Muscle Dysmorphia

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This paper was presented as part of the NSCA Hot Topic Series.
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In previous decades, body image, or a person's perception of their physical appearance, has been researched extensively in women. The majority of this research has focused on a preoccupation with becoming perpetually smaller to meet perceived societal standards and how these influencers may lead to a variety of self-destructive behavior patterns, such as eating disorders and obsessive exercise (12). Significantly less research has been conducted related to body image disorders in males. However, investigators have identified a growing trend in young males with another type of body image disorder on the other end of this spectrum, a new subcategory of body dysmorphic disorder (BDD) known as muscle dysmorphia (MD). Rather than attempting to become increasingly smaller, this group of individuals is concerned with achieving increasingly leaner and more muscular physiques (2, 17).

MD is characterized by an overwhelming compulsion with accruing large amounts of lean mass. In 1998, Connan noted that most individuals with MD are trying to obtain hyper-mesomorphic physiques as epitomized by some popular television and movie stars (4). As previously stated, muscle dysmorphia occurs predominantly in men, particularly those who participate in sports that focus on body size and form, such as bodybuilding (7, 13, 20). However, Parkinson and Evans revealed in a survey of 500 anabolic steroid users, 78.4% (392/500) were noncompetitive bodybuilders and non-athletes, suggesting that greater research into the prevalence rates of MD amongst non-athletic populations may be of value (14).

Individuals with MD are preoccupied by compulsive and irrational thoughts regarding their perceived small musculature despite actually displaying high levels of muscular development (3). This preoccupation can cause significant psychological distress, which may lead to increased mood, social, and anxiety disorders in this population (21). In fact, 58% of individuals with MD reported a lifetime history of major depressive and/or bipolar disorder (13).

According to Olivardia, Pope, & Hudson, men with MD frequently described shame, embarrassment, and impairment of social and occupational functioning in association with their condition (13). This condition has also been shown to cause clinically significant distress and/or social and occupational impairment. In fact, it is not uncommon for individuals with MD to frequently miss important social, occupational, and/or recreational activities because of a compulsive need to maintain a specific workout and dietary schedule. However, those suffering from anorexia nervosa (AN) typically develop pathological patterns of eating with secondary pathological exercise habits (6). Individuals with MD focus on altering their body shape primarily via exercise, especially resistance training, with a secondary emphasis on diet (16, 17). As a result, many of those with MD often feel compelled to sever personal relationships and turn down professional opportunities and job promotions in order to devote more time to their highly structured and time consuming training regimens. In extreme cases some individuals leave the workforce entirely to alleviate interference with their rigid workout programs (17).

While diet is usually emphasized secondary to exercise, disordered and idiosyncratic patterns of eating are common for those with MD. According to Schnirring, idiosyncratic eating patterns generally consist of extremely high protein and low fat diets (19). In addition, Muller et al. found that some weightlifters paradoxically over dieted, much like those with AN, in order to become leaner while lifting weights to become larger (14).

Despite their extreme efforts, many individuals with MD strive to attain physique transformations that are genetically impossible through diet and exercise alone. For this reason supplement use and pharmacological interventions, especially in the form of anabolic androgenic steroids (AAS), are commonly used in this population to attain greater levels of muscularity and size (2,9).

Causes

In the last 30 years there appears to have been a cultural shift in what is considered the ideal male body image. Many hyper-masculine models and entertainers, such as those featured in professional wrestling, movies, and on the covers of popular fitness magazines, are revered by many males and our society as the epitome of physical attractiveness and masculinity. While the reasons for this shift are likely multi-factorial, many researchers blame the media for placing an increased emphasis on muscular images of men on television shows, advertisements and in magazines (1, 8).

Researchers have also observed profound morphological changes over the last 30 years in many of the most popular action figures marketed to young boys. In a study conducted by Pope et al., the popular male action figures were examined to determine whether changing ideals of male body image were reflected in these toys (18). The findings indicated a significant increase in size for the measured body parts from GI Joe (1973) to GI Joe (1998). In fact, the chest increased in size from 44.4 inches to 54.8 inches and the biceps increased from 12.2 inches to 26.8 inches. When the action figure's height was extrapolated to 70 inches, the authors reveal that many of these figures were larger than the largest bodybuilders that have lived. It was also found that while waist circumferences actually increased in size from an average of 31.7 inches to 36.5 inches, the authors noted that the abdominal area showed significantly more definition when compared to earlier models of the action figures. It was also found that Stars Wars action figures also acquired impressive gains particularly in the shoulder and chest areas.

