



“Vigorexia and exercise addiction”

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Presentation Outline

- Definitions
- Signs/Symptoms/Diagnostic criteria
- Prevalence
- Causes/Contributing risk factors
- Comorbidity with other disorders
- Coping/Treatment
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Definitions

BODY DYSMORPHIC DISORDER (BDD)

Those who suffer from this disorder:

- ❖ constantly detect imperfections in their body
- ❖ perceive their image in the mirror distorted
- ❖ are unable to control the frequency of annoying and repetitive thoughts about their supposed "imperfections"



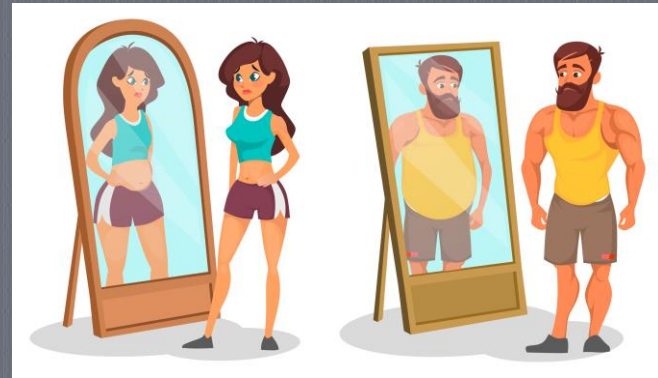
Common characteristic: lack of satisfaction with body image and muscular system

Exercise increases muscle mass \longrightarrow Increased tendency for muscularity (muscular dysmorphic disorder or muscular dysmorphia)

(Pope, Phillips & Olivardia, 2000)



Definitions

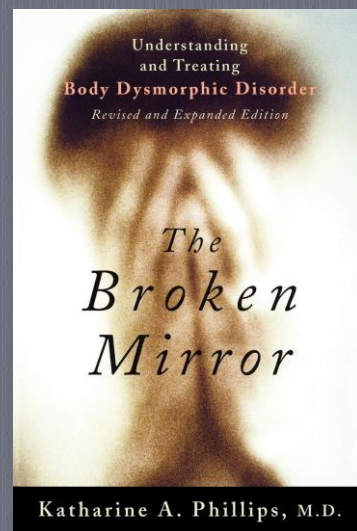
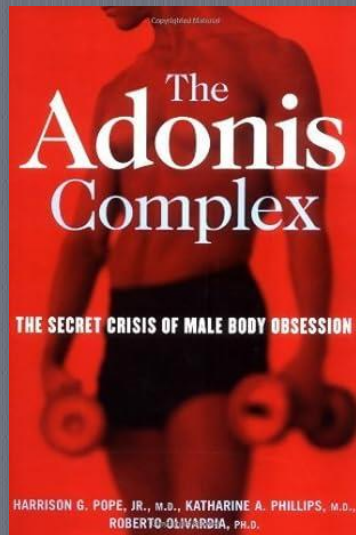


- It proves that men, like women, have been targeted aggressively in creating doubt and insecurity about their bodies.
- **Muscle dysmorphia**, also known as **vigorexia** or **bigorexia** or **reverse anorexia**, is a type of eating disorder (such as anorexia nervosa or bulimia) which mainly affects men.
- Muscle dysmorphia involves a person's belief that their body is insufficiently muscular and that they should constantly improve their appearance.
- Men with muscle dysmorphia believe themselves to be smaller than they actually are while women with anorexia nervosa believe themselves to be larger than they actually are.
- Both men and women impacted by bigorexia will have distorted thoughts about their bodies
- Is vigorexia an eating disorder or an addictive disorder?



Definitions

- Muscle dysmorphia (MD) is a newly described subcategory of body dysmorphic disorder (Pope, Gruber, Choi, Olivardia, & Phillips, 1997)
- Other authors have described MD as a type of obsessive-compulsive disorder (OCD), where the obsession is muscularity and the compulsion is engaging in activities or rituals to achieve levels of muscularity (Dawes & Mankin, 2004; Pope et al., 2000)
- The disorder affects mostly men, particularly those who engage in weightlifting or body building (Pope, Katz, & Hudson, 1993)
- MD is part of a larger, society-wide increased focus on male bodies that has also been termed as “Adonis Complex” (Pope, Phillips, & Olivardia, 2000).



Signs/Symptoms/Diagnostic criteria

Diagnostic criteria for muscle dysmorphia ([Pope et al. 1997](#))

- Pre-occupation with the idea that one's body is not sufficiently lean and muscular.
- Characteristic associated behaviors include long hours of lifting weights and excessive attention to diet.
- The pre-occupation is manifested by at least two of the following four criteria:
 - (1) The individual frequently gives up important social, occupational or recreational activities because of a compulsive need to maintain his or her workout and diet schedule.
 - (2) The individual avoids situations where his or her body is exposed to others or endures such situations only with marked distress or intense anxiety.
 - (3) The pre-occupation about the inadequacy of body size or musculature causes clinically significant distress or impairment in social, occupational or other important areas of functioning.
 - (4) The individual continues to work out, diet or use performance-enhancing substances despite knowledge of adverse physical or psychological consequences.
- The primary focus of the pre-occupation and behaviors is on being small or inadequately muscular, as distinguished from fear of being fat as in anorexia nervosa, or a primary pre-occupation only with other aspects of appearance as in other forms of body dysmorphic disorder.



