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Eating Disorder Clinic, Department of Psychiatry and Behavioral Sciences
Stanford University School of Medicine
The Risk

Disordered eating behaviors and attitudes are prevalent among college athletes who may be at greater risk for developing eating disorders than college non-athletes (Smolak et al., 2000; DiPasquale & Petrie, 2013).
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| ~25-38%  
(Greenleaf et al., 2009; Johnson et al., 1999) | ~13.5-25%  
(Eisenberg et al., 2011; Renfrew, 2003) |
| **Male College Athletes** | **Male College Non-Athletes** |
| ~12-38%  
(Johnson et al., 1999) | ~3%  
(Eisenberg et al., 2011) |
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# The Impact

**Profound negative impact** on physical and emotional well-being, academic and sports performance, peers, and the campus community

<table>
<thead>
<tr>
<th></th>
<th>Consequences</th>
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</thead>
<tbody>
<tr>
<td><strong>Physical Health</strong></td>
<td>• Hormonal (thwart maturation, sexual dysfunction, reproductive disorders)</td>
</tr>
<tr>
<td></td>
<td>• Cardiovascular (low pulse/bradycardia, temperature, blood pressure,</td>
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<tr>
<td></td>
<td>cardiac arrest, electrolyte imbalance)</td>
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<tr>
<td></td>
<td>• Female Athlete Triad (inadequate intake, menstrual irregularity)</td>
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<tr>
<td></td>
<td>• Bone (recurrent stress fracture, osteoporosis, osetopenia)</td>
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<tr>
<td></td>
<td>• Mouth and Throat (enamel erosion, esophageal rupture, acid reflux)</td>
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<tr>
<td></td>
<td>• Dehydration</td>
</tr>
<tr>
<td></td>
<td>• Death</td>
</tr>
<tr>
<td><strong>Mental Health</strong></td>
<td>• Depression; anxiety; low self-esteem; guilt; shame; hopelessness; difficulty</td>
</tr>
<tr>
<td></td>
<td>adjusting to college environment; suicidal ideation/attempt; avoidance of</td>
</tr>
<tr>
<td></td>
<td>teammates</td>
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<tr>
<td><strong>Sports Performance</strong></td>
<td>• Performance anxiety; increased recovery time; decreased concentration,</td>
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<tr>
<td></td>
<td>strength, &amp; performance</td>
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<td></td>
<td>• Widespread adoption; team reputation which impacts recruitment</td>
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Accessing the College Athlete

- Online platforms have several advantages over in-person interventions
  - Anonymity,
  - Personalization,
  - Quick and easy anytime access among a mobile generation,
  - Dissemination potential
THE PROGRAM
WIA Study Aims

To explore and evaluate WIA’s preliminary
1. Effectiveness in improving body image
2. Acceptability and Feasibility
The WIA Program

- Online
- 8 modules (~15-20mins)
- 8 week = 1 quarter
- Content
  - Psychoeducation
  - Videos
  - Interactive Questions
  - Activities
  - Images
- Tailored specifically for male and female college athletes

<table>
<thead>
<tr>
<th>Week</th>
<th>Module Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Welcome; Athlete Body Aesthetics</td>
</tr>
<tr>
<td>2</td>
<td>The Continuum</td>
</tr>
<tr>
<td>3</td>
<td>Short-term Repercussions</td>
</tr>
<tr>
<td>4</td>
<td>Long-term Repercussions</td>
</tr>
<tr>
<td>5</td>
<td>Team Culture Change</td>
</tr>
<tr>
<td>6</td>
<td>Change Body and Food Talk</td>
</tr>
<tr>
<td>7</td>
<td>Build and Sustain a Balanced and Sport-Focused Approach to Eating &amp; Exercise</td>
</tr>
<tr>
<td>8</td>
<td>Mindfulness in Improving Body Image and Reducing Disordered Eating</td>
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As a D1 student athlete at Stanford University, you have the opportunity to represent your sport for one of the top institutions in the world. For many of you, this experience of a lifetime has likely provided immense physical, social, academic, and psychological benefits and opportunities. For some, however, collegiate sport and certain associated lifestyle factors may actually increase risk for developing disordered eating and poor body image. As you can imagine, living with disordered eating and poor body image significantly limits the potential benefits collegiate athletes might otherwise gain (1-2).
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Dissonance in Action

Cognitive Dissonance Based Prevention

= Inconsistencies between behavior and beliefs will produce dissonance, and behavior change must occur to alleviate dissonance (Festinger 1957).

