[Letter to the Editor Response]

Dear Dr Wojtys:

Re: Etchison WC, Bloodgood EA, Minton CP, et al. Body mass index and percentage of body fat as indicators for obesity in an adolescent athletic population. *Sports Health*. 2011;3:249-252.

Drs Cardinal and Loprinzi are correct when they say that our statement "Lean mass weighs far more than fat" was erroneous. In fact, it is the density of lean muscle tissue that differentiates it from fat. The density of mammalian skeletal muscle tissue is about 1.06 kg/L.^{3,4} This density can be contrasted with the density of adipose tissue (fat), which is 0.9196 kg/L.¹ Thank you for pointing out that inadvertent misstatement.

They also noted that the error of estimation of percentage body fat might be larger in our study due to our use of a formula that matches up with a more mature group of participants. We would like to point out, as indicated by Lohman,² chemical maturity occurs between 15 and 18 years of age. Sixty-nine percent of our study participants were at or near chemical maturity. While it is imperative to compare field measurements against laboratory methods, it is not practical or feasible to use laboratory methods in mass screenings such as those that our study participants were involved in; therefore, the skinfold method becomes the method of choice in our

study's setting. It is quick and does not require fasting or special preparation to administer. We process 1200 athletes in 1 day.

In our study, skinfold measurements were done in a supervised situation, most by the senior author. Our next endeavor will be to use different formulas with this population.

We appreciate that, in principle, Drs Cardinal and Loprinzi are in agreement with the general message of this article, which is that body mass index alone is misleading. Body mass index does not measure body composition and, more often than not, is inaccurate in determining obesity in an athletic population.

Respectfully,
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The Hughston Foundation

REFERENCES

1. Farvid MS, Ng TWK, Chan DC, Barrett PHR, Watts GF. Association of adiponectin and resistin with adipose tissue compartments, insulin resistance and dyslipidaemia. *Diabetes Obes Metab*. 2005;7:406-413.
2. Lohman TG. Applicability of body composition techniques and constants for children and youths. *Exerc Sport Sci Rev*. 1986;14:325-357.
3. Méndez J, Keys A. Density and composition of mammalian muscle. *Metabolism*. 1960;9:184-188.
4. Urbanchek MG, Picken EB, Kallianen LK, Kuzon WM. Specific force deficit in skeletal muscles of old rats is partially explained by the existence of denervated muscle fibers. *J Gerontol A Biol Sci Med Sci*. 2001;56:B191-B197.