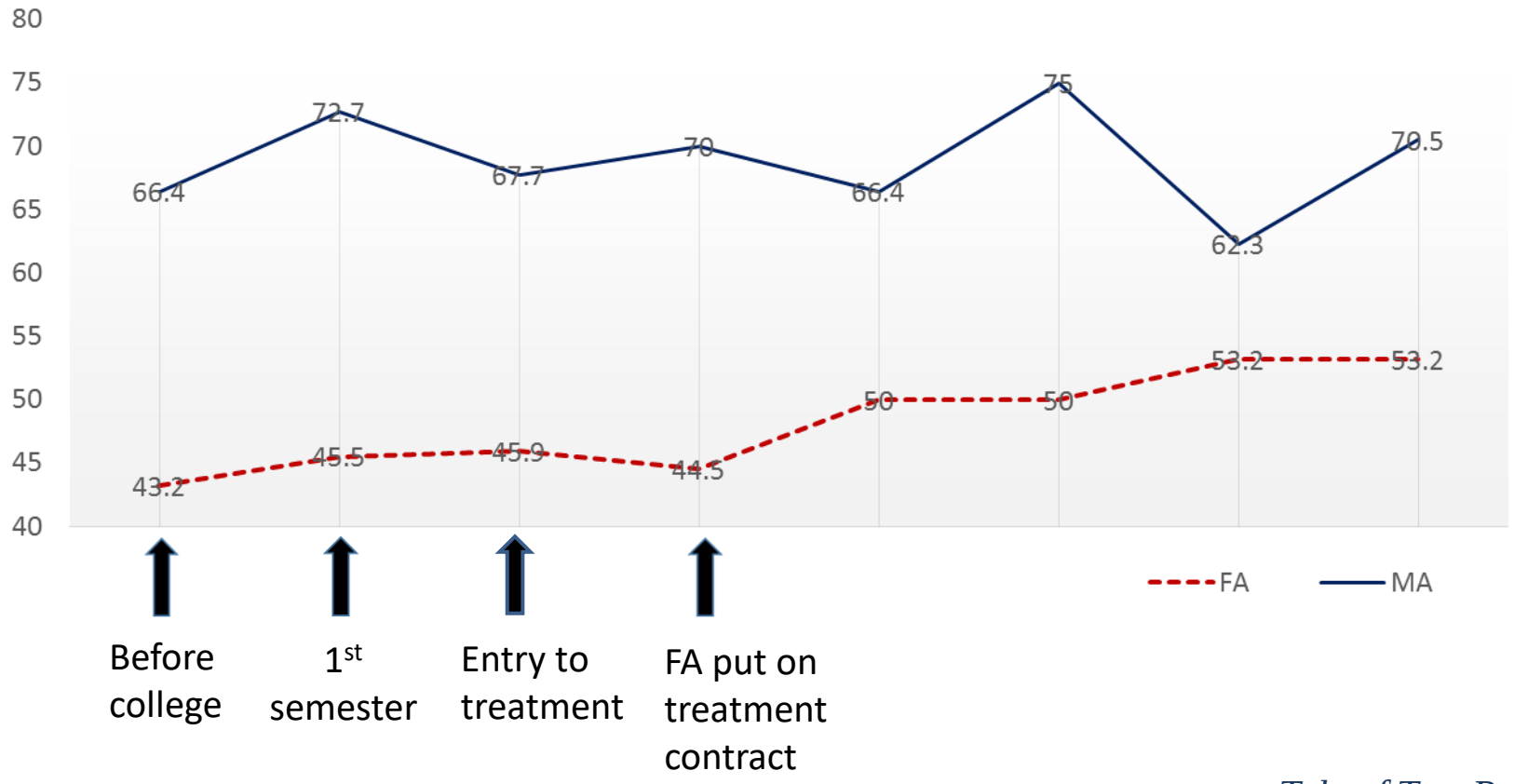
Female Athlete

- Came with ED
- She was "sent"
- Entry via Sports Med
- Put on a treatment contract
- Recovery was slow and steady, but consistently uphill

Male Athlete

- Developed ED
- He came willingly
- Entry via Nutrition
- Not on a treatment contract; under the radar
- Recovery marked by several cycles of progress & relapse

Weight Trajectories before and during 5 years of treatment



Tale of Two Runners
Quatromoni, J Acad Nutr Diet 2017

David's Top 3 Challenges to Overcome

The Obstacle	Therapy	Nutrition	Team Culture/Norms
Belief that weight is a measure of success or failure (thinner = winner)	CBT, Athlete identity, Body Image work	Nutrition education; Commitment to fueling; Positive experiences at goal weight	Make performance the focus, not weight; Do not monitor, blame, discuss, or set wt goals
"High commitment eating" at all times, at any cost; or else there was guilt, shame and punnishment	CBT, DBT, Psycho-education, Journaling to process/emote	Eating competence; Food acceptance; Addressing temptation to rely on supplements and functional foods	Team environment and role-modeling that promote healthy, flexible eating; no judgement zone
Overvaluation of nutrition as the key to performance and body size goals; **constant comparison** to others in sport	CBT, Talk therapy, and MI to identify the "WHY" and to align with values	Nutrition education; Shift from "dieting" to adequate fueling to support personalized training needs and performance goals	Endorse balance in nutrition, training and rest/sleep with size diversity and body acceptance; address ED as metabolic injury

Proctor & Quatromoni

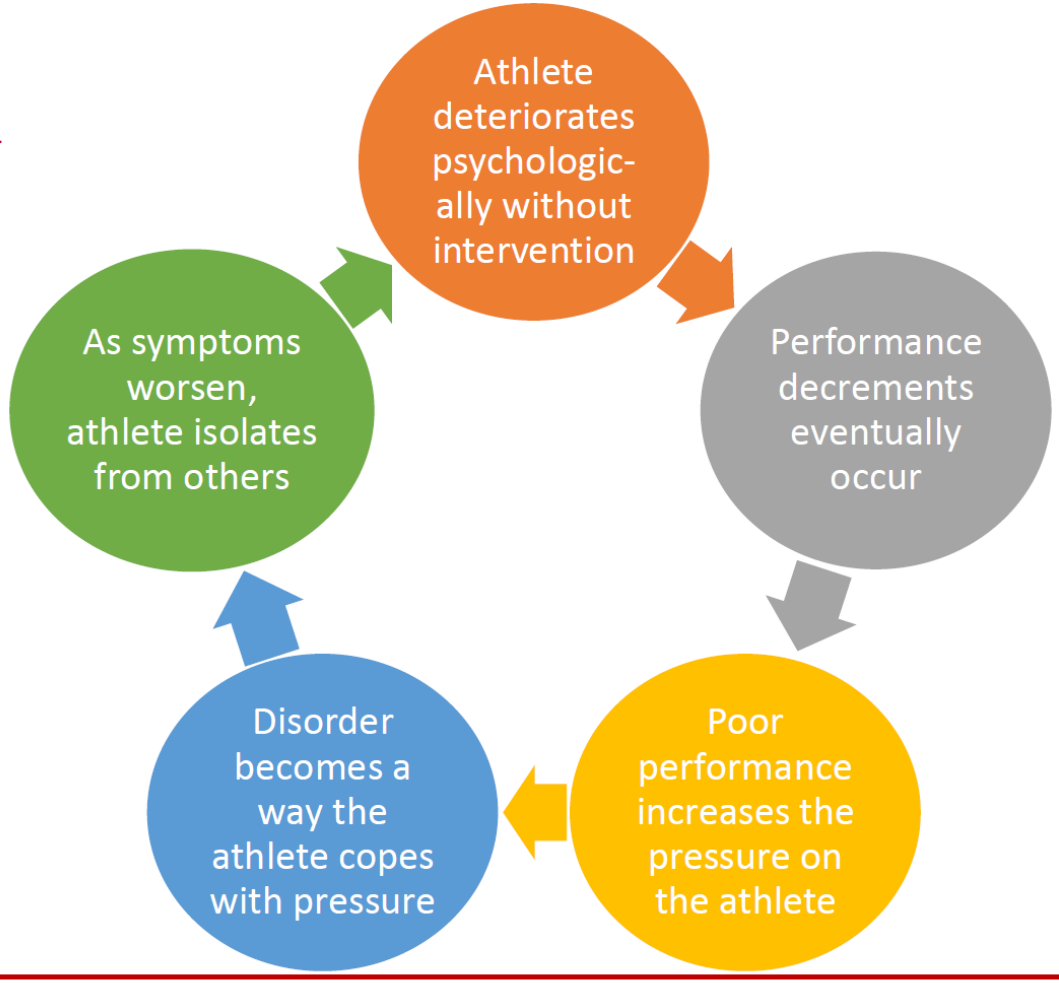
Most Important Lesson

Restrictive eating caused my underperformance and injuries. I learned about the small things that help my body: hydration, nutrition and psychology.

Most Important Lesson

I suffered from the female athlete triad. I was injured a lot and missed my entire junior year because of a broken bone in my foot. ***I thought that thinner equaled faster.*** *But I'm in a much better place now. I'm confident in myself and in my abilities.*

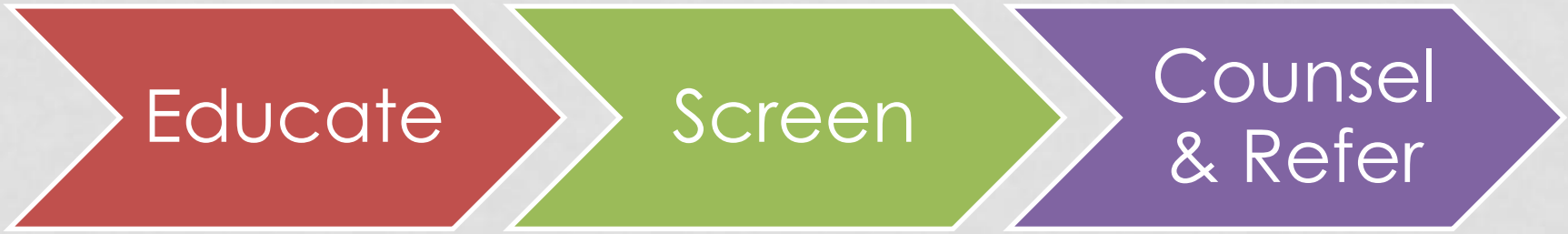
Why Athletes with Eating Disorders Need Treatment



My objectives

- Describe unique and intersectional vulnerabilities of student-athletes that put them at risk for eating disorders, body dissatisfaction, and compulsive exercise
- Identify the consequences of eating disorders in sport
- Empower a call to action
- Share tools and resources to build capacity to prevent and respond to eating disorders in sport

Pathway to Prevention



- Do not ignore warning signs or fall prey to stereotypes
- Do not wait for performance to dip or weight loss to become extreme
- **Early intervention is key to recovery**
- Disordered behaviors are contagious & can develop into eating disorders
- Eating disorders are serious mental health illnesses; they are not a choice
- **People do not recover without treatment and intervention**
- Failure to intervene acts to condone the behavior and increases risk
- Expressing care and concern leads individuals into treatment
- **Remember, people die from eating disorders…**

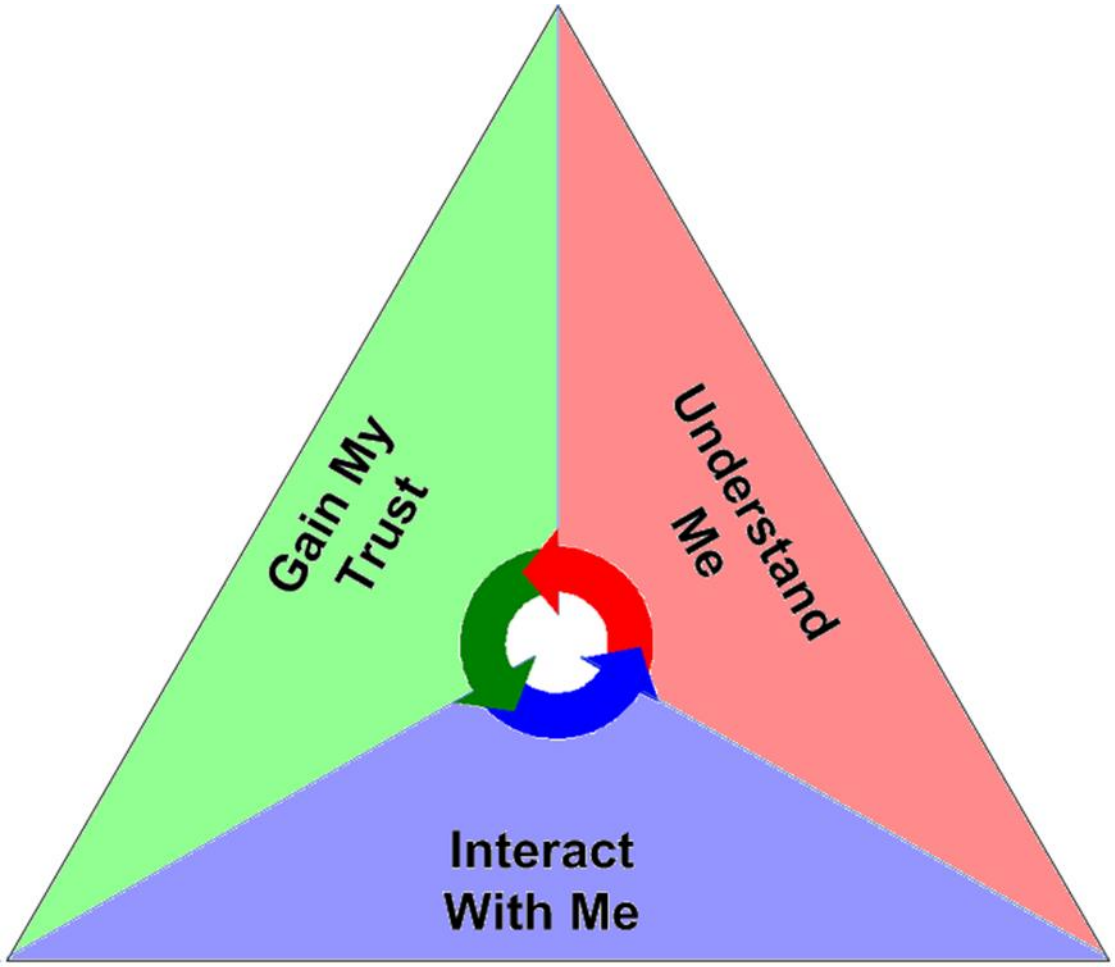
Prevention Strategies

- Education, awareness & advocacy
- Eating competence
- Role modeling
- Reject diet culture
- Combat weight stigma
- Mind-Body connections
- Social connectedness
- Emotional wellbeing
- Direct, open communication
- Coping skills, learned in therapy

