Reviewer's report

Title: Intra-abdominal fat is related to metabolic syndrome and non-alcoholic fat liver disease in obese youth

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Reviewer: Evelyn Hsu

Reviewer's report:

This paper attempts to make a contribution towards relating non-alcoholic fatty liver disease in obese to intra-abdominal fat. There is a dearth of published literature on the relationship of metabolic syndrome to NAFLD in children, so there is potential value in looking at this question.

The question that the authors ask is: Does the presence or absence of intraabdominal or subcutaneous abdominal fat relate to NAFLD in obese children. Does it relate to metabolic syndrome AND NAFLD?

There are a number of problems with the premise of this paper.

1. The authors presume that presence or absence of NAFLD can be determined by ultrasound imaging. The gold standard for diagnosis and classification of pediatric NAFLD is liver biopsy, and although ongoing studies are there to determine the best noninvasive testing, there has been an established lack of concordance between elevated ALT levels and US findings of steatosis. US findings of steatosis definitely does not equal NAFLD.

2. The authors state that IAAT is associated with metabolic syndrome, in particular insulin resistance/hyperinsulinemia as well as NAFLD. It is not clear to me that potential confounders/hyperinsulinemia were controlled for in predicting NAFLD by IAAT. How do we not know that IAAT is related to hyperinsulinemia, which is then related to NAFLD development?

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.