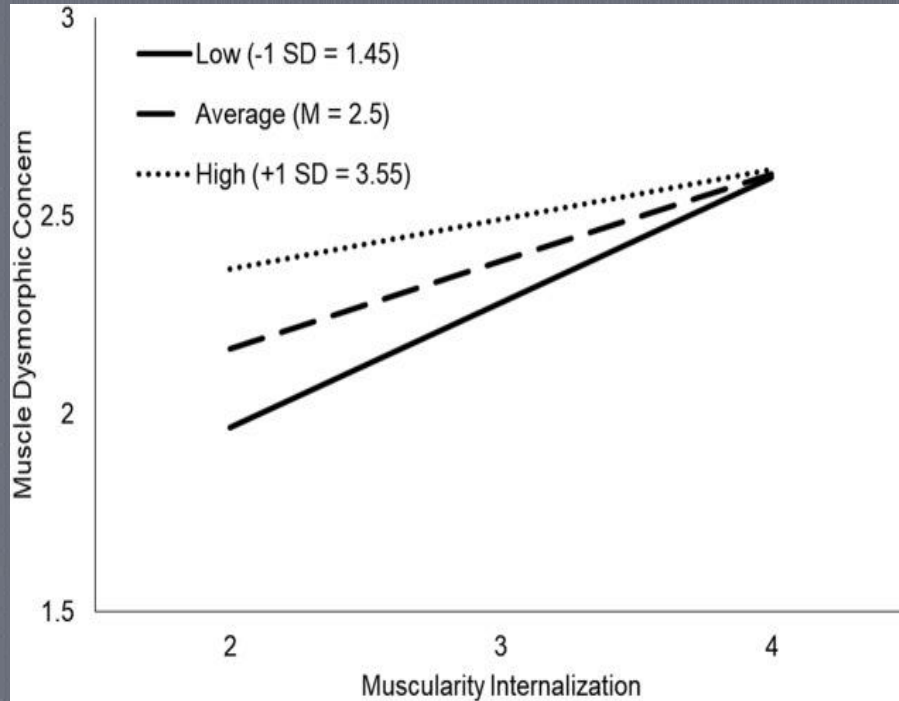
The Relationship Between Anabolic Androgenic Steroids and Muscle Dysmorphia: A Review

Lebur Rohman

Eating Disorders, 17:187–199, 2009 <https://doi.org/10.1080/10640260902848477>

Dimensions of body image	Comment
Perceptual	
The individuals perceiving themselves to be small and skinny, even though they are extremely muscular.	In the study by Olivardia et al. (2000) less than half the participants showed “excellent” or “good” insight into the fact that their perception of themselves was inaccurate; 50% of the men had poor insight and 8% had no insight at all.
Cognitive	
The individual having thoughts that his appearance is not good enough. Also, when comparing to other muscular men they see themselves to be much smaller, despite similar body dimensions	Olivardia et al. (2000) found that 50% of participants claimed thinking about their muscularity for more than 3 hours per day.
Behavioral	
The individual hides his body by wearing many layers of clothes and inadvertently trying to be perceived as more muscular; extreme mirror and reflection checking; steroid use despite knowledge of adverse effects and sacrificing occupational or recreational activities to maintain workout schedule.	Characteristics of this nature is leading some authors to advocate that the syndrome is a type of OCD.
Emotional	
Feelings of guilt when not working out or neglecting a specific diet.	

Thinness and muscularity internalization: Associations with disordered eating and muscle dysmorphia in men



Both muscularity internalization and thinness internalization were independently and positively associated with disordered eating as well as muscle dysmorphia.

Men who internalized the muscular ideal to a greater extent, had higher levels of muscle dysmorphia symptoms when they did not highly internalize the thin ideal.

The effect of muscularity internalization progressively strengthens as thinness internalization (ranging from 1 to 5), decreases to a value of 1.

Men with high muscularity internalization, in the absence of high internalization of the thin ideal, may experience greater drive for muscle size because muscularity may be less easily visible without the aid of low body fat, increasing the need to engage in more muscle-building behaviors. Muscle dysmorphia may, therefore, be a greater risk for men who pursue the muscularity ideal (e.g., bodybuilders) than those who additionally pursue the thin ideal.

Prevalence

- Muscle dysmorphia mainly affects males, with symptoms usually beginning in the late teens or early adulthood.
- The number of individuals affected by muscle dysmorphia is unknown; however, research indicates that between 1.7% and 2.4% of individuals meet criteria for body dysmorphic disorder.
- Although numbers are difficult to estimate, as many as 100 000 people or more worldwide meet the formal diagnostic criteria in the general population.
- It is the individuals who are, or believe themselves to be, underweight who are at the highest risk of developing MD
- College age men who are underweight are as dissatisfied with their bodies as college women who are overweight
- Insatisfaction with upper body strength significantly predicted MD symptoms



Is There Any Relationship Between Body Image Perception, Eating Disorders, and Muscle Dysmorphic Disorders in Male Bodybuilders?