Building Capacity

- Attune to culture, language, policies, and role modeling
- Provide accurate sports nutrition education & resources
- Collaborate with your Athletic Trainers, counselors and wellness staff
- Build an Eating Concerns Team
- Build a referral network of professionals in your community
- Advocate for and attend continuing education…

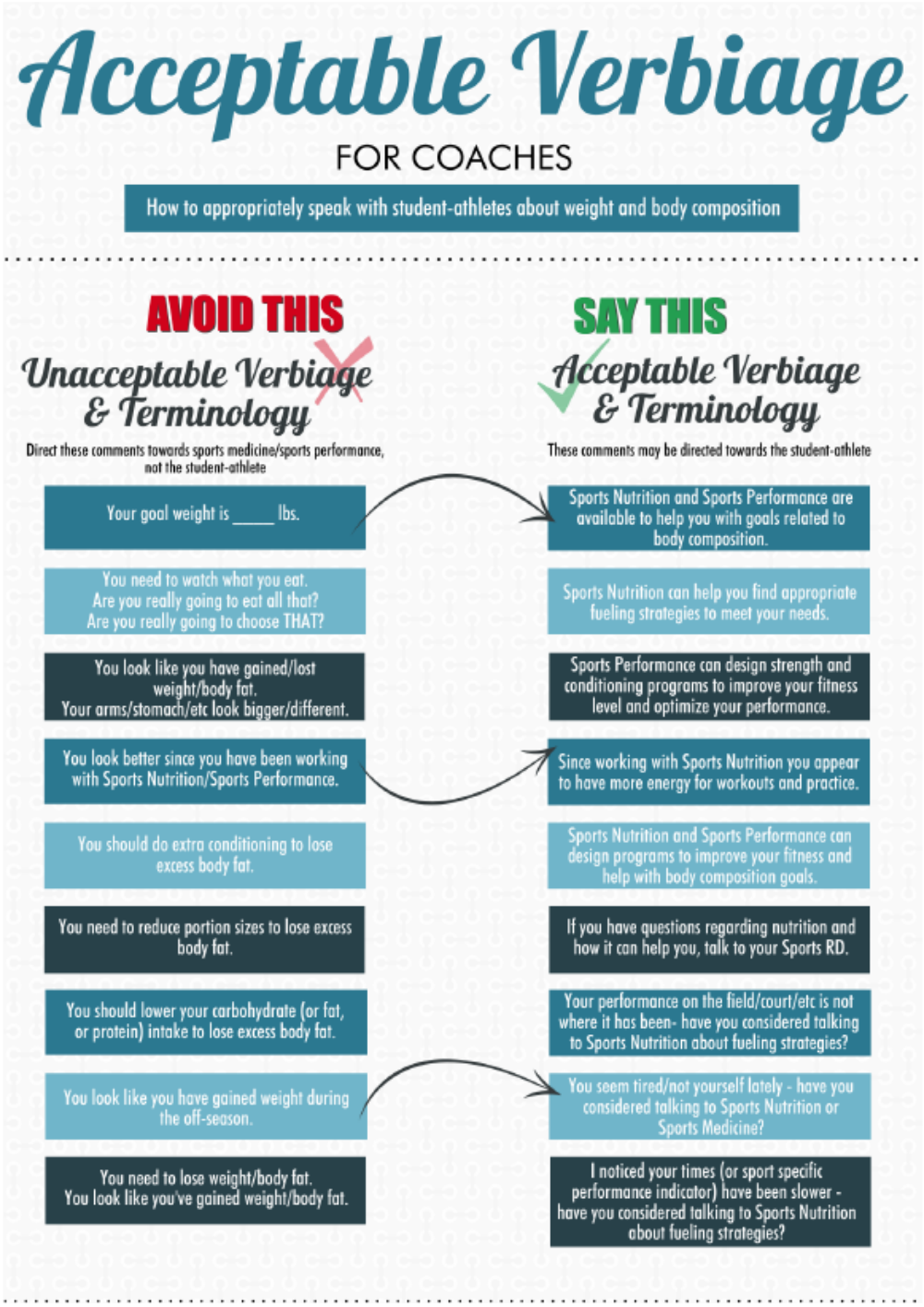
Best Practices



Benari & Quatromoni, 2006

Institute Protocols

- Role model proper fueling, recovery nutrition, and rest days
- Mandate Coach education
- Collaborate closely with AT
- Screen, identify, and refer
- Conversations about weight initiated only by the RD (not Coach)
- Weighing protocols per RD
- Use treatment contracts and Return-to-Play guidelines when needed



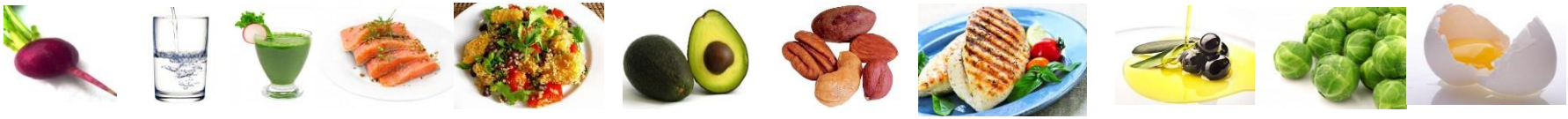
Advice for Coaches

CPSDA

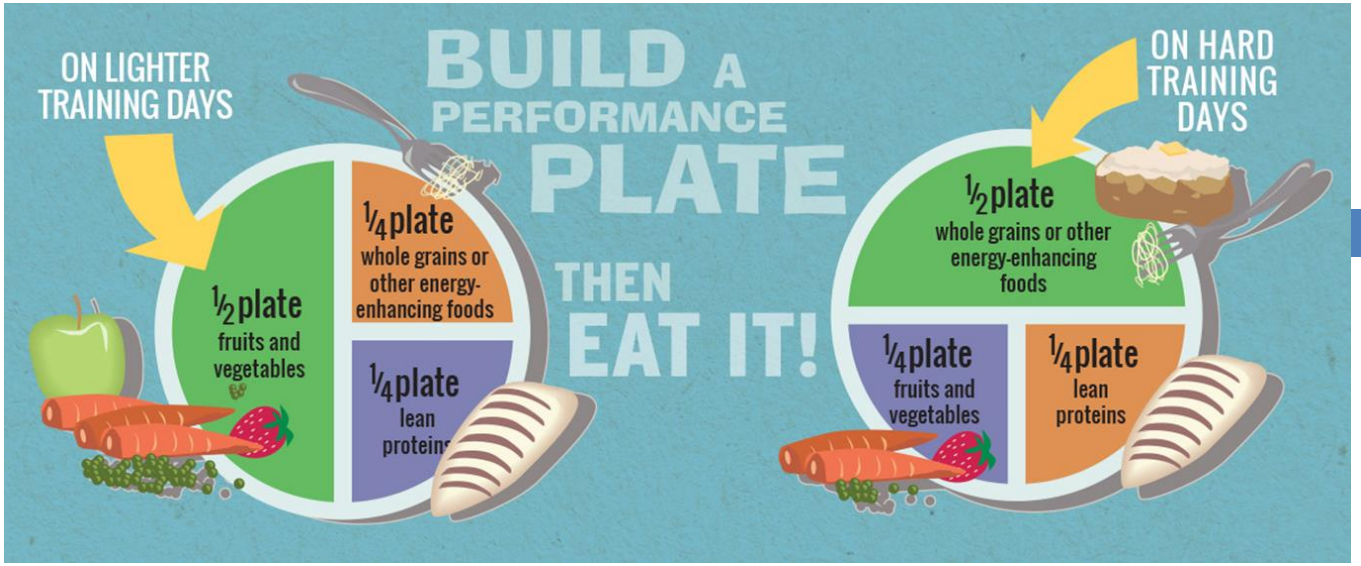
sportsrd.org

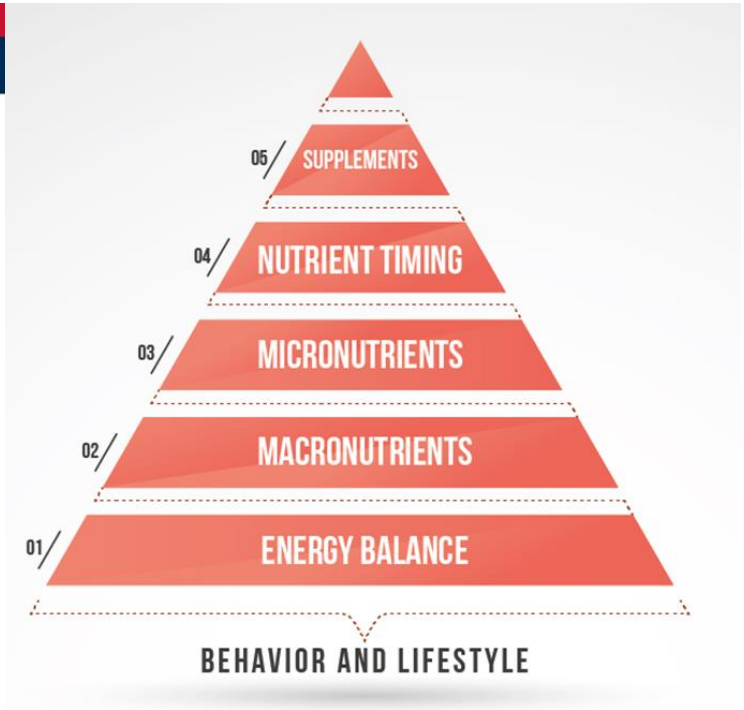
Nutrition is a Team Responsibility

Teammates count on each other to fuel up!

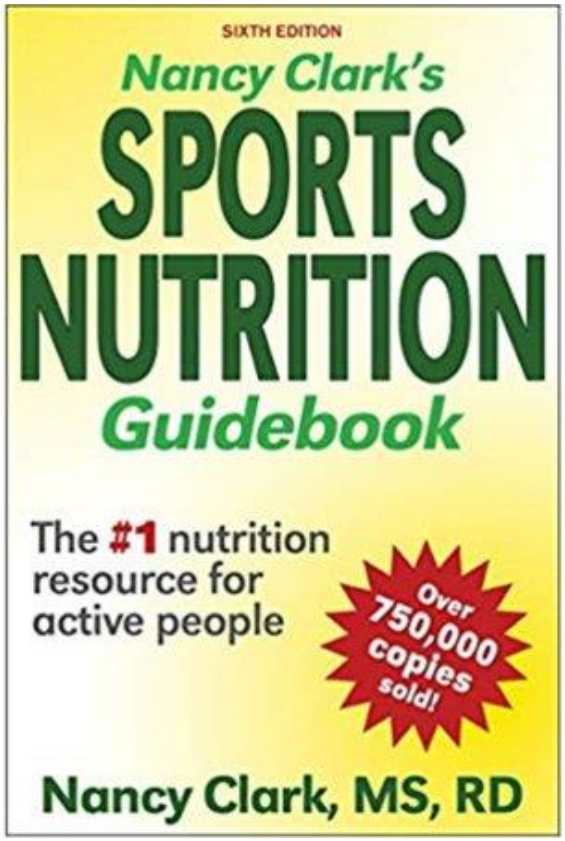


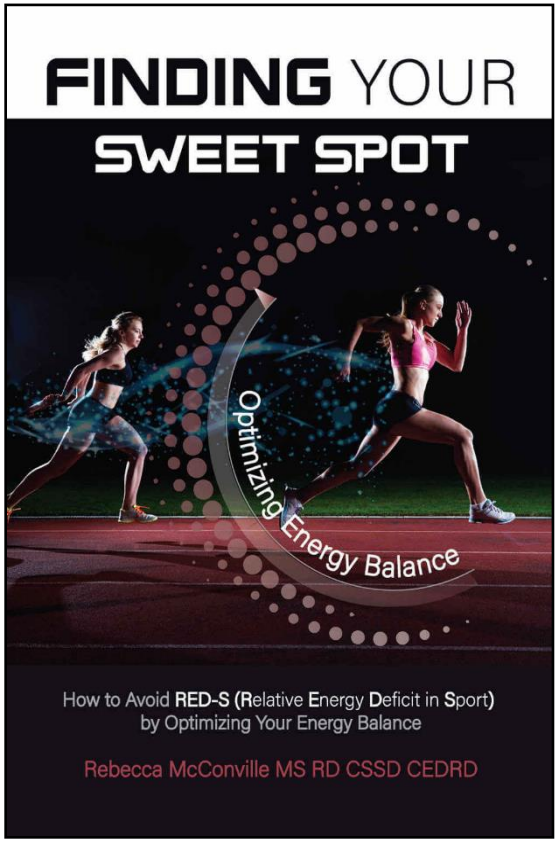
Sports Nutrition

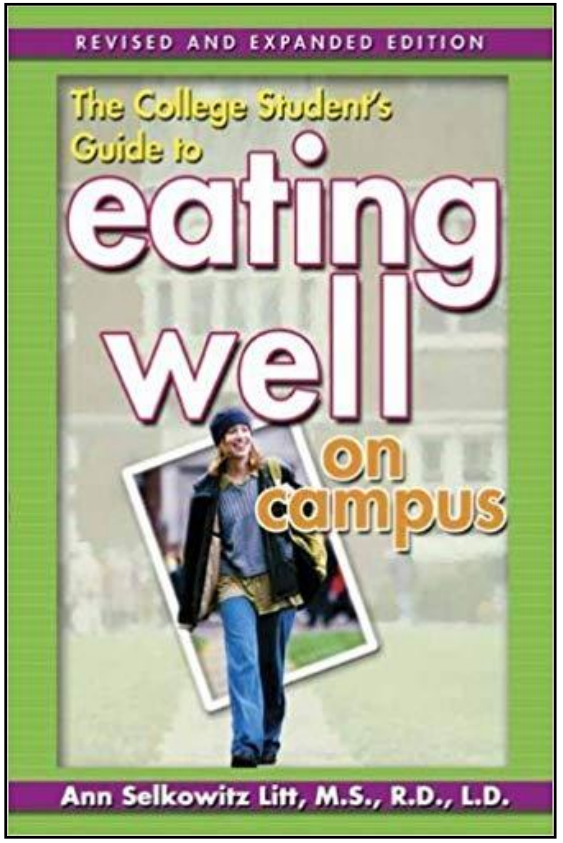


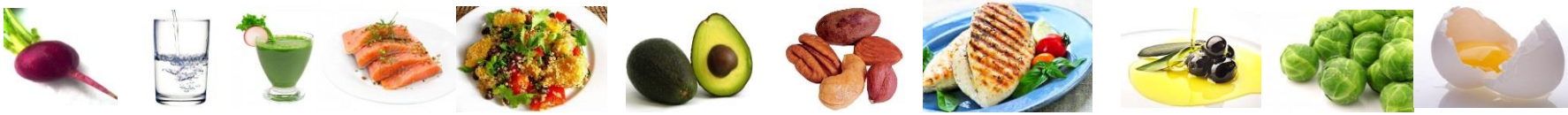


Recommend books authored by Registered Dietitians









PERFORMANCE NUTRITION

- **Prioritize Fueling for Performance**
  - Be a competent eater

- **Have a Game Plan**
  1. Hydration Plan
  2. Fueling Strategy
  3. Nutrient Timing

- **Be Smart about Supplementation – Food First!**











Be a Competent Eater

- Feel good about fueling your body
- Be reliable about feeding yourself
- Know that all foods can fit into your fueling plan
- Choose foods that you enjoy and that taste good
- Respond to your body's signals: hungry & full
  - Eat as much as you are hungry for
  - Know when you've had enough & are satisfied

Blog post @ Walden Behavioral Care

walden behavioral care

Who We Serve What We Treat Treatment

Blog Categories

- All Blog Posts
- Seeking Help Blog Posts
- Recovery Blog Posts
- Parents / Family Blog Posts
- Prevention Blog Posts
- Providers Blog Posts

Raising Competent Eaters: What Parents Can Do

"Your mom is a nutritionist? Like, are you ever allowed to have ice cream?" Those questions permeated my kids' life experiences from an early age.