• Effective among various high-risk samples (Becker et al, 2006, 2008; Matusek et al., 2004) and reduced eating disorder onset compared to controls (Stice et al., 2008).
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Letter to a Frosh on Your Team

Specify the costs of body image obsession and disordered eating. Think of as many costs as you can.

Tell him/her how to avoid developing body image and disordered eating concerns.

Use any information you learned in WIA or other forums.
College culture includes a history of teasing, often hazing. These can really impact Team Culture.

For example, have you ever experienced a teammate giving someone a hard time because he or she wasn’t in peak shape?

One Stanford athlete stated, “If you are slightly overweight, you are going to hear about it from everyone [on the team],” while another athlete remembered hearing teammates remark, “You’re fat,” to a teammate who wasn’t in peak shape.
MINDFUL EATING EXERCISE

1) SIT DOWN.
   Look at the item you're about to enjoy. Notice shape and color. Notice what you are thinking about the item.

   “I'm hungry and want to eat this now.” Remember, it's important to be aware of, but not overly attached to, what you are thinking.

2) DESCRIBE ACTIONS.
   - Notice the smell
   - Place the item in your mouth
   - Focus on taste
   - Notice your thoughts
   - Keep attention on the food (gently bring attention back as needed)

3) GO IN SLOW-MOTION.
   - Notice the smell
   - Place the item in your mouth
   - Focus on taste
   - Notice your thoughts
   - Keep attention on the food (gently bring attention back as needed)

One of the simplest ways to understand mindfulness and bring its practice into your everyday life is through mindful eating. Mindful eating is taught in nearly every basic mindfulness course across the country.
IDENTIFYING AND PRIORITIZING YOUR VALUES

What we say expresses our values and what we value influences what we say. Think for a minute about the many things you value. The pie chart below reflects the potential distribution of values of someone with poor body image and disordered eating behaviors. If an individual’s top value is body aesthetics, then much of his or her time, energy, thoughts and behaviors will likely get devoted to that value. How would this person evaluate himself or herself overall if he or she were not pleased with body aesthetic? Probably not favorably.
Education and Application through Practice

**Bold Move** = weekly offline assignments that fostered practice, application, and generalization of material

**Bold Move Examples**

1. Cut out negative body and food talk.

2. Compliment teammates on performance, drive, training effort, or strength rather than body aesthetics, leanness, or muscle size.
RESULTS
### Sample Demographics

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SAMPLE n=29</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td>Male=8 (28%); Female=21 (72%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>Asian=3 (10%); Black=2 (7%); White =24 (83%)</td>
</tr>
<tr>
<td><strong>Sport</strong></td>
<td>13 sports</td>
</tr>
<tr>
<td></td>
<td>Cross country =2; Track and field =1; Field hockey =5;</td>
</tr>
<tr>
<td></td>
<td>Gymnastics =5; Lacrosse =1; Lightweight crew =2; Open weight crew =1;</td>
</tr>
<tr>
<td></td>
<td>Softball =1; Soccer =3; Swimming =3; Volleyball =1; Fencing =2; Wrestling =2</td>
</tr>
<tr>
<td><strong>Scholarship</strong></td>
<td>Yes =19 (65%); No =10 (35%)</td>
</tr>
<tr>
<td><strong>Academic Year</strong></td>
<td>Freshman =3 (10%); Sophomore =7 (24%); Junior =9 (31%); Senior =10 (35%)</td>
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WIA Acceptability

- 89% would recommend WIA to a friend
- All 8 modules rated as at least moderately relevant or greater