American Journal of Men's Health
2018, Vol. 12(5) 1746–1758
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Aslı Devrim, MSci¹ , Pelin Bilgic, PhD¹ , and Nobuko Hongu, PhD² 

- 120 bodybuilders (62 competitive, 58 non-competitive)
- 67.5% had symptomatology of eating disorders (EAT-40 = Eating Attitude Test)
- 58.3% had symptomatology of muscle dysmorphic disorders (MDDI = Muscle Dysmorphia Disorder Inventory)



Causes/Contributing risk factors

- Comparison of the **changing bodies of action toys** in the previous 30 years showed that all the toys demonstrated a significant change in musculature over the 30 years, the more recent version being more lean and muscular than the older toys. The results of the study suggested that societal/cultural expectations start early in life and may contribute to the development of body image disorders.
- The number of **fitness magazines directed at men** and the number of undressed men in advertisements in other magazines have increased over the past 20 years as well.
- The ideal male form in media presentations is moving toward that of the V-shaped masculine physique—tall, muscular, and mesomorphic. The current sociocultural standard for attractiveness for men is a healthy, extremely athletic appearance. This preference appears to develop at an early age, often between the ages of six and seven, and increases with age until it peaks during adolescence and early adulthood.
- The internalization of the **mesomorphic body ideal presented in the media** will increase the likelihood of the development of MD
- Men have a tendency to overestimate **the amount of muscularity that women find attractive**. Although women have always been attracted to athletic males, most do not find an excessively muscular body desirable.
- **Sport participation** could play a similar role as dieting does in the development of eating disorders. While dieting does not lead to the development of an eating disorder in all cases, it does increase the risk for development. Sport participation does not lead to the development of MD in all cases, but it does increase the risk for developing the disorder
- **Perfectionism**, most notably concern over mistakes, predicted the level of reported MD symptoms.
- There is a negative relationship between self-esteem and MD symptoms; men with report higher levels of MD. The **lower self-esteem**, the higher the body dissatisfaction and the worse the mood.
- **Heredity and genetic factors ???** (do appear to contribute to BDD)