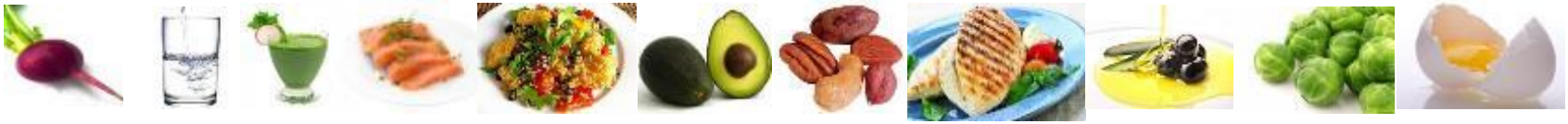
Those who know me and who know my family know the reality. Yes, I am a nutrition professional. And yes, we eat ice cream. Not only do we eat it, we enjoy it! Never is my freezer without a few flavors to choose from. My kids were raised knowing it's okay to enjoy ice cream.

I've raised three athletes. They are strong, healthy, happy and accomplished. Each has achieved tremendous milestones in life and in sport. My oldest daughter was a standout goalie in soccer and ice hockey, earning herself a scholarship to play Division 1 soccer in college. She loves ice cream. In fact, I believe it was the topic of her college essay. My other daughter is a competitive figure skater. She's competed on a national level since middle school and now skates on two collegiate teams. Her nut allergy means she has to avoid several flavors, but she's a huge fan of mint chocolate chip ice cream. My son is a three-sport athlete in his first year of high school. This summer, we will travel to Italy as a family and are already dreaming about the food scene, especially the gelato.

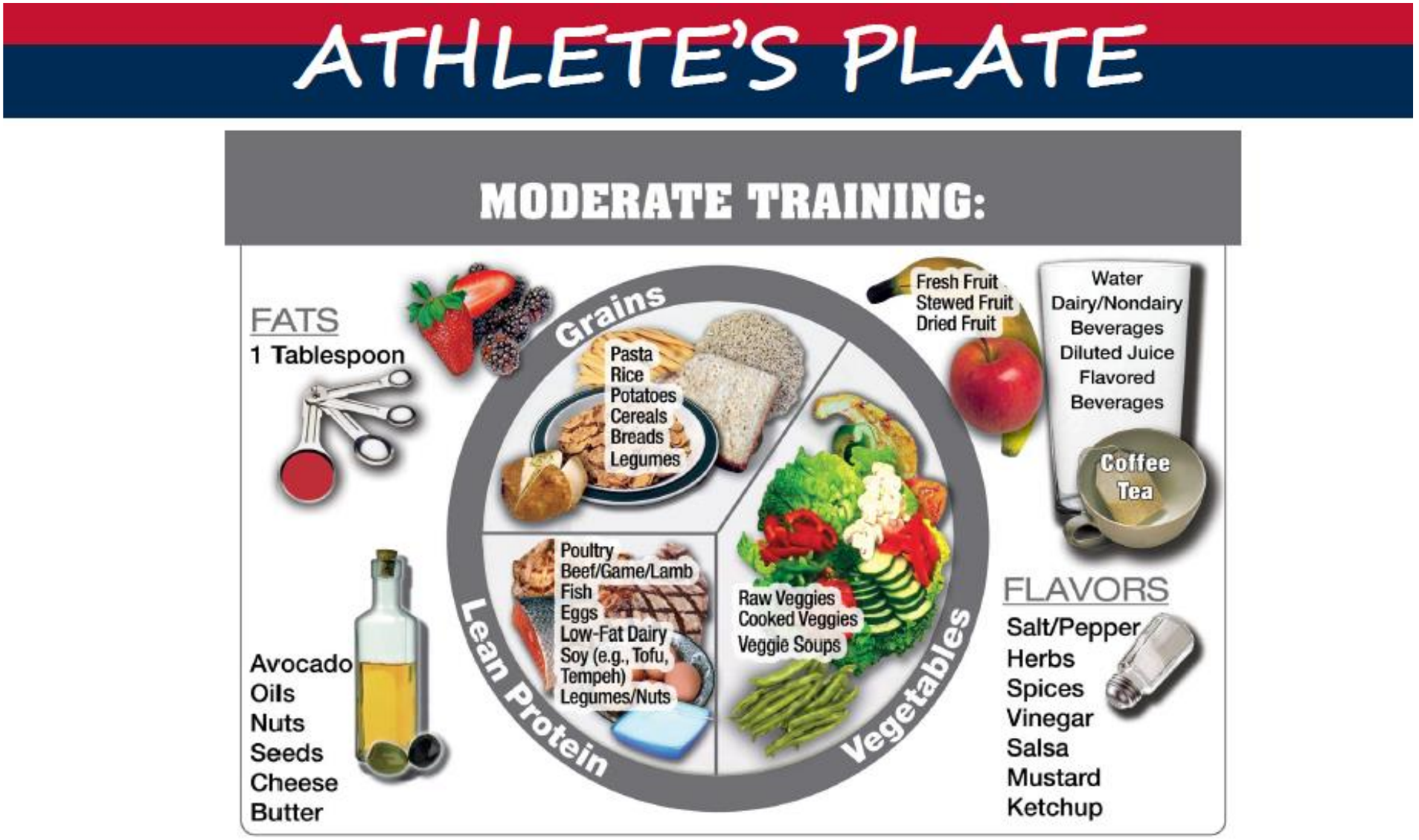
Paula Quatromoni, 2018

FUELING STRATEGY

3-step Meal Building		Every Day Choices	Once in a While
1 Fruits, Veggies, Healthy Fats	PROTECT Boost immunity, Decrease inflammation, Enhance recovery	Fruits, vegetables, nuts, seeds, peanut butter, almond butter, olive oil, canola oil, oil based dressings, hummus, guacamole	Fried veggies, Cream based items- Ranch, alfredo, sour cream
2 Carbs	FUEL The body's primary energy source	100% Whole grain breads & pastas, brown rice, whole grain cereals, oatmeal, lentils, potatoes, sweet potatoes, peas, corn, beans, quinoa	Cookies, candy donuts, pastry muffins, cake, sugary cereals, sugary drinks
3 Lean Proteins	BUILD Muscle growth & repair	Chicken, turkey, lean beef, pork or veal, fish, tofu, yogurt, Greek yogurt, cheese, cottage cheese, eggs, milk	Fried foods, bacon, sausage salami, bologna



Your Baseline Fueling Plan



The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

For educational use only. Print and use front and back as 1 handout.

Fueling for Training & Game Days

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Fueling Light Workouts & Rest Days

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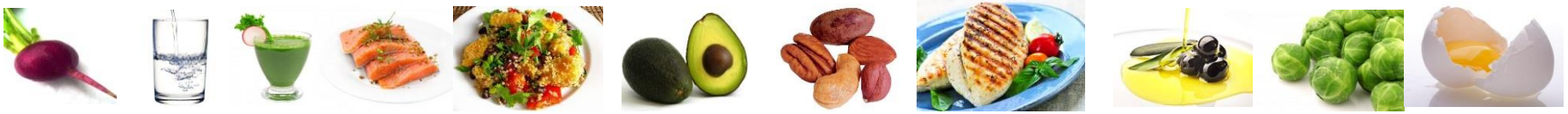
NUTRIENT TIMING

Don't skip!

Meals & Snacks – fuel up strategically, every 3-4 hours

Hydrate – all day, every day

Recovery Nutrition – within 30 min.



NUTRIENT TIMING

"BOOK END" your practices, work-outs & games

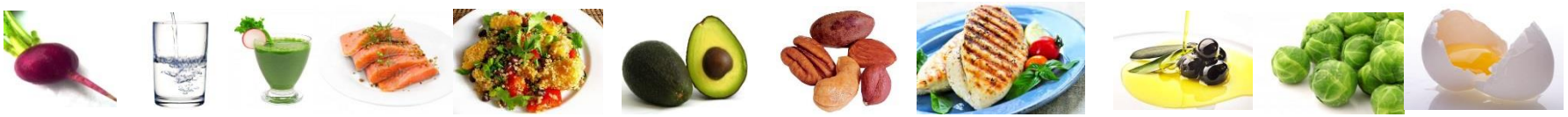
Before exercise snacks will increase energy:

Trail mix – nuts, cereal nuggets, & dried fruit
Peanut butter and jelly sandwich
String cheese and pretzels
Bar - Clif, Lara, RX bar, Kashi

Easy to digest

After exercise snacks aid muscle recovery:

Chocolate milk or a Recovery smoothie - Milk, yogurt, banana, mixed fruit
Yogurt, granola & berries
Turkey or roast beef sandwich & raw veggies



Building a Performance Plate

YOUR PLATE = Lean **Protein** + High-Quality **Carbohydrate** + Colorful **Vegetables**

3-STEP Guide

1. Picky with your PROTEINS

*Lean protein options help **Build + Repair** your muscle

- Chicken, Turkey, Lean Beef
- Eggs
- Greek yogurt, Milk, Cottage Cheese, String Cheese
- Salmon, Tuna, Shrimp, etc.
- Nuts & Seeds
- Beans, Lentils, Tofu

Step 1 | Step 2 | Step 3

2. Choose Smart CARBS

- Oatmeal
- Potatoes/ Sweet Potatoes
- Brown Rice
- Corn, Peas, Beans, Lentils
- Whole grain breads/cereals/pasta
- Tortillas
- Fruit

*Carbohydrates are the body's primary source of **Fuel & Energy**

3. Vary your VEGGIES

*Vegetables are packed with vital **Vitamins + Minerals & Antioxidants**, necessary for immunity and recovery

- Broccoli, Cauliflower
- Red, green, yellow peppers
- Beets
- Carrots
- Spinach, Argula
- Zucchini, Squash
- Tomatoes
- Cucumbers, Asparagus
- Avocado

Quick + Easy Meal Options

Burrito Bowl
- Brown Rice *or* Quinoa
- Pico de gallo
- Peppers & Onions
- Guacamole
- Black or Pinto Beans
- Chicken *or* Beef

Sandwich
- Whole-grain Bread / Roll
- Turkey
- Spinach + Tomato + Pickles + Peppers
- Avocado
- Mustard

Pasta
- Whole-grain Pasta
- Lean Ground Beef
- Peppers + Onions + Mushrooms
- Marinara Sauce

Stir-Fry
- Brown Rice *or* Quinoa
- Chicken *or* Shrimp
- Carrots + Snap Peas + Broccoli + Scallions + Peppers
- Teriyaki Sauce

NUTRITION for PERFORMANCE

PRE-EVENT FUELING

Athlete's Plate, Every Meal

Focus on carbs, lean protein, vegetables, and fruit! For competition, increase carb intake 1-2 days out (~50% of plate).

Hydration is Key

Carry your water bottle with you! Hydrate to prevent fatigue & dizziness. Check your urine: it should be clear to pale yellow in color!

Snack Smart

Plan ahead. Opt for energy boosting snacks such as fruit, trail mix, smoothies, yogurt, and cereal!

DAY OF COMPETITION

It's Go Time!

Consume 30-60 g of carb per hour of activity through sports drinks and/or food.

ex) sports drink, fruit, gels, and/or chews

30-60 minutes

Focus on easily digestible carb for optimal fueling! Sips of water & sports drink for hydration, electrolytes, and carbs!

ex) applesauce, sports drink, fruit, or pretzels

< 2 hours before

Decrease the size of meals/snacks, and shift towards mostly carbs with minimal protein & fat. Stick with foods you know!

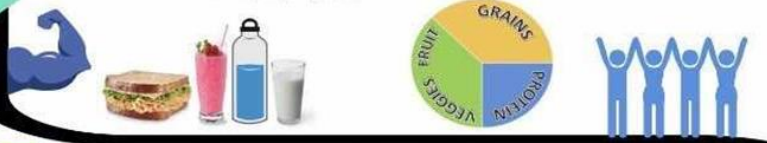
ex) PB&J sandwich, granola bar, fruit, sports drink

3-4 hours out

Consume a meal that is high carb, moderate protein, and low fat & fiber!

ex) oatmeal, banana, eggs, sports drink

Sandwich with lean meat (turkey, tuna, ham), fruit



POST COMPETITION

Rehydrate, Repair, Replenish!

+ 20-24 oz fluid for every lb lost
+ 20-30 g protein within 1 hour & with each meal after (every 3-5 h)
+ 0.5 g carb per lb of body weight within 1 hour

ex) 16 oz high protein milk, 8 oz greek yogurt-based fruit smoothie, or whole grain turkey sandwich

Athlete's Plate

Replenish your glycogen stores and rebuild muscle with a balanced meal.

ex) pasta, chicken, fruit & vegetables

Eggs, toast, fruit

Team effort!

Be accountable to yourself and your teammates. Will you do what it takes to set yourselves up for performance?

Created by Kylie McKenzie MS, University of Houston, Dietetic Intern | Edited by Brett Singer MS, RD, CSSD, LD - @BSinger10

BREAKFAST HIGH FIVE

1. **Start each morning with breakfast**
2. **Include a Whole Grain**
3. **Include Fruits or Veggies**
4. **Include Protein or Dairy**
5. **Include a nutritious Fat, like peanut butter, nuts or avocado**

Calories are very personal…

- Sex, age, height, weight, goals…
- Amount, duration, intensity & type of training, exercise or activity
- Differ by sport, position, & in-season

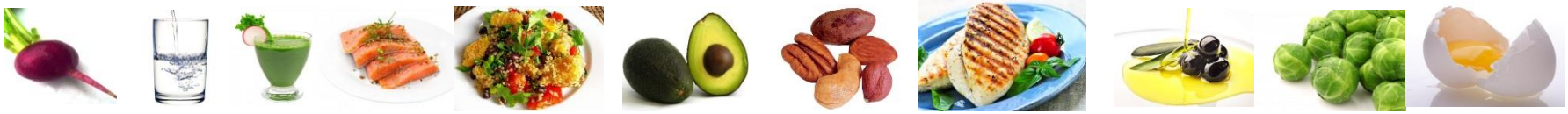
Don't Compare!!

