

Editorial Commentary: How to Treat the Overweight Pediatric Patient



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Abstract: Obese pediatric patients that incur an anterior cruciate ligament tear have an increased risk of an irreparable meniscal tear. Nevertheless, these patients should be treated the same as normal weight patients because they can do very well with standard anterior cruciate ligament reconstruction techniques and appropriate postoperative physical therapy as well as a delayed return to sports of at least 9 months. Obesity is an ever-increasing issue in the United States. Further work should be done to stem the rise of obesity because 1 consequence is a deleterious effect on meniscal tissue when a ligamentous knee injury occurs.

See related article on page 130

In the United States, we have seen a disturbing trend over the past couple of decades among the nation's adolescents—an increase in the obesity rate over the past 2 decades, and an increase in the rate of ACL tears. One report states an increased obesity rate from 10.5% to 20.6% in adolescents from the early 1990s to 2014.¹ At the same time, there has been an increase in the number of youth athletes tearing their anterior cruciate ligament (ACL) at a rate of 2.3% annually since 1994.² The increase in the rate of both obesity and ACL tears is alarming. Both issues could be considered a public health issue, and efforts for prevention have not succeeded. Thus, we are faced with treating increased numbers of overweight youth athletes with ACL tears. So, should they be treated any differently than the majority of the adolescents we see who incur an ACL tear?

The article by Patel, Talathi, Bram, DeFrancesco, and Ganley³ entitled “How does Obesity Impact Pediatric Anterior Cruciate Ligament Reconstruction?” gives us insight into the outcomes of overweight adolescent patients undergoing ACL reconstruction. Their findings did not find any increased graft rupture or subsequent

meniscal tears in the elevated body mass index (BMI) group versus the normal BMI group. These findings suggest that with appropriate rehab protocol and a delay of return to full athletic activities until at least 9 months, the overweight/obese patients can have as successful a return to activities as their normal weight counterparts.

There are numerous elements revealed in this article that are worth delving into further.

The delay in return to play after ACL reconstruction in the youth athlete is a significant one. Dekker et al.⁴ found that in their population of pediatric patients (less than 18 years of age) that underwent an ACL reconstruction, an earlier return to sport activities was predictive of a second ACL injury. A slower return to sports was deemed protective. Nagelli and Hewett⁵ even advocate considering delaying a return to sports until at least 2 years postoperatively to allow for full biological and functional recovery. The biological recovery is essential and functional recovery might best be tested with a functional testing algorithm to base clinical decision making on quantitative and qualitative testing in order to make an informed decision on the safe return of an athlete to their sport. There are numerous aspects that should be looked at including the biopsychosocial, impairment testing, strength and power testing, functional testing, and patient-reported outcomes.⁶ Toole et al.⁷ found that youth athletes who returned to sports after ACL reconstruction, and met appropriate criteria for ACL return-to-play testing, did better than those who returned without meeting

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the criteria. The delay in returning the athletes to play, coupled with a standardized rehabilitation protocol, are a necessity in helping decrease the retears in these overweight athletes. The importance and benefits of a standardized physical therapy protocol in recovering from an ACL reconstruction are well understood.⁸

Another key element worth discussing from this article is the fact that the patients with an elevated BMI had a significantly higher rate of concomitant meniscal tears, and not only that, but those tears were more significant in injury with a 1.6 times higher chance of requiring meniscectomy. The issue of a higher BMI correlating with more complex meniscal tears that are not repairable has been demonstrated before in the young athlete.⁹ Additionally, this was demonstrated in the study by Newman et al.,¹⁰ who found obesity as a strong predictor of a concomitant knee injury with an ACL injury that required additional operative treatment in the adolescent athlete. The fact that the overweight patient who tear their ACL have an increased likelihood of having a significant meniscal tear that may not be repairable should not be taken lightly. The surgeon should understand this as he or she prepares for the surgery and counsels the patient and the family going into surgery. More important is the need for the advisement afterward in recommending weight loss to be helpful for the health of the knee both for now and also if an injury occurs in the future to this or the contralateral knee.

Overall, overweight and obese youth athletes with ACL tears should be approached similarly to that of normal weight athletes. Appropriate rehabilitation protocol with a delay in return to play for all young athletes will allow for more successful return. There is no reason to hurry up the return of the post-ACL patient to athletics. The bigger issue that should be looked at by all is the need for a reduction of obesity in the United States and the continued need for ACL injury prevention. The rates of obesity and also separately ACL tears continue to rise. A reduction in both will help the

youth of our country and also reduce the cost of health care for now and years to come.

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