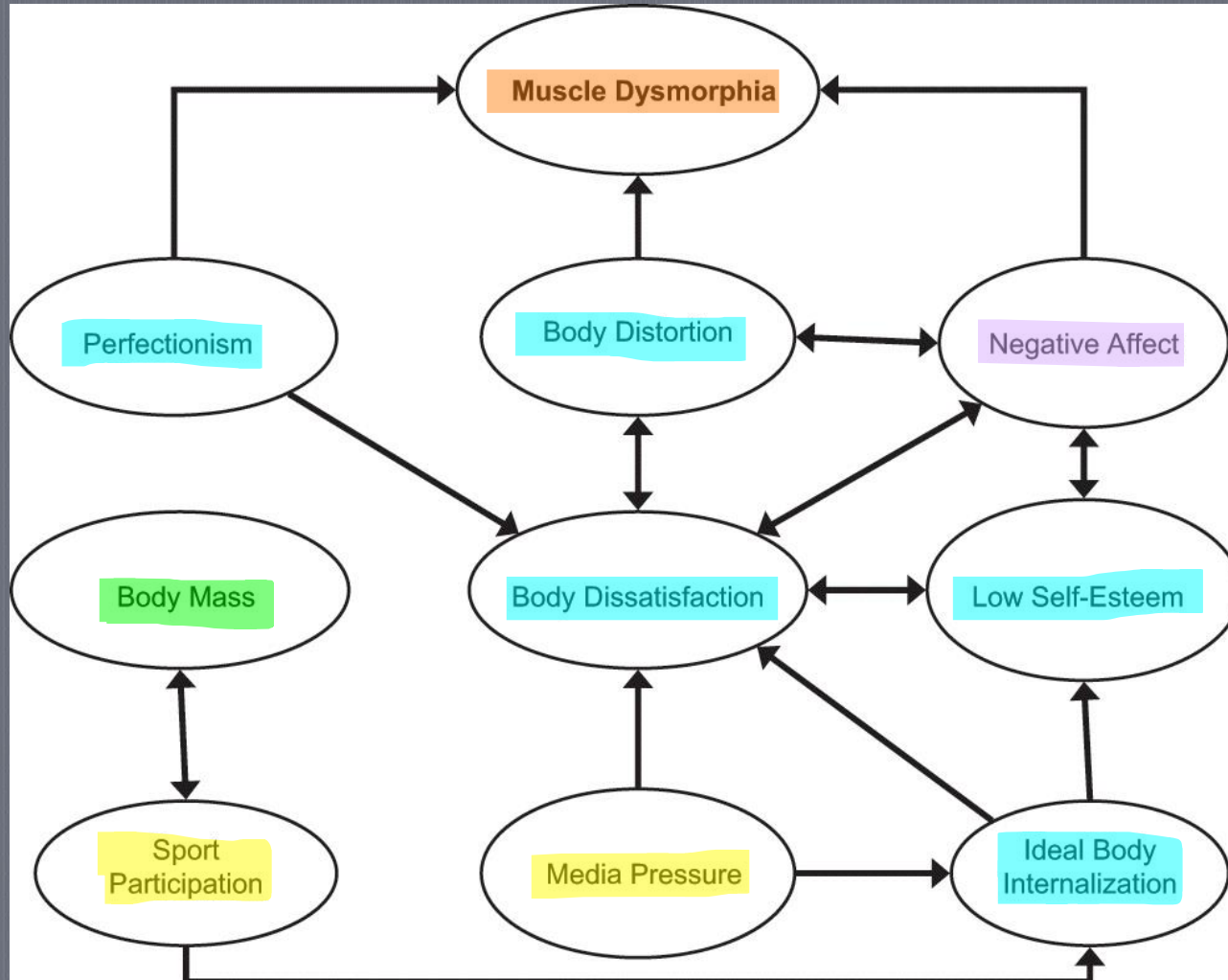


A Conceptual Model of Factors Contributing to the Development of Muscle Dysmorphia

Frederick G. Grieve

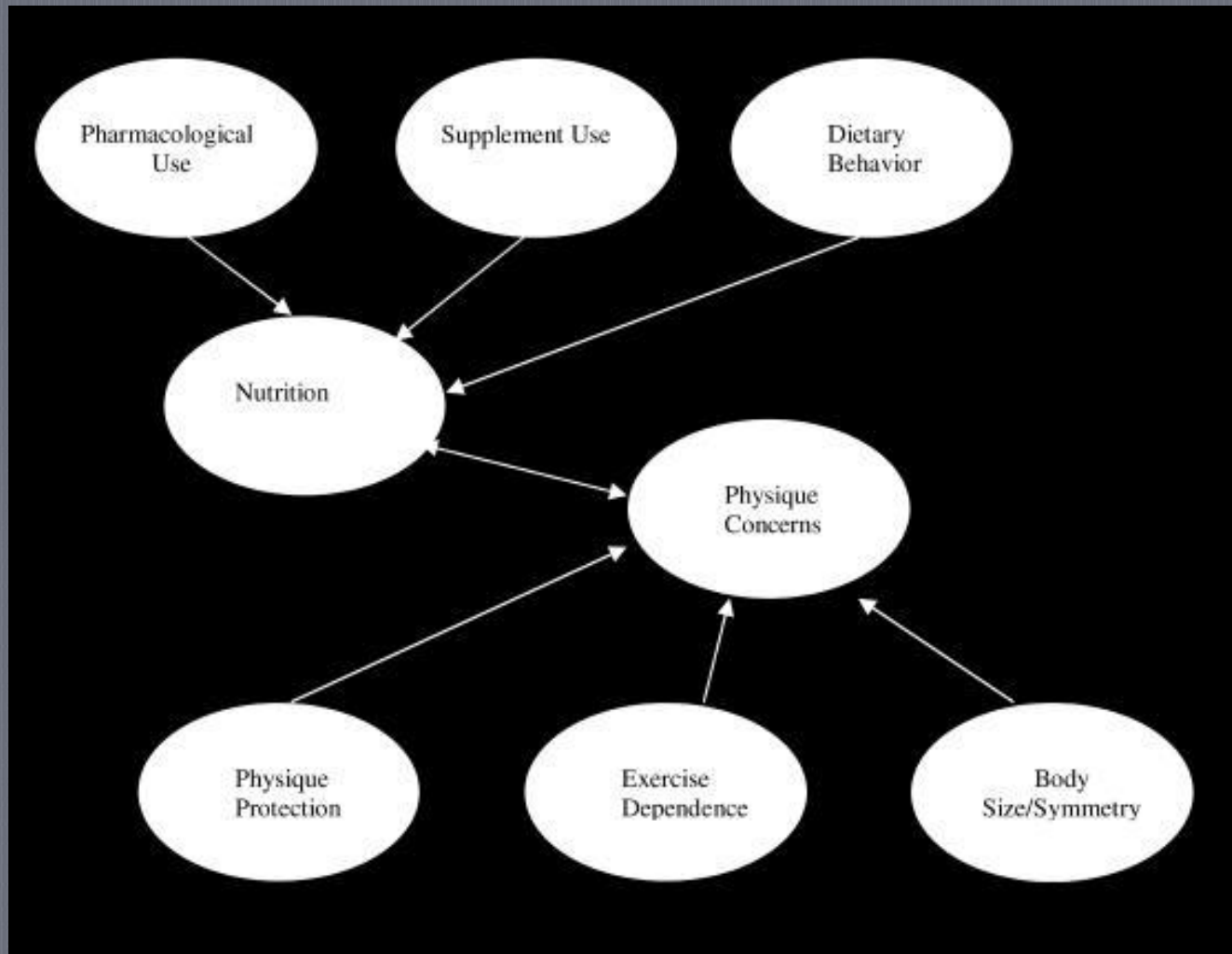
Eating Disorders, 15:63–80, 2007

<https://doi.org/10.1080/10640260601044535>



Contributing psychobehavioral factors for muscle dysmorphia

Lantz CD, Rhea DJ, Cornelius AE. *Journal of Strength and Conditioning Research*, 2004