Supplement Smarts: More is NOT Better

Food First!

- Vitamins
- Minerals
- Fish Oil
- Protein powder
- Creatine
- Probiotic

NSF SPORT



Supplements, Energy Drinks & Caffeine

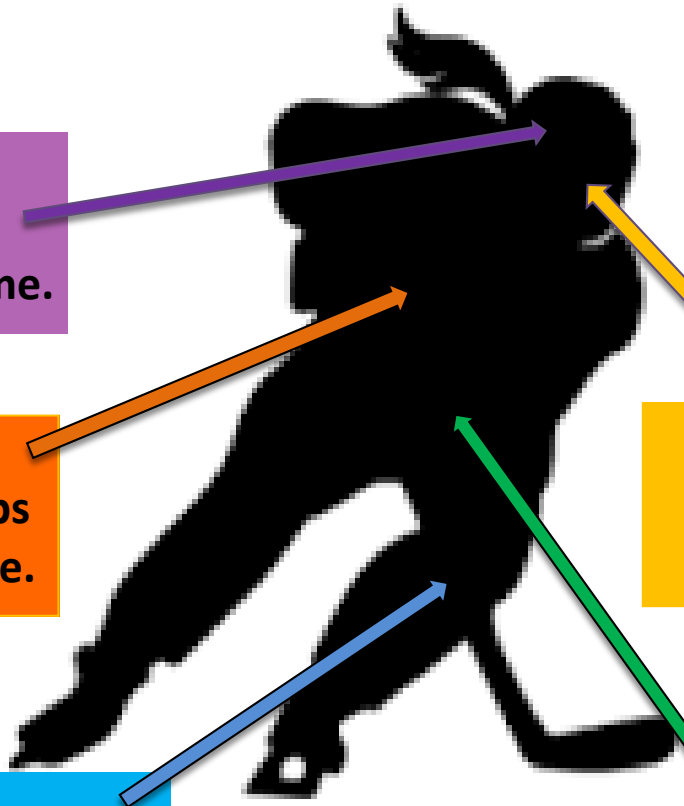
Food First!

There are no short-cuts to good nutrition

Supplement industry is unregulated & risky…

Most have GI and other side effects

HYDRATION



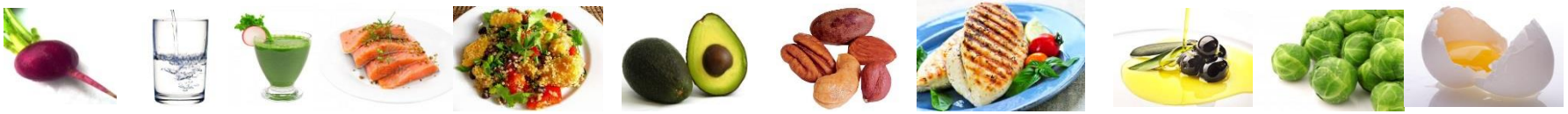
BRAIN
Hydration improves concentration & reaction time.

TEMPERATURE
Hydrating with water helps regulate body temperature.

SKIN
Water improves the quality of your skin.

MUSCLE & JOINTS
Hydration reduces risk of muscle injury because roughly 70% of muscle is made up of water.

DIGESTIVE TRACT
Water aids digestion & maximizes vitamin and mineral absorption.



Dehydration hurts

- Strength
- Stamina
- Mental clarity

A FACT SHEET FOR STUDENT-ATHLETES

ASSESS YOUR HYDRATION STATUS

Step 1: Match the color of your urine to a color on the chart.

Step 2: Determine your level of hydration to dehydration. The lower the number, the better the result.

Step 3: If your urine color matches:

- Nos. 1, 2 or 3, you are hydrated.
- Nos. 4, 5 or 6, you are mildly to moderately dehydrated.
- No. 7 or darker, you are dehydrated.
- Athletes should consume water throughout the day. Do not wait until you are thirsty.
- To avoid dehydration, consume water and/or sports drinks before, during and after workouts or exercise. Be cautious of "energy drinks."
- In general, 20 ounces of fluid should be replaced for every pound lost during that exercise session.
- Certain foods, medicines and vitamins may cause the color of urine to change. If these have been consumed in large amounts, this chart may be unreliable. Report all medicines, vitamins and supplements to your sports medicine staff.
- Report any symptoms of heat illness or general medical illness to your sports medicine staff as soon as possible.

Hydration Habits

Know the Signs of Dehydration:

- Headache
- Lightheadedness
- Difficulty paying attention
- Irritability
- Nausea
- **Muscle cramping**
- Weakness
- Fatigue
- Decreased performance

TIME OF DAY	FLUID INTAKE
6:30 AM (wake up)	Drink 8 ounces of water
8:30 a.m. (or between classes)	4 ounces
10:30 a.m. (or between classes)	4 ounces
Noon (with lunch)	4 ounces
1:30 p.m. (or between classes)	4 ounces
2:30 p.m. (after school)	8 ounces
3:30 p.m. (or before practice)	8 ounces
During practice	Drink breaks—about 4-12 ounces every 15 minutes
After practice	Drink 8-16 ounces of fluid
7:30 p.m.	8 ounces of fluid
9:30 p.m.	8 ounces of fluid
Tip: 4 big gulps from the drinking fountain is about 4 ounces of fluid	

Heather Mangieri, RDN, CSSD

HYDRATION PLAN

3-4 liters per day **PLUS** at least 1L more per practice

Electrolytes matter too…

Use **sports drinks** when

- duration ≥ 60 min
- in high heat & humidity
- with two-a-days or high intensity
- if you have heavy sweat loss

Have **e-rich snacks** on hand

- nuts
- trail mix
- pretzels
- fresh or dried fruit
- cheese sticks

Social Media Literacy

- Who are your athletes following?
- Are they influencers or experts/professionals?
- Do they know the difference?
- How is social media influencing their relationship with
  - their body
  - food
  - exercise
- How is social media changing their values & beliefs?
- How is it changing their thoughts & behaviors?

Cleanse Social Media and Follow Sports Nutrition Experts Online

@LonghornFuel

UT Sports Nutrition

@FuelupNU

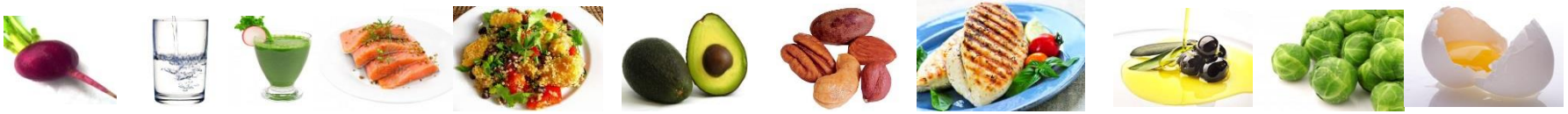
NU Perform Nutrition

@UVASportsRD

UVA Sports Nutrition

@terrier_fuel

BU Sports Nutrition



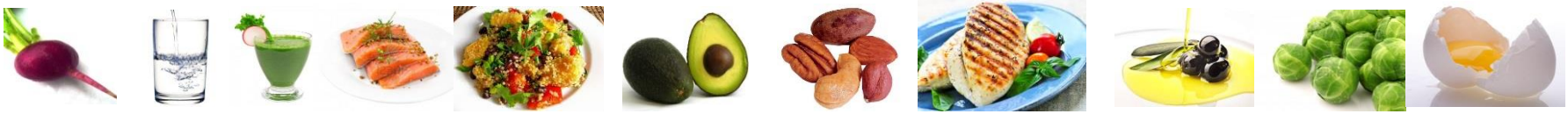
Performance Nutrition Resources

teamusa.org/nutrition

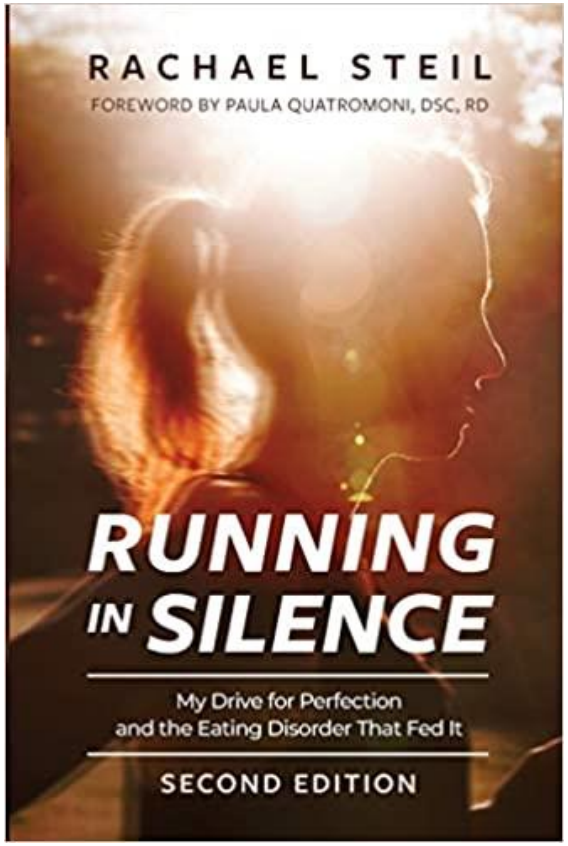
sportsrd.org/downloadable-resources

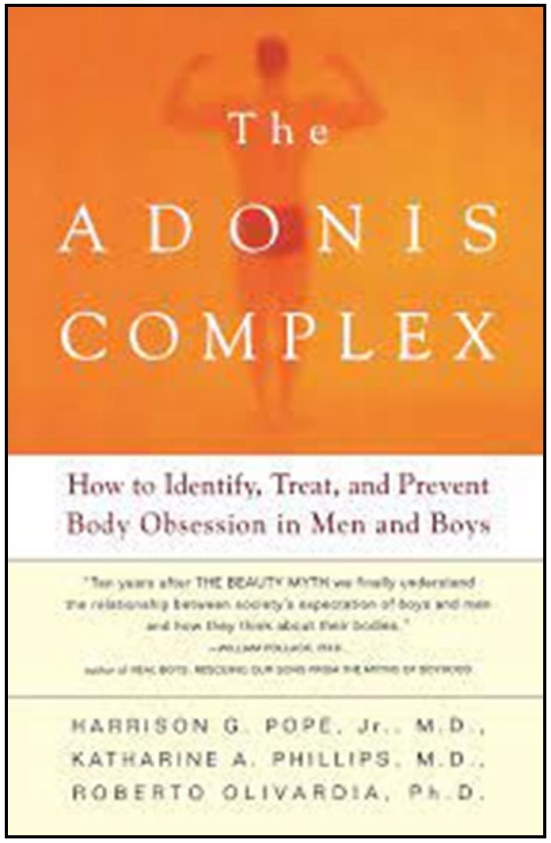
ncaa.org/sport-science-institute/nutrition-sleep-and-performance

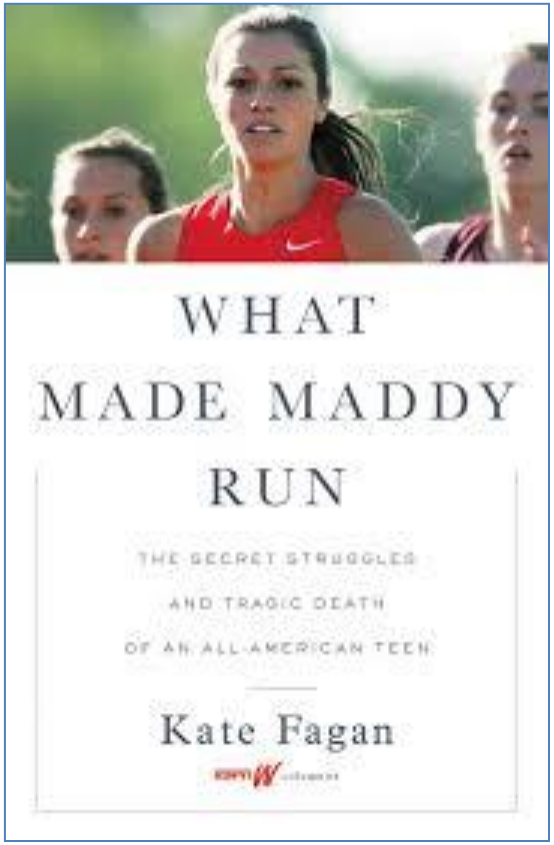
eatright.org/fitness/sports-and-performance/tips-for-athletes

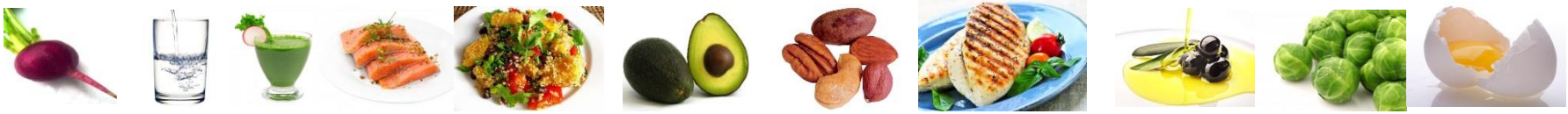


Understand Student-Athlete Mental Health









Athlete Screening Tools

Who and When to Screen

- Anyone in the high-risk age, sexual/gender minority, athlete, or racial groups
- Anyone with trauma or major life transitions/stress
- Anyone with observed ED behavioral symptoms

- On annual check-ups or pre-participation for sport
- When red flags appear
- Don't wait for significant weight loss to occur
- Don't wait for emaciated appearance
- Don't wait until they seem "sick enough"

Universal Precautions

- Assume that each and every athlete on your team potentially has some disordered eating thoughts or behaviors and/or is at risk for an eating disorder

- Screen and Assess all athletes similarly
- Don't make assumptions
- Don't let stereotypes guide action or inaction…

Recommended Screening Tools

Pre-Participation Exam (PPE) questions

Any YES should be followed up to determine need for referral

1. Do you worry about your weight?
2. Are you trying to or has anyone recommended that you gain or lose weight?
3. Are you on a special diet or do you avoid certain types of food?
4. Have you ever had an eating disorder?
5. Have you ever taken any supplements to help you gain or lose weight or improve your performance?

