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## Are the results likely biased towards the null?

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### Keywords

pediatrics; obesity; dietary recalls

To the editor:

I read Field and colleagues' study (1) on the association of sports drinks and obesity risk among youth and young adults with great interest. Though there remains some uncertainty regarding the causative relationship between sugar-sweetened beverages (SSBs) and obesity risk, “the absence of evidence is not [always] the evidence of absence” (2). Therefore, it is perhaps wise that Field and colleagues chose to examine this association with sports beverage consumption while the literature on SSBs and obesity risk continues to grow. Having stated this, the purpose of this letter is not to challenge the merit of the research questions being addressed in this study, but to bring attention to a comment regarding the study's use of a food frequency questionnaire (FFQ) to measure beverage intake.

The authors stated that due to the use of self-reported beverage intake in their study that “there may be some measurement error, which likely bias results towards the null” (1). I agree with the authors that using a FFQ to operationalize beverage intake is a limitation of this study, but I do not fully agree that the results are likely biased towards the null. I believe that in order for all reported results to be biased towards the null, there has to be motivation for a participant to underreport their intake of all beverages measured in this study. Since sports drinks are typically marketed as an ergogenic aid (3), and endorsed in ads by some of the world's best athletes, I am not so sure that all youth in this study perceive it to be socially desirable to self-report lower amounts of sports beverage intake. If it is plausible that social approval bias can result in the overreporting of healthful foods such as fruits and vegetables (4), the same might be said for sports drinks. In other words, it could be that among some participants in this study, there is motivation to overreport sports drink consumption because of the perception that sports beverages are “healthful.” So I perceive that the direction of

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bias with regards to self-reported sports beverage intake among youth and young adults as debatable.

That said, though the authors of this study made an important contribution to the literature by examining the relationship of interest using a prospective study design, I believe that the evidence presented is far from conclusive. Hence, before suggesting any policies restricting the intake of any beverage or food that, by the way, might lead to unintentional consequences (5), I suggest that we at least do two things. First, continue to examine the relationship of SSBs (including sports drinks) and obesity risk using more objective measures of beverage intake and physical activity in randomized controlled prospective studies. Second, we should also seek to understand youth's perceptions about sports drinks.

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DL drafted, edited, and approved all components of this letter to the editor.

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What is already known about this subject:

- Consumption of sugar-sweetened beverages (SSBs) is associated with obesity risk, though the causative nature of this relationship has not been thoroughly elucidated.
- The sales of sports beverages in the US over the past 10-15 years have increased.

What this study adds:

- This letter to the editor highlights a comment made by Field and colleagues regarding the direction of bias, as it pertains to sports beverage consumption, which may not be fully accurate.
- This letter to the editor also highlights that it might be premature to suggest that policy change is warranted based on Field and colleagues' findings.