Bullying victimization and muscle dysmorphic disorder in Italian adolescents: The mediating role of attachment to peers

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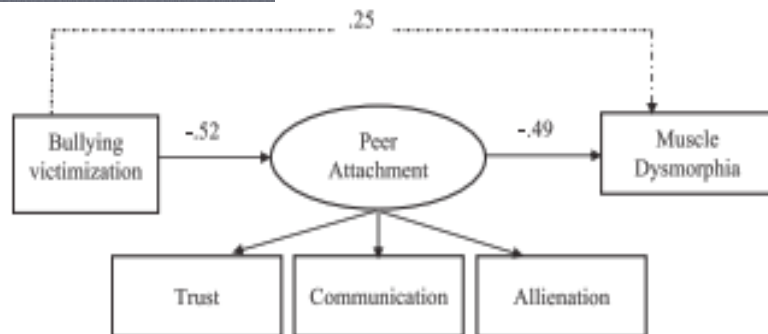
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ABSTRACT

Bullying victimization has a negative impact on the psychological health of individuals, including in cases of muscle dysmorphic disorder (MD). However, research into possible mediation factors is sparse. The present study aimed to investigate the role of attachment to peers in the association between bullying victimization and MD. This study included 1,062 participants with an average age of 17.44 years (range 15–21 years; SD = 1.14) from four high schools in northwestern Italy. The hypothesized relationships among the variables were tested through structural equation model. Path analysis modeling yielded significant results showing an indirect path from bullying victimization to MD, in which alienation from peers functions as a partial mediating variable between bullying victimization and MD ($\chi^2(4) = 5.188$, $df = 4$, $p = .269$, CFI = 0.999, RMSEA = 0.017 [90% CI = 0.000, 0.052], SRMR = 0.013). It is possible that MD symptoms represent an attempt to cope with feelings of vulnerability and rejection associated with peer alienation. In turn, peer alienation can be enhanced by bullying victimization. Specifically, bullying victimization can increase the negative perception of oneself as vulnerable and the world as dangerous and threatening, thus potentially contributing to the development of MD. Limitations of the study and future directions for research are also discussed.



1,062 participants (15-21 yrs)

Comorbidity with other disorders

- ❑ Behaviorally, men with muscle dysmorphia (MD) exhibit abnormal eating patterns that are driven by overvalued belief systems.
- ❑ It is probable that factors specific to the development of eating disorders also influence the development of MD.
- ❑ Men with MD consume a large number of calories with the goal of increasing muscle mass. This large intake in calories is analogous to **binge eating**, though whether men with MD feel out of control while eating has not yet been evaluated.
- ❑ However, it is clear that the eating patterns exhibited by men with MD are influenced by underlying distorted cognitions, as are the eating patterns exhibited by women with **anorexia nervosa** and **bulimia nervosa**. These similarities in symptom presentation imply that similar forces are operating on both men and women in the development of eating disorders and MD.
- ❑ **Orthorexia nervosa** and eating attitudes mediated the association between perfectionism and MDD
- ❑ Men with MD often either have a **history of eating disorders** or have **concomitant symptoms of eating disorders** along with MD.



Ghaderi, A., & Welch, E. (2022).

Appearance and Performance-Enhancing Drugs and Supplements, Eating Disorders Symptoms, Drive for Muscularity, and Sexual Orientation in a Sample of Young Men.

Nutrients, 14(22), 4920. <https://doi.org/10.3390/nu14224920>

	Protein Supplements	Creatine	Anabolic Steroids
At least once a week	113 (13.9%)	50 (6.2%)	1 (0.1%)
At least twice a month	33 (4.1%)	10 (1.2%)	0
At least once a month	26 (3.2%)	9 (1.1%)	0
A few times per year	41 (5.0%)	21 (2.6%)	1 (0.1%)
Less than few times/year	46 (5.7%)	43 (5.3%)	1 (0.2%)
Never	553 (68.1%)	672 (83.5%)	806 (99.6%)



Coping/Treatment

-Self-care thoughts



Vs.