Bernhardt & Roberts, 2010
Am Acad Family Physicians & Am Acad Pediatrics

SCOFF Screening Tool

Used to be on the NCAA website identified as an ED screening tool

Any YES should be followed up to determine need for referral

- Do you make yourself sick because you feel uncomfortably full?
- Do you worry that you have lost control over how much you eat?
- Have you recently lost more than 15 pounds in a three-month period?
- Do you believe yourself to be fat when others say you are thin?
- Would you say food dominates your life?

Hill et al. SCOFF, the development of an eating disorder screening questionnaire. Int J Eat Disord. 2010

DESA-6

Kennedy, J Eat Disord, 2021

6-item brief tool; screens for disordered eating

Validated in adolescent M&F athletes

92% sensitivity & 86% specificity

Admin. by ATs, RDs, counselors…

DESA-6 Questions
Please circle the answer choice that fits best.

1. Have you had 3 or more injuries in the past season OR did your past season end early due to injury?
   a. Yes
   b. No

2. Do you worry about gaining weight during the off season or when you can't train due to injury?
   a. I worry about gaining weight a few times per week
   b. I worry about gaining weight daily
   c. I worry about gaining weight constantly
   d. I do not worry about gaining weight.

3. Are you happy with your current weight?
   a. Yes
   b. No

4. How many pounds do you think you need to lose to be at your best performance weight?
   a. 1 to 5 pounds
   b. 5 to 10 pounds
   c. 10 to 15 pounds
   d. 15+ pounds
   e. None

5. Do you follow a specific diet plan (low fat, low carbohydrate, low fat, low sugar, high protein, etc.) to achieve your best performance weight?
   a. Yes
   b. No

6. Have you ever been told you should lose weight by someone who is not a health professional, such as a coach, fellow athlete or family member?
   a. Yes
   b. No

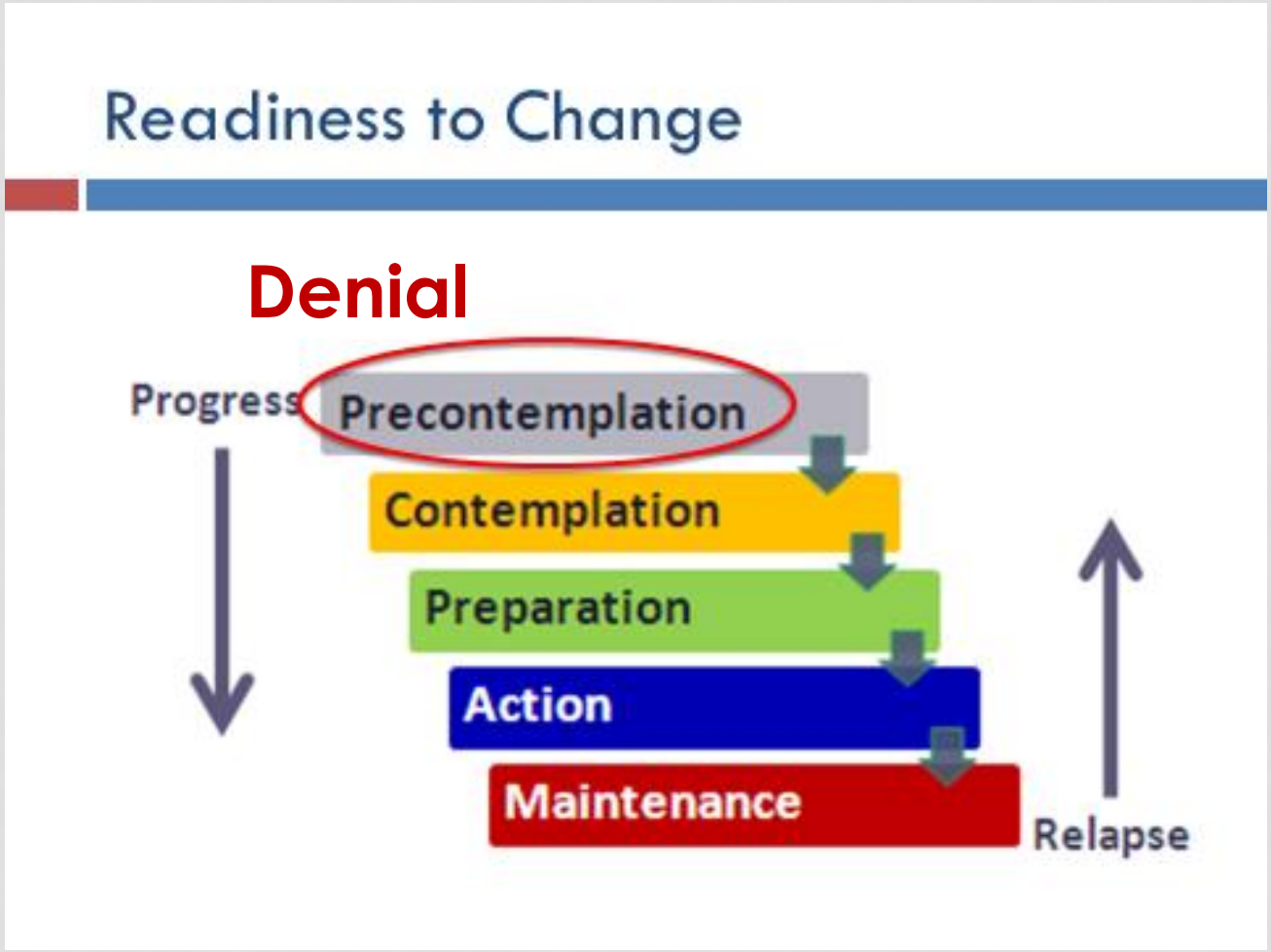
Help athletes walk through the door

- Parents
- Pediatrician or School Nurse
- Counselor/Therapist
- Registered Dietitian (RD)
- Athletic Trainer or Coach
- A teammate or a friend
- Anyone they can have an honest and trusted conversation with

Expressing Care & Concern

- Talk in private and under calm circumstances
- Express your concern without judgement
- Stick to the facts of what you observe
- Expect anger, resistance and denial of any problem
- Listen, be supportive, and role model healthy habits
- Encourage the athlete to accept help
- Seek support and education for yourself

Readiness to Change



Barriers to Help-Seeking for EDs in Sport

- Low awareness that behaviors are a *"problem"*
- Culture of sport accepts, endorses, praises and sometimes demands disordered behavior
- So secretive, you think you're the only one, or that you're *"broken"*
- Poor understanding of what an eating disorder is or who is affected
- Stereotypes – *"Athletes don't get eating disorders"*
- Stigma – *"It's a woman's disease"*
- Perception problem – *"I'm not THAT sick!"*

- Fears tied to identity, masculinity, playing time, scholarships, or sport being taken away
- Limited/No access to counselors or RDs inside athletics – Who to turn to? Who to trust?

Eating Concerns Team @ School

- Athletic Trainer
- School Nurse
- School Counselor

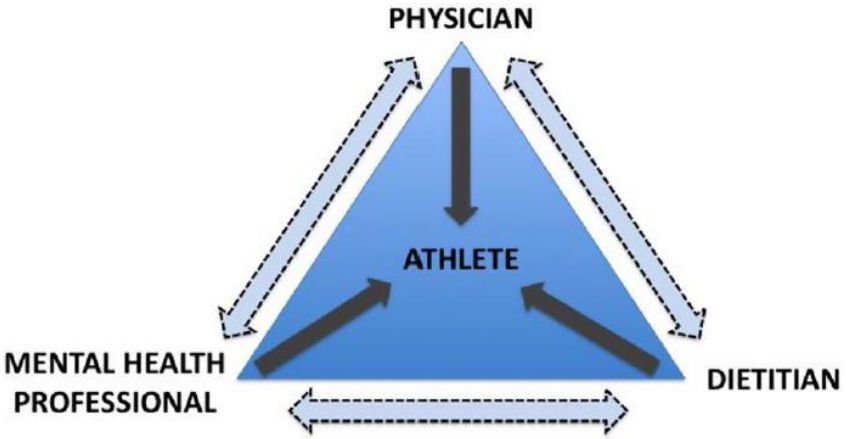
Quatromoni, JADA 2008

With collaboration from

- Coaches
- Strength & Conditioning Coaches

Multidisciplinary Treatment Team

- Pediatrician
- Registered Dietitian
- Therapist
- Psychiatrist
- Exercise Science professional
- Certified ED Specialist, CEDS, **CEDRD**
- Providers with sports training most effective
- Athlete-specific treatment programs are few
- Adolescent treatment involves Family Based Therapy



RED-S Clinical Assessment Tool

Removal vs. Return to Play decisions

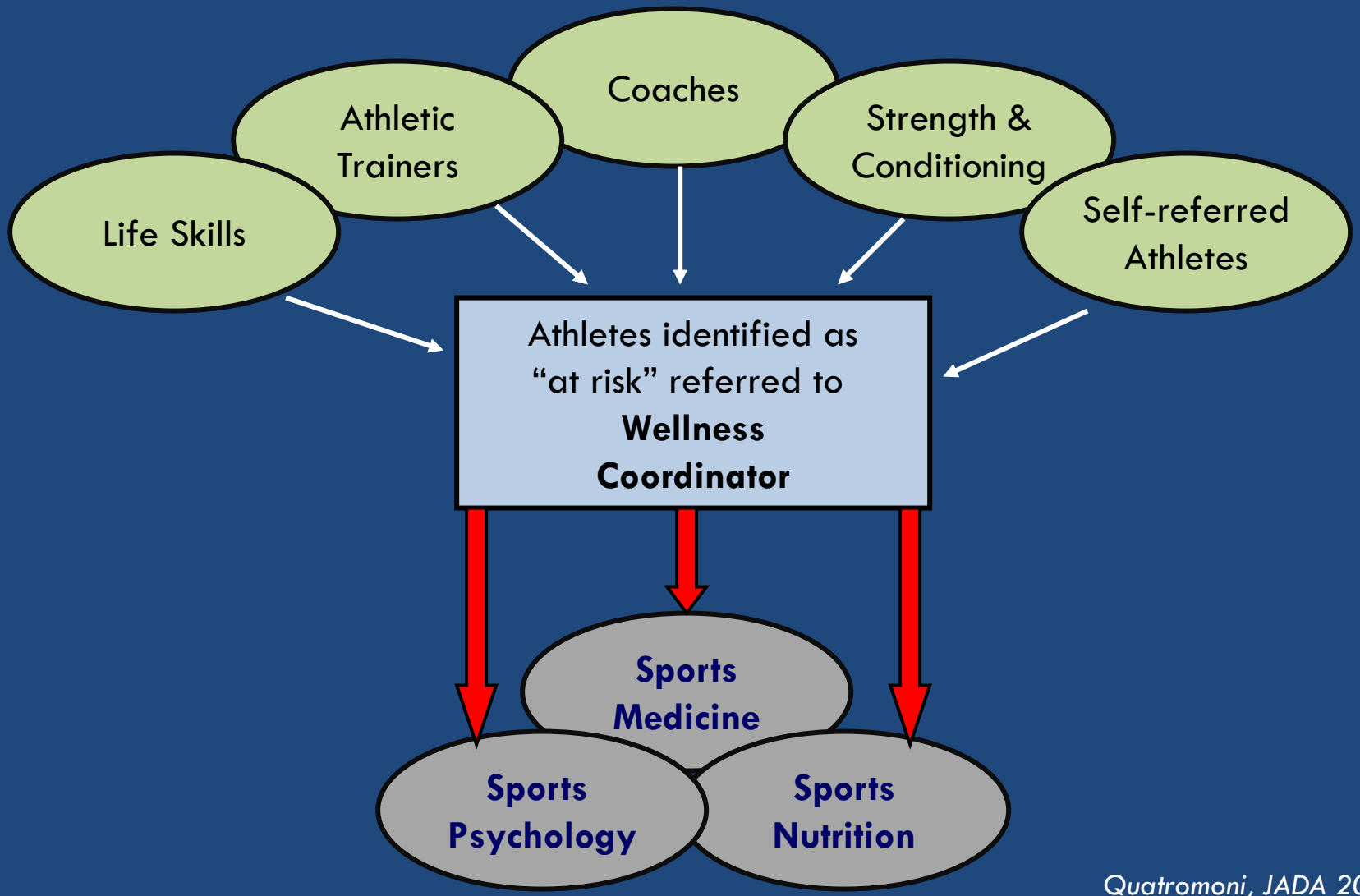
- Made by the multidisciplinary care team
- Requires data and some clinical decision-making
- Return requires treatment compliance
- Requires ongoing assessment as status changes

Table 3 The Relative Energy Deficiency in Sport Return-to-Play Model (modified from Skårderud *et al*, 2012)[140]

High risk red light	Moderate risk yellow light	Low risk: green light
▶ No competition ▶ Supervised training allowed when medically cleared for adapted training ▶ Use of written contract (see supplementary appendix 1)	▶ May compete once medically cleared under supervision ▶ May train as long as is following the treatment plan	▶ Full sport participation

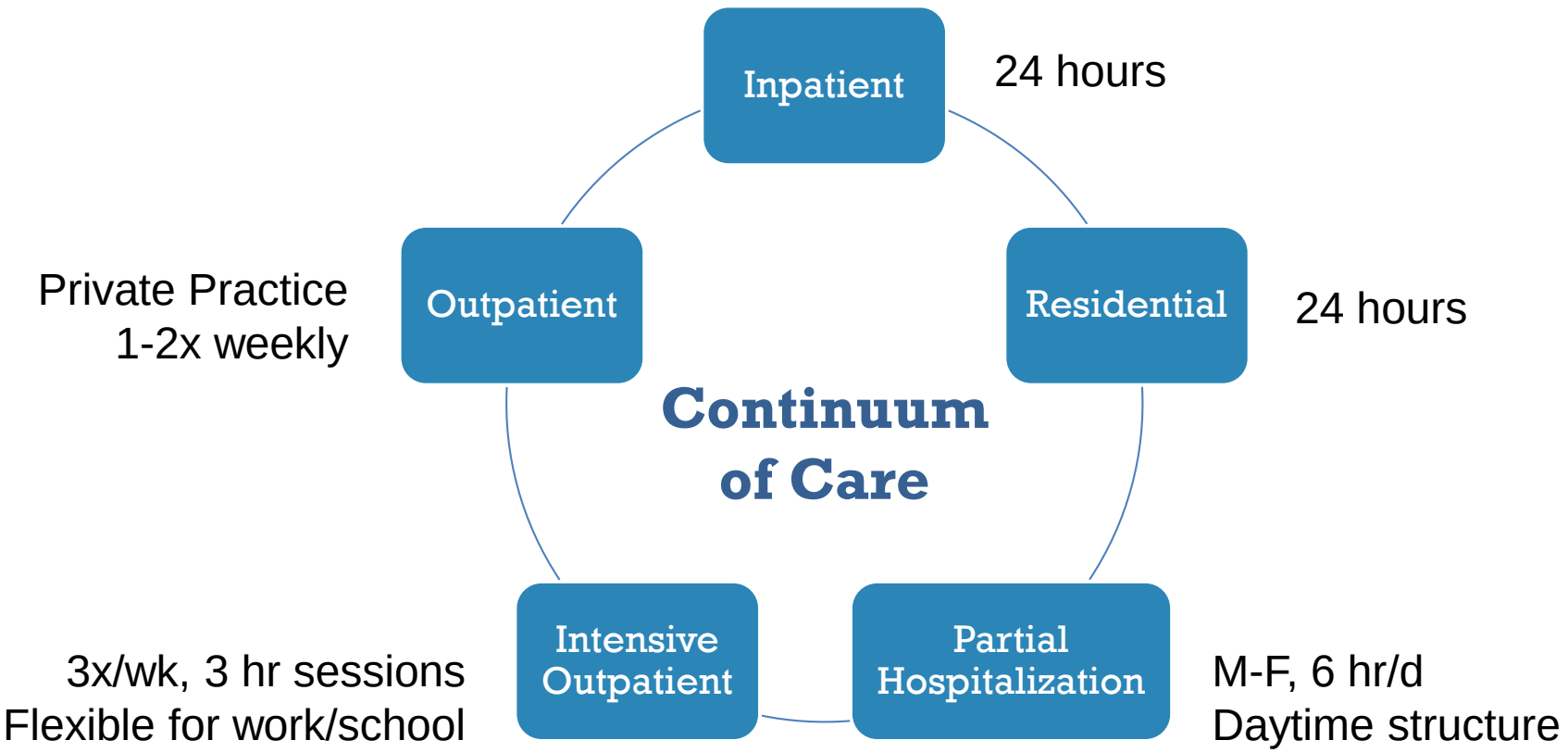
Mountjoy M, *et al*. *Br J Sports Med* 2014;**48**:491–497.