*WIA was highly acceptable as indicated by participant engagement*
Nearly all measures demonstrated modest decreases in body image and disordered eating concerns from pre- to post-WIA, with corresponding small to medium effect sizes.
WIA Preliminary Effectiveness

**Compulsive Exercise Test**
- Pre-WIA Total Sample: 39.52
- Pre-WIA Females: 36.83
- Pre-WIA Males: 29.75
- Post-WIA Total Sample: 34.5
- Post-WIA Females: 32.07
- Post-WIA Males: 26

**Body Image Culture Survey**
- Pre-WIA Total Sample: 23.38
- Pre-WIA Females: 21.1
- Pre-WIA Males: 19.5
- Post-WIA Total Sample: 15.5
WIA Preliminary Effectiveness

Disordered Eating among Athletes Questionnaire

Dietary Restraint

Pre-WIA | Post-WIA
---|---
Females | Total Sample | Males
0.82 | 0.77 |
1.27 | 1.17 |
1.3 | 1.25 | 1.24
1.58 | 1.5 |
Summary

WIA:

✓ brief (8 weeks; ~120 minutes)
✓ the first online body image enhancement and disordered eating intervention tailored specifically for both male and female athletes,
✓ achieved modest improvements in body image and disordered eating concerns and
✓ high acceptability among a small pilot sample of Stanford athletes.
✓ further research warranted
FUTURE DIRECTIONS
Dissemination Challenges

- Significant barriers hinder college campuses’ willingness and ability to adopt, implement, and maintain intervention programs.
  - Financial and personnel resources
  - Multidisciplinary coordination and management between Athletics, Psychiatry, Psychology, Medicine, Dieticians, Parents
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• Significant barriers hinder college campuses’ willingness and ability to adopt, implement, and maintain intervention programs.
  • Financial and personnel resources
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• The short- and long-term viability of such programs could greatly increase if we better understood, and could increase, stakeholders interest in and support of them
THANK YOU

WIA Team:
Sarah Lyons, MS, ATC, PES, Athletic Trainer, Stanford University Sports Medicine
Miriam Parrott, Graduate Student Research Assistant, PGSP Stanford PsyD Consortium
Katerina Gregoriou, Undergraduate Student Research Assistant, Varsity Rowing
Sarah Pajarito, MS, Research Assistant, Department of Psychiatry, Stanford
Robyn Tepper, MD, Vaden Student Health Center Medical Director, Stanford
Jenifer Waldrop, RD, Vaden Student Health Center Dietician, Stanford
Megan Jones, PsyD, Clinical Assistant Professor, Department of Psychiatry, Stanford
EXTRA SLIDES
<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th>FEMALE n=21 (72%)</th>
<th>MALE n=8 (38%)</th>
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<tbody>
<tr>
<td>Age (M, SD)</td>
<td>19.81 (1.12)</td>
<td>20.50 (1.51)</td>
<td>20.0 (1.25)</td>
</tr>
<tr>
<td>Race</td>
<td>Asian=2 (9%); Black=1 (5%); White=18 (86%)</td>
<td>Asian=1 (12.5%); Black=1 (12.5%); White=6 (75%)</td>
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Rates of Disordered Eating

**Total Sample**

- BL OBES: 45%
- PT OBES: 36%
- BL Vomitting: 14%
- PT Vomitting: 10%
- BL Fasting: 14%
- PT Fasting: 3%
- BL Laxatives: 3%
- PT Laxatives: 3%
- BL Diet Pills: 3%
- PT Diet Pills: 3%

**Male**

- BL OBES: 25%
- PT OBES: 25%
- BL Vomitting: 13%
- PT Vomitting: 13%
- BL Fasting: 25%
- PT Fasting: 25%
- BL Laxatives: 0%
- PT Laxatives: 0%
- BL Diet Pills: 0%
- PT Diet Pills: 0%

**Female**

- BL OBES: 52%
- PT OBES: 40%
- BL Vomitting: 3%
- PT Vomitting: 6%
- BL Fasting: 10%
- PT Fasting: 3%
- BL Laxatives: 3%
- PT Laxatives: 6%
- BL Diet Pills: 3%
- PT Diet Pills: 3%