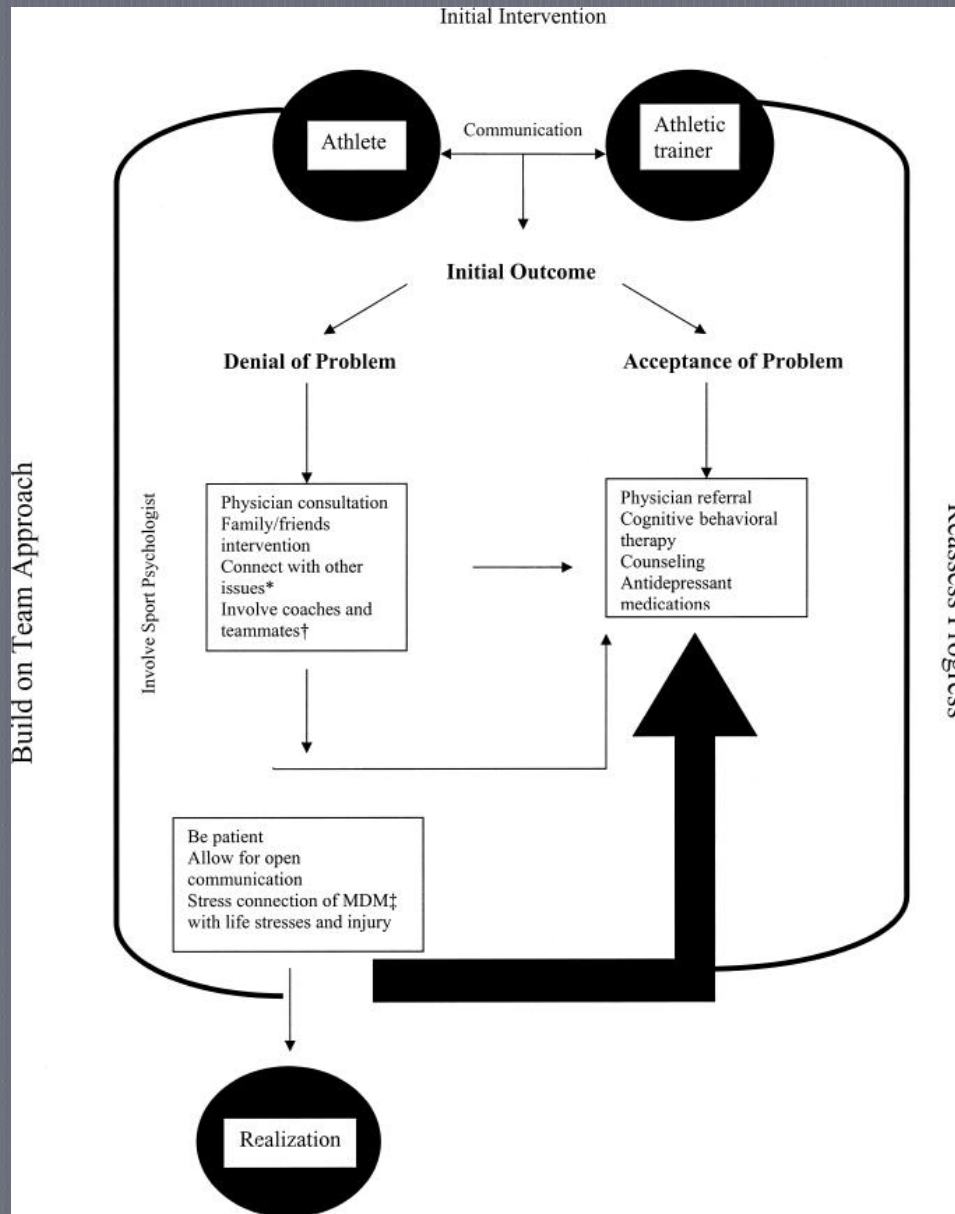


- How one looks on the outside does not define the type of person one is, one's athletic ability, or the quality of one's character.
- We should draw on our forefathers' wisdom that it is all right to look ordinary.
- Wanting to look good and feel healthy are positive traits, but it is not healthy to compare oneself to the unattainable standards imposed by Western society.
- If we allow ourselves to be taken in by these cultural beliefs about beauty, the process of muscle dysmorphia and related morbidity will self-perpetuate.



Coping/Treatment

-The athletic trainer's role



- The athlete should be approached in a nonconfrontational manner.
- Maintain athlete confidentiality
- Often, the disorder is masked by the “demands of the sport.”
- One obvious sign is excessive staring in mirrors.
- Although mortality rates are not high for muscle dysmorphia (MDM), several notable morbidities are associated, ranging from lifestyle issues, such as spending excessive time in the gym and ignoring social commitments, to others that affect physical health, such as androgenic-anabolic steroid use.
- Better allowing than forbidding athletes to engage in controlled physical activities, unless there are medical or therapeutic reasons.

Intervention strategy proposed by

Leone, J.E., Sedory, E.J., & Gray, K.A. (2005). Recognition and treatment of muscle dysmorphia and related body image disorders. *Journal of Athletic Training*, 40(4), 352–359.