Boston University's Multidisciplinary Sports Wellness Team



Quatromoni, JADA 2008

The Continuum of Care for ED Treatment



walden
behavioral care

WALDEN GOALS PROGRAM

Most common presentation is OSFED
Most have never had treatment before GOALS

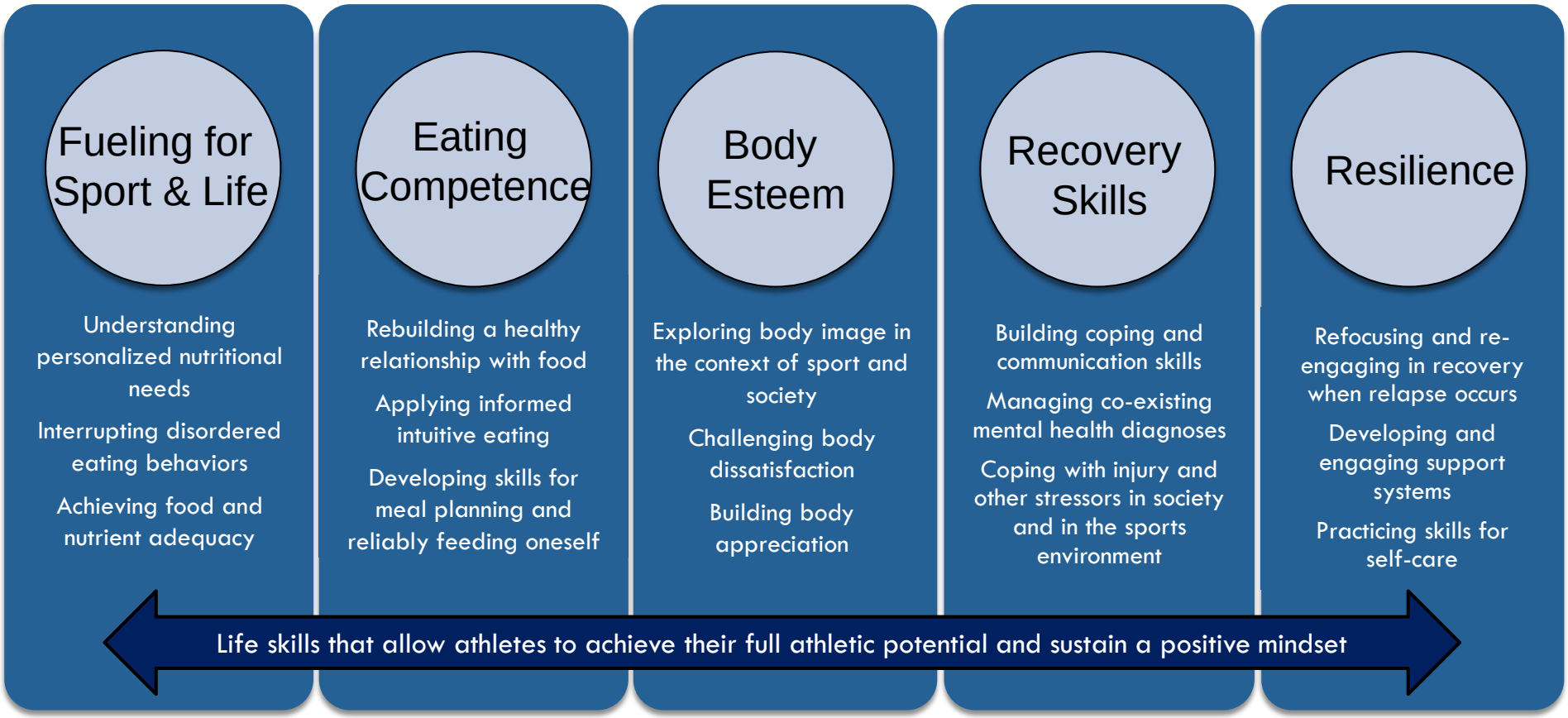
Stranberg & Quatromoni, J Academy Nutrition & Dietetics 2020

Recent Admission to GOALS IOP

- 19 y.o. SWF sophomore collegiate track athlete
- Vegetarian
- AN diagnosed in 7th grade
- Presents with restriction, body dysmorphia, compulsive exercise, depression, ?OCD, IBS, amenorrhea, and high stress
- Trains 2 hrs/day, 5 days/week with her team, plus more on own
- Dad with OCD
- Mom with history of bulimia
- Traumatic divorce
- Lives alone in a single dorm room on campus
- First time seeking ED treatment

Athlete-specific Treatment

Walden GOALS Program



Stranberg & Quatromoni
J Academy Nutrition & Dietetics 2020

Level of Care is determined by

- Medical instability
- Nutritional status
- Psychiatric needs
- Level of supervision required

- Availability of specialized ED treatment programs in the geographic area
- Insurance coverage and available finances

Role of the RD in Collaborative ED Care

- Full nutritional assessment
- Attunes to growth & development needs
- Customized fueling plan
- Sports nutrition education
- Counseling for behavior change
- Ongoing monitoring & evaluation

Find a Registered Dietitian eatright.org

eat right® Academy of Nutrition and Dietetics

Find an Expert >

Find a Registered Dietitian Nutritionist

The Academy of Nutrition and Dietetics' Find a Registered Dietitian Nutritionist online referral service allows you to search a national database of Academy members for the exclusive purpose of finding a qualified registered dietitian nutritionist or food and nutrition practitioner who is right for you (no solicitations, please).

Active category Academy members can enroll in the Find an RDN program by signing in and visiting the My Account tab, located in the My Academy Toolbar.

Search near you

Enter your ZIP Code

Search Now

Or Search by expertise

My take-home messages…

- Sh*t happens
- It happens everywhere and can happen to anyone
- We need to tackle shame, secrecy, misinformation, stereotypes, and stigma
- Early action makes a difference
- Your actions may be life-saving and life-changing
- It takes a village
- Don't forget the RD!
- We're all in this together

Additional Resources

NEDA

Feeding hope.

National Eating Disorders Association

NATIONAL HELPLINE | **(800) 931-2237**

www.nationaleatingdisorders.org

NEDA
Feeding hope.
National Eating Disorders Association

Coaches & Trainers TOOLKIT

Available at:
www.nationaleatingdisorders.org

AN Warning Signs

- Restricts food intake
- Is “dieting,” may go vegan, keto, or gluten-free…
- Obsessed with food, counts calories, avoids fat, carbs…
- Pre-occupied by thoughts of food and weight
- Complains about body size or specific body parts
- May be exercising obsessively or overtraining
- May be using laxatives; may be binge eating & purging
- Negative self-talk

AN Warning Signs

- Compulsive food rituals, values or beliefs
- Rigid eating routines, rules, and aversions
- Fearful of eating in public
- Socially withdrawn, avoids conflict or new situations
- Feels cold even when temperature is normal
- Presence of lanugo (pelt-like hair to warm the body)
- Wears layered or baggy clothing
- Irritable, anxious, may be depressed

- Thinning or loss of hair, pale appearance
- Dizziness and headaches, fatigue, low energy
- Low blood pressure, low heart rate

BN Warning Signs

- Fluctuating weight; cycles of weight loss and gain
- Secretive eating: hidden foods, hidden food wrappers, restrictive eating in public
- Frequent trips to the bathroom
- Evidence of purging behavior
- Physical signs: scarred knuckles, puffy cheeks, blood shot eyes, dehydrated, exhausted, unfocused
- Overly focused on body & appearance as = self-worth
- Irritable, anxious, may be depressed
- Dizziness and headaches, fatigue, low energy

Available at:

www.hynesrecovery.com/assets/athletesed102518-final.pdf

Pages 6-13, authored by Dr. Q

Eating Disorder Policy and Recommended Protocols

Eating Disorders in Collegiate Sport: Unique Risks, Policies and Procedures

Athletes at Risk for Eating Disorders

While athletes have increased nutritional needs to support growth, development, training, competition, and post-work-out recovery nutrition, most athletes do not have ready access to nutrition professionals inside their athletics department. Nutrition knowledge is often low for the college-age population and misinformation abounds in the sport environment. As such, athletes are at increased risk for disordered eating and eating disorders (ED). Like in the general public, athletes are susceptible to a variety of predisposing factors: interpersonal characteristics that determine communication and coping skills, psycho-social stress, low self-esteem or poor body image, cultural factors, beliefs, attitudes, and societal pressures including the glorification of the thin ideal and potent pressures to diet. Pre-existing mental health conditions such as anxiety, depression and obsessive-compulsive disorder increase risk, as does trauma. Environmental influences in the home or on campus can contribute to ED risk, and

RED-S Clinical Assessment Tool

Table 1 Relative Energy Deficiency in Sport risk assessment model for sport participation (modified from Skårderud *et al*)[140]

High risk: no start red light	Moderate risk: caution yellow light	Low risk: green light
▶ Anorexia nervosa and other serious eating disorders ▶ Other serious medical (psychological and physiological) conditions related to low energy availability ▶ Extreme weight loss techniques leading to dehydration induced haemodynamic instability and other life-threatening conditions	▶ Prolonged abnormally low % body fat measured by DXA or anthropometry using The International Society for the Advancement of Kinanthropometry ISAK[141] or non-ISAK approaches[142] ▶ Substantial weight loss (5–10% body mass in 1 month) ▶ Attenuation of expected growth and development in adolescent athlete	▶ Healthy eating habits with appropriate energy availability
	▶ Abnormal menstrual cycle: FHA amenorrhoea >6 months ▶ Menarche >16 years ▶ Abnormal hormonal profile in men	▶ Normal hormonal and metabolic function
	▶ Reduced BMD (either from last measurement or Z-score < −1 SD). ▶ History of 1 or more stress fractures associated with hormonal/menstrual dysfunction and/or low EA	▶ Healthy BMD as expected for sport, age and ethnicity ▶ Healthy musculoskeletal system
	▶ Athletes with physical/psychological complications related to low EA/ disordered eating - ECG abnormalities- Laboratory abnormalities	
	▶ Prolonged relative energy deficiency ▶ Disordered eating behaviour negatively affecting other team members ▶ Lack of progress in treatment and/or non-compliance	

BMD, bone mineral density; DXA, dual-energy X-ray absorptiometry; EA, energy availability; FHA, functional hypothalamic amenorrhoea; ISAK, International Society for the Advancement of Kinanthropometry

Uses some objective data

Mountjoy M, *et al*. *Br J Sports Med* 2014;**48**:491–497.

LEA is difficult to measure and all pieces of data are not always available, making risk assessment difficult

RED-S 2016 Update

Joy et al, Br J Sports Med 2016

- Presenting signs & symptoms
- Diagnostic criteria
- Behavioral screening questions
- Assessment tools
- Multidisciplinary treatment plans
- Treatment contract
- Return to Play guidelines
- Prevention strategies

RED-S Screening Questions

Table 2 Eating behaviour questions[50]

Topic	Questions
Questions to start the conversation	▶ How have you been feeling in general? How do you feel about yourself? ▶ Do you mind if we talk about your eating habits?
Initial critical questions	▶ Are there foods or food groups that you avoid eating? How do you feel about dieting in general? ▶ How do you feel about your body size? ▶ In what ways does your weight affect the way you think about yourself? ▶ What percentage of your waking hours do you spend thinking about weight, food and body image?
Diet and dieting	▶ Do you worry that you have lost control of how much you eat? ▶ Are you happy with your eating behaviour? ▶ Do you eat in secret? ▶ What did you have for breakfast today/yesterday? Lunch? Dinner? Snacks? ▶ Do you count your calories? Watch fat grams? Avoid certain foods? ▶ Do you ever eat a lot in one sitting—enough that you feel sick afterward? ▶ Are you worried because sometimes you can't stop eating?
Vomiting/purging	▶ Do you make yourself throw-up because you feel uncomfortably full? ▶ Do you use diuretics, laxatives or diet pills?
Weight and self-perception	▶ When you look in the mirror, what do you see? ▶ What do you think you should weigh? What are you doing to reach or maintain that weight? ▶ Have you recently lost or gained a lot of weight in a short period of time? ▶ What was your lowest weight in the last year? Your highest weight?
Exercise and training	▶ Do you exercise above and beyond what is required for your sport? ▶ Do you feel anxious if you miss a workout?
Family and support	▶ Does your family have any history of obesity, eating disorders, depression, mental illness or substance abuse (parents or other family members)? ▶ Who are your primary sources of emotional support? How do they support you?
Health	▶ Female patients: When did you have your first period? Are your periods regular? When was your last period? ▶ Do you have constipation? Diarrhoea? ▶ Are you ever dizzy? Weak? Tired? Have you ever fainted? ▶ Do you get cold easily? ▶ Have you lost any hair? Grown new hair? Do you have dry skin? ▶ Do you ever feel bloated? Have abdominal pain? ▶ Do you have muscle cramps, bone pain?