It is difficult to determine a cause and effect relationship between exposures to these idealized male body images portrayed in the media and in male action figures. However, the research conducted Leit, Gray, and Pope demonstrated that decreases in body image satisfaction did occur in college-aged males after an acute media exposure (8). It is therefore reasonable to assume that continuous exposure to these images over time may have a negative impact on male body image satisfaction. However, it is likely that those with MD may have underlying psychological issues and/or disorders that cause a propensity to gravitate toward more extreme behaviors when combined with environmental influences.

Health Consequences

Individuals who regularly engage in the types of behaviors associated with MD may significantly increase their risk of morbidity and mortality. Some health risks associated with this condition include musculoskeletal injuries from overtraining, increased risk of cardiovascular disease, kidney failure, steroid abuse, drug addiction, eating disorders, infections, and disease from the use of dirty and/or shared needles, and even death (9, 14, 18).

Diagnosis

Since most individuals with MD appear physically healthy it is often difficult to determine who is afflicted by this condition. It is important to understand that MD is far more than just an enthusiasm for lifting weights or attaining a more aesthetically pleasing physique. According to Olivardia, Pope, & Hudson, individuals with MD differ dramatically from normal weightlifters, most of whom display little psychopathology (13).

Olivardia et al. (13) have proposed diagnostic criteria for MD. According to the authors, for a person to be diagnosed with MD all of the following criteria must be met:

1. Preoccupation with the idea that one's body is not sufficiently lean and muscular. Characteristic behaviors include long hours of weight lifting and excessive attention to diet

2. The preoccupation is manifested by at least 2 of the following 4 criteria:

   a. The individual frequently gives up important social, occupational, or recreational activities because of a compulsive need to maintain his/her workout and diet schedule.

   b. The individual avoids situations in which his/her body is exposed to others, or endures such situations with distress or intense anxiety.

   c. The pre-occupation about the inadequacy of body size and musculature causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

   d. The individual continues to workout diet, or use ergogenic substances despite knowledge of adverse physical or psychological consequences.

3. The primary focus of the pre-occupation and behaviors is on being too small or inadequately muscular, as distinguished from fear of being fat in anorexia nervosa, or a primary pre-occupation only with other aspects of appearance as in other forms of BDD.

Several assessment tools have been developed for the purpose of predicting individuals at risk for developing and exhibiting behaviors associated with MD (6). Mayville et al. developed the Muscle Appearance Satisfaction Scale (MASS) (10). The MASS measure contains factor content, such as bodybuilding dependence, muscle checking, substance use, injury, and muscle satisfaction. Another MD specific test, the Muscle Dysmorphia Inventory developed by Pope et al, uses a 6-factor structure to access MD risk and symptomology that includes body size/symmetry, supplement use, exercise dependence, pharmacological use, dietary behavior, and physique protection.

Treatment Options

Often people with MD fail to seek appropriate treatment because they do not consider themselves ill or often experience shame or embarrassment regarding the issue. Some admit they are afraid that if they give up the drugs and exercise, they will wither away to frailty. Typically the largest issue is convincing an individual with MD they need help (9). In order to be treated, MD individuals must first overcome ignorance to the problem or any associated feelings of shame and embarrassment (5). Thus, strength and conditioning professionals, athletic trainers, physical educators, and health care professionals may have a responsibility in aiding individuals to recognize the difference between an enthusiasm for weightlifting and physical improvement versus a self-destructive obsession. It may be beneficial to help individuals with MD focus on the problems caused by their behaviors, such as lost relationships and physical harm, rather than just the behaviors alone.

Currently, no specific programs have been developed to help those with MD. At this time those who use anti-depressive medications alone (15) or in conjunction with cognitive-behavioral therapy may experience decreased symptoms of MD and BDD (11, 19). According to Dawes & Mankin (5), "Successful intervention requires a multidisciplinary approach combining medical, nutritional, and psychological professionals." Knowledge of local support groups and/or professionals who work with patients that have body dysmorphic disorders, such as anorexia nervosa, will allow you to make appropriate referrals in order for these individuals to seek treatment."

If you suspect an individual suffers from MD, it is advised to approach them in a nonconfrontational manner in a private setting. The following questions are suggested discussion points for talking with the individual (9):

Social Avoidance Questions

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

Time Questions

1. What portion of each day do you spend grooming yourself?

2. How much time is spent daily on exercises with the specific intent of bettering your appearance rather than improving your performance in sport?

3. How much of your day is taken up with actively worrying about your appearance?

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-carbohydrate, low-fat, or high-protein) 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?

3. Have you taken any 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 over exercising 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?

If the individual begins to question their diet or exercise regimen or admits they have a problem and would like to seek treatment, help them locate a trained sports psychologist who can assist them in working on treatment options. If the individual you suspect is a team athlete, consider speaking with their team doctor for further guidance and consider following the same model that you would for a patient with an eating disorder.

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