Coping/Treatment

-The athletic trainer's role

Social Avoidance

1. How often have your relationships with others been affected by your exercise and diet regimens?
2. Do your concerns about your appearance influence your school or career performance? Do you miss out on opportunities to progress because of your self-consciousness?
3. Do you frequently miss school or work or avoid social activities because of your appearance concerns?⁷
4. What measures do you take to avoid showing your body to others? Do you pass up chances to participate in sports because you will have to change clothes in front of people? Do you often wear baggy clothes or hats to hide your body or face?^{4,10}
5. Do your concerns about your appearance affect your sex life?¹⁰

Time

1. What portion of each day do you spend grooming yourself?¹⁰
2. How much time is spent daily on exercises with the specific intent of bettering your appearance (eg, abdominal exercises, weightlifting) rather than improving your performance in sport?¹⁷
3. How much of your day is taken up with actively worrying about your appearance?¹⁰
4. How frequently does your appearance make you feel distraught, depressed, or anxious?

Diet and Other Practices

1. How commonly do you diet, ingest certain foods (eg, low-fat, low-carbohydrate, or high-protein foods), or take supplements with the explicit aim of enhancing your appearance?
2. What portion of your salary or other income is devoted to items and practices (eg, exercise equipment or classes, grooming supplies, surgery, special foods or dietary aids) to better your physical appearance?¹⁸
3. Have you at any time taken a drug (lawful or not) to drop pounds or increase muscle mass?
4. Aside from drugs, have you pursued other methods of enhancing your appearance, such as overexercising or attempting your normal training regimen despite an injury; fasting, purging, or other detrimental nutritional activities; or unproven methods for growing hair, increasing muscle mass, or enlarging the penis?¹⁸

Leone, J.E., Sedory, E.J., & Gray, K.A. (2005). Recognition and treatment of muscle dysmorphia and related body image disorders. *Journal of Athletic Training*, 40(4), 352–359.



Coping/Treatment

-Medical treatment



- Cognitive behavioral therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) have been suggested as potential treatments.
 - SSRIs appear to be more effective for body dysmorphic disorders (BDD) than other antidepressants and may help control your negative thoughts and repetitive behaviors. These medications may take up to 12 weeks to become effective.
 - CBT is a type of talk therapy that can be done on your own or in a group. The therapy focuses on identity building, perception, self-esteem, and self-worth
- If you have begun using steroids or other performance-enhancing drugs as a result of MD, you may also need endocrine treatment to rebalance your hormones.

-
- Physically active subjects with muscle dysmorphia could benefit from the help of nutritional professionals to evaluate energy estimation, guide the diet and its distribution in macronutrient and consider the principle of nutrition to functional recovery of the digestive process, promote liver detoxification, balance and guide to organic adequate intake of supplemental nutrients and other substances (Contesini et al.2013)

- ++ Psychotherapy
- ++ Psychoeducation

(Psychoeducation refers to the process of providing education and information regarding a specific topic to patients with eating disorders and their family.

It enables patients to address the challenges better and experience more control and better well-being.)