Consider these questions for engaging patients and their family members in meaningful discussion that can help to identify the eating disorder. Reprinted with permission from *Intermountain Healthcare*.

Joy et al, Br J Sports Med 2016

Screening Questions for the Female Athlete Triad

Recommended questions:

1. Have you ever had a menstrual period?
2. How old were you when you had your first menstrual period?
3. When was your most recent menstrual period?
4. How many periods have you had in the past 12 months?
5. Are you presently taking any female hormones (oestrogen, progesterone, birth control pills)?
6. Do you worry about your weight?
7. Are you trying to or has anyone recommended that you gain or lose weight?
8. Are you on a special diet or do you avoid certain types of foods or food groups?
9. Have you ever had an eating disorder?
10. Have you ever had a stress fracture?
11. Have you ever been told you have low bone density (osteopenia or osteoporosis)?

These questions should be included as a part of the preparticipation physical examination (PPE).

Reprinted with permission from *BJSM*.

Joy, et al. Br J Sports Med 2016

BEDA-Q2

Martinsen et al, Med Sci Sports Exerc 2014

9-item self-reported screening tool

Validated in elite adolescent female athletes

Most suitable for use with high school age females

82% sensitivity and 85% specificity

Items

1
I feel extremely guilty after overeating (EDI-DT11)[a,c]
□always □usually □ often □ sometimes □ rarely □never
2
I am preoccupied with the desire to be thinner (EDI-DT32)[a,c]
□always □usually □ often □ sometimes □ rarely □never
3
I think that my stomach is too big (EDI-BD2)[a,c]
□always □usually □ often □ sometimes □ rarely □never
4
I feel satisfied with the shape of my body (EDI-BD19)[a,b]
□always □usually □ often □ sometimes □ rarely □never
5
My parents have expected excellence of me (EDI-P43)[c]
□always □usually □ often □ sometimes □ rarely □never
6
As a child, I tried very hard to avoid disappointing my parents and teachers (EDI-P29)[c]
□always □usually □ often □ sometimes □ rarely □never
7
Are you trying to lose weight now?
□ Yes □No
8
Have you tried to lose weight?
□ Yes □No
9
If yes, how many times have you tried to lose weight?
□ 1–2 □ 3–5 □ >5 times
Dieting (trying to lose weight now and/or tried before ≥3 times)

Compulsive Exercise Test

Meyer et al, J Eat Disord 2016

24-item self-reported tool

Assesses cognitive, behavioral & emotional features of compulsive exercise

Produces a global score and 5 subscale scores

Exercise may be less likely underreported by athletes than ED symptoms, so this is useful to assess as an important ED precursor

Avoidance and rule-driven behaviour

- CET9 If I cannot exercise I feel low or depressed.
- CET 10 I feel extremely guilty if I miss an exercise session.
- CET 11 I usually continue to exercise despite injury or illness, unless I am very ill or too injured.
- CET 15 If I miss an exercise session, I will try and make up for it when I next exercise.
- CET 16 If I cannot exercise I feel agitated and/or irritable.
- CET 20 If I cannot exercise I feel angry and/or frustrated.
- CET 22 I feel like I've let myself down if I miss an exercise session.
- CET 23 If I cannot exercise I feel anxious.

Weight control exercise

- CET 2 I exercise to improve my appearance.
- CET 6 If I feel I have eaten too much, I will do more exercise.
- CET 8 I do not exercise to be slim.
- CET 13 I exercise to burn calories and lose weight.
- CET 18 If I cannot exercise, I worry that I will gain weight.

Mood improvement

- CET 1 I feel happier and/or more positive after I exercise.
- CET 4 I feel less anxious after I exercise.
- CET 14 I feel less stressed and/or tense after I exercise.
- CET 17 Exercise improves my mood.
- CET 24 I feel less depressed or low after I exercise

Lack of exercise enjoyment

- CET 5 I find exercise a chore.
- CET 12 I enjoy exercising.
- CET 21 I do not enjoy exercising.

Exercise rigidity

- CET 3 I like my days to be organised and structured of which exercise is just one part.
- CET 7 My weekly pattern of exercise is repetitive.
- CET 19 I follow a set routine for my exercise sessions e.g. walk or run the same route, particular exercises, same amount of time, and so on.

ecSatter Inventory (ecSI 2.0) Measures Eating Competence

A measurable risk factor, or an adaptive response to intervention

ecSI 2.0

Below are statements about your eating. Think about each one, then choose the best response for you.

A = Always O = Often S = Sometimes R = Rarely N = Never

	A	O	S	R	N
1. I am relaxed about eating.	☐	☐	☐	☐	☐
2. I am comfortable about eating enough.	☐	☐	☐	☐	☐
3. I have regular meals.	☐	☐	☐	☐	☐
4. I feel it is okay to eat food that I like.	☐	☐	☐	☐	☐

16 items
Max. Score 48
Eating Competent ≥ 32

As a student-athlete, I know that a proper diet is important for fueling my performance, both in-season and offseason. However, building a healthy plate at each meal is sometimes a challenge, because I don't know if my meals consist of the correct combination of foods.

How can I make sure my daily meals are built fully to support my training?

WHAT IS A PERFORMANCE PLATE?

Quality hours in the gym and on the practice field or court are definitely important for improving performance, but your full athletic potential can be hindered if you're not incorporating proper fueling strategies. Whether you eat your meals at the university dining facility or at home, each and every meal you consume during the day should be considered an essential part of your training regimen. Your daily "training table plates" or "performance plates" play a significant role in your energy levels, hydration status and recovery potential.

(For performance plate suggestions and sample meals, turn the page.)

Information presented by SPORT SCIENCE INSTITUTE | Sports, Cardiovascular, and Wellness Nutrition | C·P·S·D·A

Sport-specific advice

CPSDA

sportsrd.org

VEGETARIAN EATING

FOR THE STUDENT-ATHLETE

I have been a vegetarian for two years. With my busy schedule, it can be hard to find convenient vegetarian foods, so I don't eat as frequently as I should and often grab whatever is easiest. I often wonder if I am eating properly to support my training. How can I remain a vegetarian student-athlete without sacrificing performance?

Consistent, well-planned vegetarian meals can provide adequate nutrition and a variety of health benefits. Vegetarians tend to have a lower intake of saturated fat and cholesterol and a higher intake of fiber and phytochemicals from nutrient-dense fruits, vegetables, whole grains, nuts and soy. However, eliminating meat and dairy can jeopardize iron, calcium, iodine, zinc, protein, vitamins B12 and D, and energy (calories) levels. Understanding which vegetarian food choices will support peak performance and overall health is important for student-athlete success.

(For what to eat and best practices, turn the page.)

Information presented by

SPORT SCIENCE INSTITUTE

Sports, Cardiovascular, and Wellness Nutrition

Academy of Nutrition and Dietetics

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Targeted advice

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UNDERSTANDING

DIETARY SUPPLEMENTS

My teammates told me that if I take dietary supplements to gain muscle and recover quickly I can improve my performance.

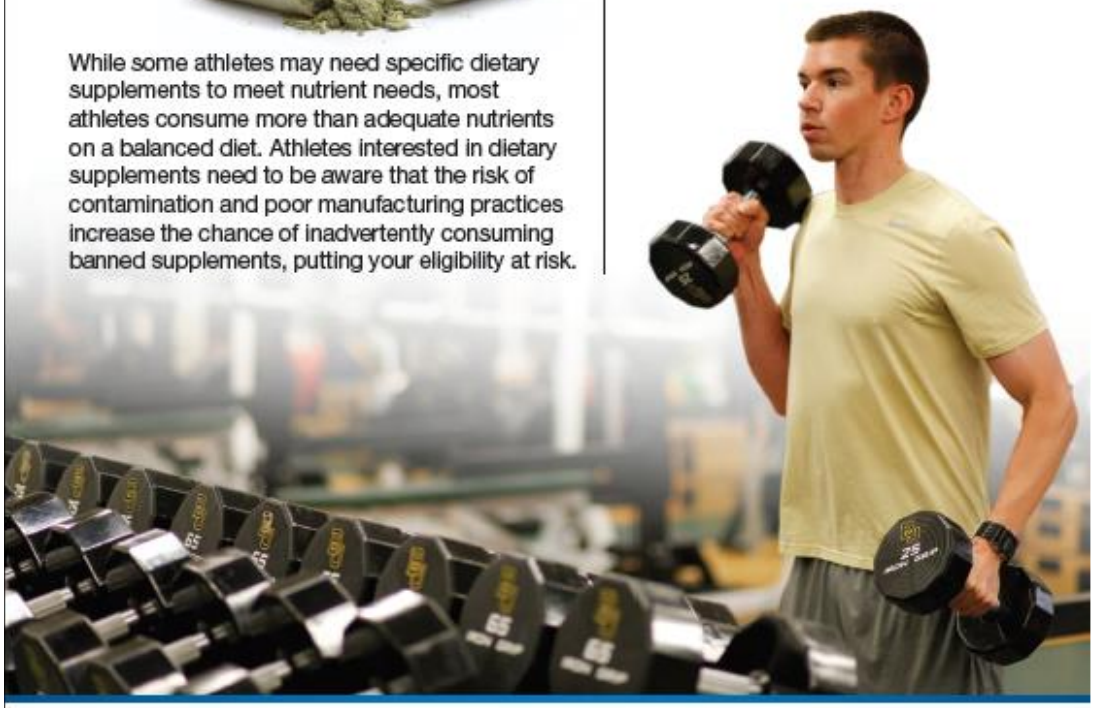
Do I need supplements? Are there any that are safe and effective, and meet the NCAA regulations?

While some athletes may need specific dietary supplements to meet nutrient needs, most athletes consume more than adequate nutrients on a balanced diet. Athletes interested in dietary supplements need to be aware that the risk of contamination and poor manufacturing practices increase the chance of inadvertently consuming banned supplements, putting your eligibility at risk.

WHERE TO START

- A well-designed nutrition plan based on whole foods will safely supply energy and nutrients to fuel your body most effectively for optimal performance.
- When additional nutrition and hydration are needed, first supplement your meals with real food and work with a sports dietitian to create an individualized nutrition plan.
- Know and adhere to the nutritional/dietary supplement regulations of the NCAA.

(To better understand dietary supplements, turn the page.)



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- Little to no research supports the use of creatine and other ingredients in muscle building supplements, especially in adolescent athletes. **Eat protein foods & eat enough!**
- Beware of stimulants, banned substances & side effects

Sport-specific advice

CPSDA

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I'm a sophomore student-athlete on the baseball team. After playing a full season, I feel as if my body composition has really changed. I've lost some muscle and picked up a few extra pounds.

What can I do during the offseason to optimize my body composition so I can be in top shape for next season?

GOALS OF OFFSEASON FUELING

- Compensate for the differences in lifestyle and training during the offseason by adjusting nutrient intake.
- Recognize that changes in body fat and weight may occur and be aware of appropriate changes.
- Create a balance between training volume and nutrient intake.

WHAT ARE YOUR GOALS?

With the grind of the season behind you, this is the perfect time to focus on your eating habits and make changes to your body composition. You can do this by picking a couple habits you'd like to improve during this time period — for example, focus on drinking more water, eating breakfast daily or avoiding fast food. It is important that you rest, recover and enjoy the down time, while also allowing yourself some flexibility with your eating, but remember to always keep your offseason training goals in mind.

(For information on fueling during the offseason, turn the page.)

Information presented by

Advice for off-season

CPSDA

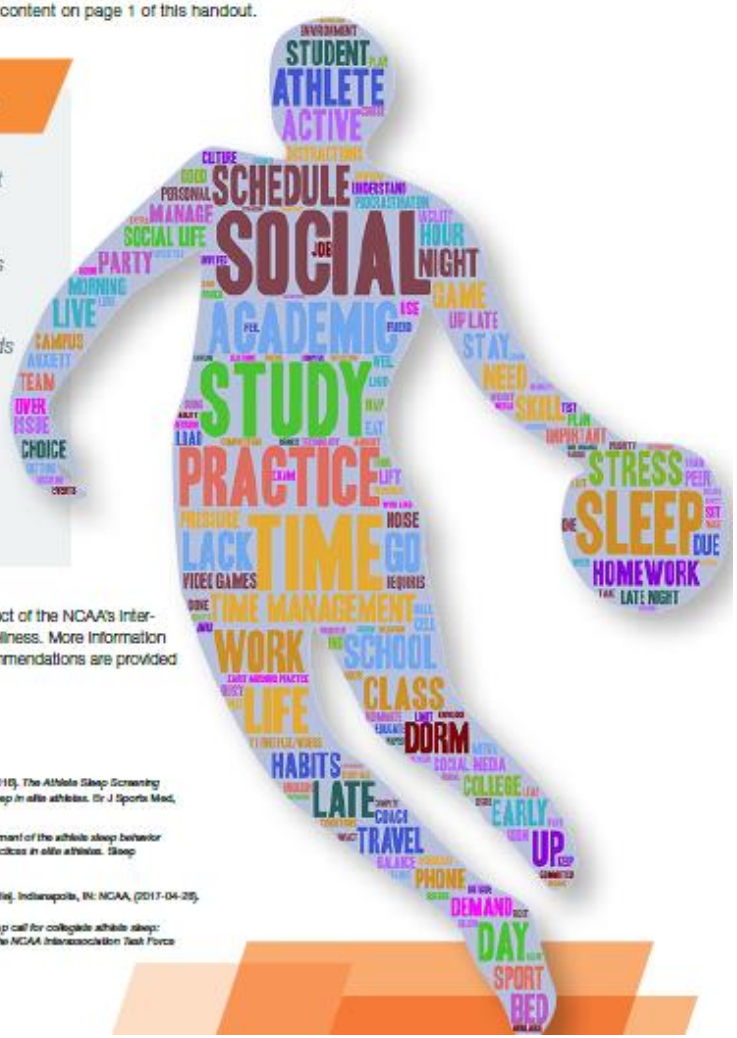
sportsrd.org

What can institutions do to improve collegiate athlete sleep?

1. Consider learning more about athlete time demands by conducting an anonymous annual survey.
2. Consider incorporating sleep screening into the pre-participation exam.
   - The **Athlete Sleep Screening Questionnaire**[3] and **Athlete Sleep Behavior Questionnaire**[4] have been validated for use with athletes.
3. Provide education to athletes and coaches about sleep.
   - One example is for a sports medicine staff member or a licensed mental health provider to facilitate a team discussion, guided by the content on page 1 of this handout.

BARRIERS TO STUDENT-ATHLETE SLEEP[5]

- Time management
- Practice schedules
- Academic demands
- Social activities
- Work demands



These recommendations were the product of the NCAA's Inter-association Task Force on Sleep and Wellness. More information about the consensus process and recommendations are provided in this **article**[6].