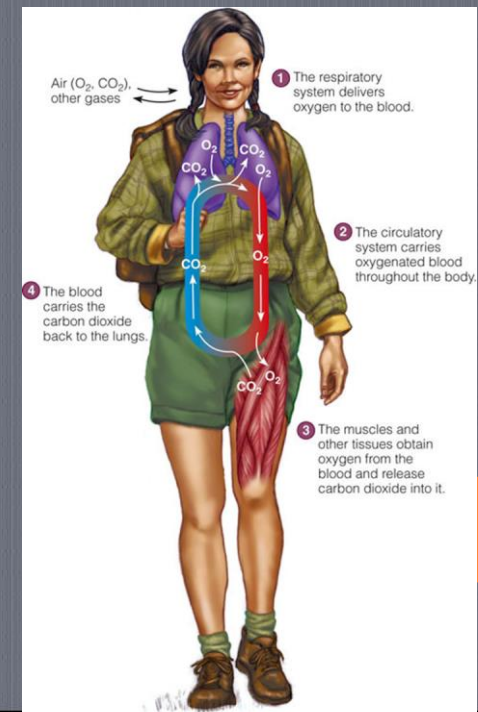


Aerobic training



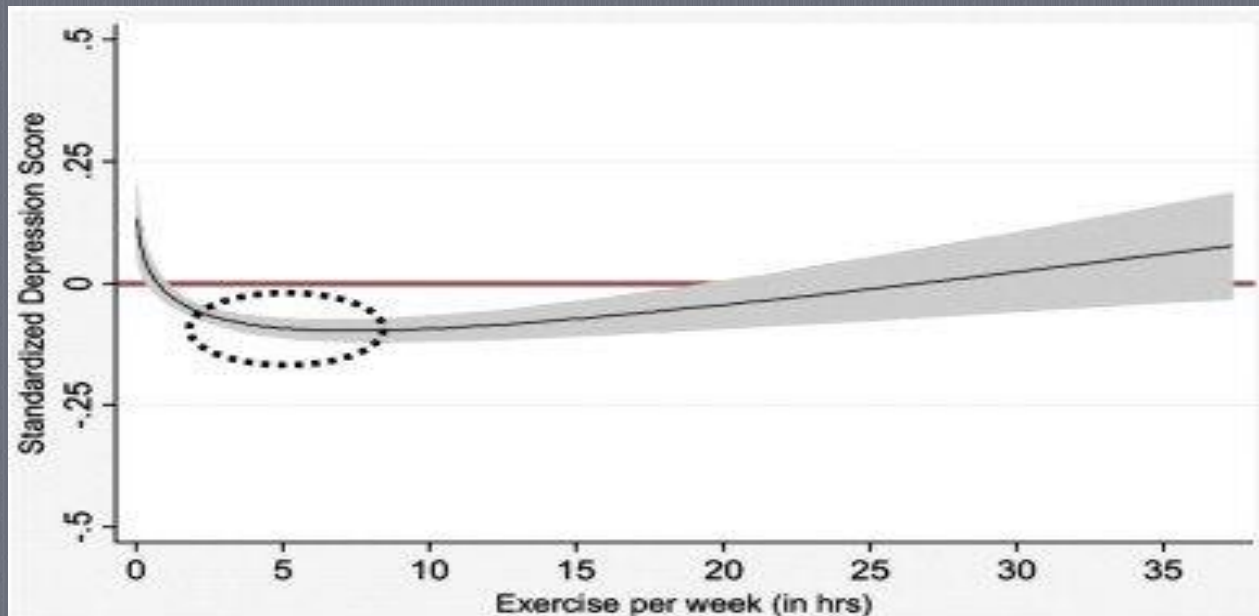
Aerobic or cardiovascular fitness

- is the most important component of physical fitness
- is improved by activities such as walking, jogging, running, swimming, skating, cycling, stair climbing, and cross-country skiing
- Physiological benefits ▶ Aerobic fitness increases the capability of the cardiovascular system to supply oxygen and energy resulting in many physical health benefits:
 - decreasing the risk of cardiovascular diseases, stroke, high blood pressure,
 - decreasing the risk of diabetes
 - increasing bone mass
- Psychological benefits ▶ Aerobic fitness:
 - is an effective approach to combat anxiety, stress, and depression
 - may lead to an increase in self-esteem



ADDICTION - IS EXERCISE ALWAYS GOOD?

- There is a minimum level of exercise for health benefits
- Increasing levels of exercise lead to additional benefits
- “Too much” is not always good
- Excessive exercise can be harmful to both physical and mental health



Optimal range: **2.5-7.5**
hours/week

(U.S. Department of Health and Human Services, 2008; Kim et al., 2012)



When does exercise have undesirable results?

Physical activity can change from a protective factor to a risk factor:

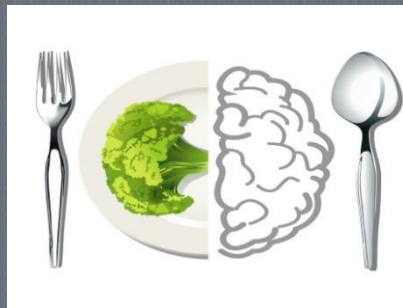
Addiction to Exercise -
Compulsive Exercise



Body Dysmorphic Disorder



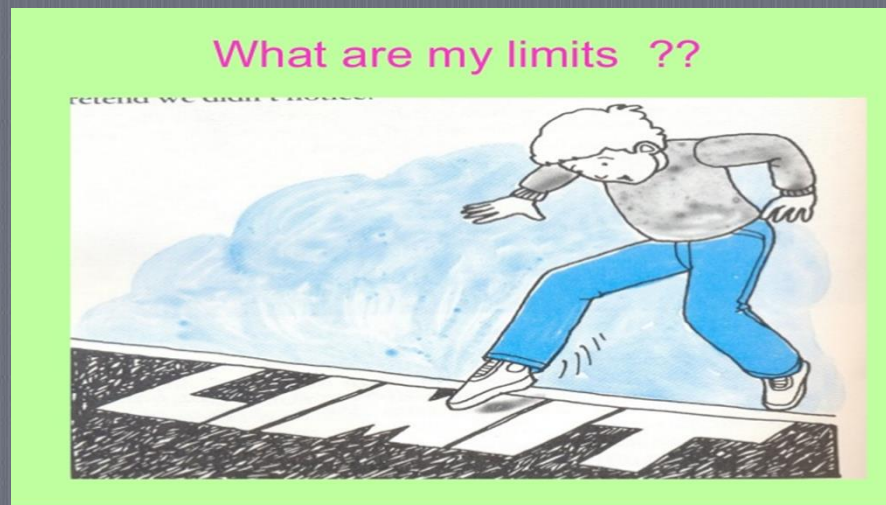
Eating Disorders



Conclusions



- Sports are good and physical activity is beneficial to health in overcoming addictions.
- However, in some cases, sports and exercise are used for other reasons than health.
- Facing the issue of exercise in muscle dysmorphia is a challenge for athletic trainers and health care providers.
- Understanding the athlete's/exerciser's condition and setting the limits is essential.



THANK YOU FOR YOUR ATTENTION !!!

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