[3] Samuels, C., James, L., Lawson, D., & Meeuwisse, W. (2016). *The Athlete Sleep Screening Questionnaire: a new tool for assessing and managing sleep in elite athletes.* Br J Sports Med, 50(7), 418-422.

[4] Driller, M. W., Mah, C. D., & Halson, S. L. (2018). *Development of the athlete sleep behavior questionnaire: a tool for identifying maladaptive sleep practices in elite athletes.* Sleep Science, 11(1), 37.

[5] NCAA. Sport Science Institute Sleep Survey, 2017 [data file]. Indianapolis, IN: NCAA, (2017-04-28).

[6] Kroshus, E., Wagner, J. & Wyrick, D., et al. (2019). *Wake up call for collegiate athlete sleep: narrative review and consensus recommendations from the NCAA Interassociation Task Force on Sleep and Wellness.* Br J Sports Med, 53, 731-736.

Sleep advice

NCAA

ncaa.org

PRE-WORKOUT NUTRITION

- Eat a combination of foods high in carbs and moderate in protein.
- Focus on foods low in fat and fiber.
- Length and intensity of workouts matter.
- 6 a.m. workout? Fuel well the night before and eat something small in the morning.
- Experiment in practices to figure out what works best.

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For advice on customizing a nutrition plan, consult a sports dietitian.

3-4 HOURS BEFORE EXERCISE

- Turkey and Swiss sandwich, apple and low-fat chocolate milk
- Peanut butter and jelly sandwich with banana slices and low-fat milk
- Low-fat Greek yogurt with berries and small salad with chicken
- Always remember to hydrate with at least 16-20 oz. of fluid

30-60 MINUTES BEFORE EXERCISE

- Sports drink
- Fruit, apple sauce, or fruit snacks
- Small granola bar, pretzels, or graham crackers

Available at: sportsrd.org

FUELING FOR RECOVERY

REFUEL muscles with carbohydrates (body weight/2 = grams of carbs).
REPAIR and rebuild muscles with 20-30 grams of high-quality protein.
REHYDRATE with fluids and electrolytes lost during working out.

FUELING STATION: 15-60 MIN. AFTER TRAINING

Chocolate Milk and Almond Refuel
20g Protein • 53g Carbs

1 ½ cups low-fat chocolate milk

1/4 cup almonds

Blueberry Yogurt Parfait
22g Protein • 41g Carbs

6 oz. Greek yogurt topped with:

1/4 cup granola

1 cup blueberries

Snack Extravaganza
20g Protein • 70g Carbs

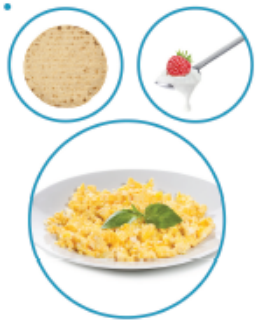
1 string cheese

1 cup apple slices

1/4 cup pretzels

2 tbsp. peanut buttter

TRAINING TABLE MEAL: 3-4 HOURS AFTER TRAINING



Egg Wrap with Yogurt Parfait
28g Protein • 40g Carbs

2 scrambled eggs with 1/4 cup Cheddar cheese

1 whole wheat tortilla

1/2 cup plain yogurt with 1 cup raspberries

Fuel Up Stir Fry
33g Protein • 59g Carbs

3 oz. chicken breast with 1/8 cup teriyaki sauce

1 cup brown rice

1½ cups stir fry vegetables

Chicken Fiesta Bowl
40g Protein • 68g Carbs

1 cup brown rice topped with:

1/2 cup black beans

3 oz. chicken breast

1/8 cup salsa

1/2 cup lettuce

1/8 cup shredded Mexican blend cheese

C·P·S·D·A

NDC NATIONAL DAIRY COUNCIL

For advice on customizing a nutrition plan, consult a sports dietitian.

- **For 2-a-day workouts, this recovery window is even more important.**
- **If you have a low appetite after exercising, a liquid food option may be the best place to start.**
- **Within two hours of working out drink 16-24 oz. of fluid for every pound lost during exercise.**

Available at: sportsrd.org

Blog posts @ RunningInSilence.org

Running in Silence

How Can a Coach Support an Athlete With an Eating Disorder? Q&A With Paula Quatromoni

August 7, 2019 / in Coaching, Q&A / by Rachael

This is part of a Q&A series with leading expert in eating disorders and sports, Paula Quatromoni. For more Q&As click here.

TRENDING POSTS

What I Eat in a Day in Eating Disorder Recovery

"They Just Disappeared": Beyond Anorexia in Runners

Q&A: "I'm a Runner Who is

Blog posts @ RunningInSilence.org

Running in Silence

Coaches in the Dark: What Can Athletic Staff Do in Eating Disorder Situations?

December 4, 2018 / in Coaching, Q&A / by Rachael

I've been a high school assistant cross country coach for the past four years, and more recently became the head cross country coach. Having had an eating disorder as an athlete, I've been hyper-aware of the signs to look for in the athletes who I coach. I also knew, from my own personal experience, that if I suspected an athlete was struggling, it was my responsibility to refer them to a mental health professional and/or a dietitian for a proper evaluation. I even started doing homework to look for available resources in our area.

But I still felt like I was in the dark. Was I following all the right steps? How did other coaches know what to do in these situations? It wasn't until a year ago that I realized that athletic trainers—staff right within the school—have formal education and training to recognize, screen and triage signs and symptoms of eating disorders in sport. In fact, most use an eating disorder protocol to begin the evaluation process, make referrals for intervention, and guide decisions about whether and when it is safe to participate in sport.

TRENDING POSTS

What I Eat in a Day in Eating Disorder Recovery

"They Just Disappeared": Beyond Anorexia in Runners

Available at: http://sites.bu.edu/nutritionalepilab/

NUTRITION REVIEW

Mary Ellen Bingham, MS, RD, CSSD, Mimi E. Borkan, and Paula A. Quatromoni, DSc, RD

Sports Nutrition Advice for Adolescent Athletes: A Time to Focus on Food

Abstract: *Adolescents participating in sport have high demands for nutritional adequacy to meet their needs for growth, development, wellness and athletics. Nutritional risk can be quite high in this population due to their unique needs, low access to credible information and nutrition professionals, and misinformation in the media and marketplace specifically targeting athletes. Physicians and other health professionals have an opportunity to communicate nutrition facts and make evidence-based recommendations about healthy eating in the setting of their ongoing interactions with adolescent athletes and their families. The purpose of this review is to describe the nutritional needs of adolescents participating in sport and highlight the potential for nutritional risk. Endorsed by professional organizations, points that health professionals can use in brief interactions with patients and families are provided to endorse key behavioral strategies that young athletes can adopt to achieve peak athletic performance and optimal nutritional status.*

Keywords: nutrition; adolescent; sports; RED-S; disordered eating

Protein	Carbohydrate	Fruit/Vegetable
Peanut butter	Whole grain bread	Banana
Greek yogurt	Granola	Fresh berries
Scrambled eggs	Tortilla or pita	Diced peppers and onions
Chicken or shrimp	Rice	Stir fry vegetables
Lean beef (sirloin, tenderloin)	Sweet potato	Broccoli

Before bringing sport-specific advice into the conversation, the building blocks of healthy eating and nutritional adequacy must be in place.

PRACTICE APPLICATIONS
Professional Practice

Athlete-Specific Treatment for Eating Disorders: Initial Findings from the Walden GOALS Program

EATING DISORDERS ARE A public health concern because of the high levels of comorbidity with other mental health diagnoses such as anxiety, depression, and the associated suicide risk.[1] Athletes are at increased risk for eating disorders compared with the general public[2,3] and unique features of both the athlete mindset and the sharing personal stories on social media. Although awareness of the problem is growing and the serious consequences to physical and metabolic health, mental health, and performance in sport are well documented, research to guide treatment services that effectively engage and treat athletes with eating disorders is lacking.

Treatment of athletes' eating disorthe intensive outpatient program (IOP) level of care and treatment outcomes achieved. With only one prior report of treatment outcomes from an athlete-specific eating disorder treatment program in the literature,[23] this work contributes novel insights by adding evidence of shifts in behavioral nutrition outcomes to evidence of strength and power improvements documented by

Stranberg & Quatromoni
J Academy Nutrition & Dietetics 2020

Pictures from Canva

Undetected and Untreated: Male Eating Disorders

DR. QUATROMONI & DAVID PROCTOR

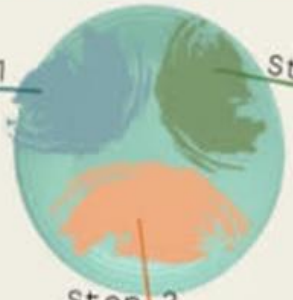
SPOT ON! PODCAST, OCTOBER 2020

Building a

Performance Plate

YOUR PLATE = Lean **Protein** + High-Quality **Carbohydrate** + Colorful **Vegetables**

3-STEP Guide



1. Picky with your PROTEINS

*Lean protein options help **Build + Repair** your muscle

- Chicken, Turkey, Lean Beef
- Eggs
- Greek yogurt, Milk, Cottage Cheese, String Cheese
- Salmon, Tuna, Shrimp, etc.
- Nuts & Seeds
- Beans, Lentils, Tofu

2. Choose Smart CARBS

- Oatmeal
- Potatoes/ Sweet Potatoes
- Brown Rice
- Corn, Peas, Beans, Lentils
- Whole grain breads/cereals/pasta
- Tortillas
- Fruit

*Carbohydrates are the body's primary source of **Fuel & Energy**

3. Vary your VEGGIES

*Vegetables are packed with vital **Vitamins + Minerals & Antioxidants**, necessary for immunity and recovery

- Broccoli, Cauliflower
- Red, green, yellow peppers
- Beets
- Carrots
- Spinach, Argula
- Zucchini, Squash
- Tomatoes
- Cucumbers, Asparagus
- Avocado

Quick + Easy Meal Options

Burrito Bowl

- Brown Rice *or* Quinoa
- Pico de gallo
- Peppers & Onions
- Guacamole
- Black or Pinto Beans
- Chicken *or* Beef

Sandwich

- Whole-grain Bread / Roll
- Turkey
- Spinach + Tomato + Pickles + Peppers
- Avocado
- Mustard

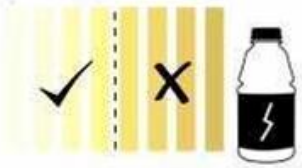
Pasta

- Whole-grain Pasta
- Lean Ground Beef
- Peppers + Onions + Mushrooms
- Marinara Sauce

Stir-Fry

- Brown Rice *or* Quinoa
- Chicken *or* Shrimp
- Carrots + Snap Peas + Broccoli + Scallions + Peppers
- Teriyaki Sauce

NUTRITION for PERFORMANCE



PRE-EVENT FUELING

Athlete's Plate, Every Meal

Focus on carbs, lean protein, vegetables, and fruit! For competition, increase carb intake 1-2 days out (~50% of plate).

Hydration is Key

Carry your water bottle with you! Hydrate to prevent fatigue & dizziness. Check your urine: it should be clear to pale yellow in color!

Snack Smart

Plan ahead. Opt for energy boosting snacks such as fruit, trail mix, smoothies, yogurt, and cereal!

DAY OF COMPETITION

It's Go Time!

Consume 30-60 g of carb per hour of activity through sports drinks and/or food.

ex) sports drink, fruit, gels, and/or chews

30-60 minutes

Focus on easily digestible carb for optimal fueling! Sips of water & sports drink for hydration, electrolytes, and carbs!

ex) applesauce, sports drink, fruit, or pretzels

< 2 hours before

Decrease the size of meals/snacks, and shift towards mostly carbs with minimal protein & fat. Stick with foods you know!

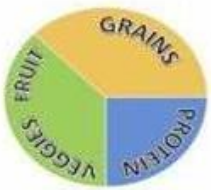
ex) PBJ sandwich, granola bar, fruit, sports drink

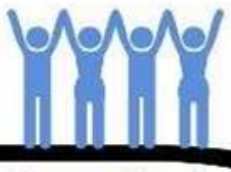
3-4 hours out

Consume a meal that is high carb, moderate protein, and low fat & fiber!

ex) oatmeal, banana, eggs, sports drink

Sandwich with lean meat (turkey, tuna, ham), fruit





POST COMPETITION

Rehydrate, Repair, Replenish!

+ 20-24 oz fluid for every lb lost
+ 20-30 g protein within 1 hour & with each meal after (every 3-5 h)
+ 0.5 g carb per lb of body weight within 1 hour

ex) 16 oz high protein milk, 8 oz greek yogurt-based fruit smoothie, or whole grain turkey sandwich

Athlete's Plate

Replenish your glycogen stores and rebuild muscle with a balanced meal.

ex) pasta, chicken, fruit & vegetables

Eggs, toast, fruit

Team effort!

Be accountable to yourself and your teammates. Will you do what it takes to set yourselves up for performance?

Created by Kylie McKenzie MS, University of Houston, Dietetic Intern | Edited by Brett Singer MS, RD, CSSD, LD - @BSinger10

Acceptable Verbiage

FOR COACHES

How to appropriately speak with student-athletes about weight and body composition

AVOID THIS Unacceptable Verbiage & Terminology Direct these comments towards sports medicine/sports performance, not the student-athlete	SAY THIS Acceptable Verbiage & Terminology These comments may be directed towards the student-athlete
Your goal weight is _____ lbs.	Sports Nutrition and Sports Performance are available to help you with goals related to body composition.
You need to watch what you eat. Are you really going to eat all that? Are you really going to choose THAT?	Sports Nutrition can help you find appropriate fueling strategies to meet your needs.
You look like you have gained/lost weight/body fat. Your arms/stomach/etc look bigger/different.	Sports Performance can design strength and conditioning programs to improve your fitness level and optimize your performance.
You look better since you have been working with Sports Nutrition/Sports Performance.	Since working with Sports Nutrition you appear to have more energy for workouts and practice.
You should do extra conditioning to lose excess body fat.	Sports Nutrition and Sports Performance can design programs to improve your fitness and help with body composition goals.
You need to reduce portion sizes to lose excess body fat.	If you have questions regarding nutrition and how it can help you, talk to your Sports RD.
You should lower your carbohydrate (or fat, or protein) intake to lose excess body fat.	Your performance on the field/court/etc is not where it has been- have you considered talking to Sports Nutrition about fueling strategies?
You look like you have gained weight during the off-season.	You seem tired/not yourself lately - have you considered talking to Sports Nutrition or Sports Medicine?
You need to lose weight/body fat. You look like you've gained weight/body fat.	I noticed your times (or sport specific performance indicator) have been slower - have you considered talking to Sports Nutrition about fueling strategies?