Author’s response to reviews

Title: Adolescent wine consumption is inversely associated with long-term weight gain: Results from follow-up of 20 or 22 years

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Author’s response to reviews:

Thank you for considering publication of our manuscript in JN. We have included in the updated script where we considered it appropriate. Reply to the comments can be seen below (@), with line numbers corresponding to the submitted manuscript.

1. Please clearly state in the discussion that causation cannot be conferred due to the nature of the study. This will reduce the risk of the results being misinterpreted as wine in teen years = long term weight management strategy.

@ This has been stated in the discussion (Line:237 – 238): “Nonetheless, the results should be interpreted with caution as causation cannot be conferred due to the nature of study."

2. Please reword the abstract to mirror what is presented in the results

abstract 'Adolescent total alcohol consumption was inversely associated with subsequent body mass index (BMI) changes into midlife, but the results were not statistically significant (P = 0.079) (β -0.14; 95% CI -0.28, 0.005).

Results: There was no significant association between alcohol consumption during adolescence and change in BMI into midlife (P = 0.079)

Abstract is currently still misleading.
@ We agree. The abstract now mirrors the result (Line: 12-13): “There was no significant association between total alcohol consumption during adolescence and change in BMI into midlife (P = 0.079) (β -0.14; 95% CI -0.28, 0.005).”

Reviewer #2: Thank you for the revision of the manuscript so that your work will contribute in the field of nutrition. Hoping that more is yet to come to clear inconsistent findings, the following points to be corrected

#1. The background in abstract as well in the body should narrate about wine consumption as long as the title is modified.

@ We have revised the background in both abstract and body.

@ In abstract (Line: 2-5): “Several studies have suggested a link the type of alcoholic beverage and body weight. However, results from longitudinal studies have been inconsistent, and the association between adolescent alcohol consumption long-term weight gain has generally not been examined.”

@ In the body (Line: 30-54): “Alcohol is considered to be a risk factor for obesity due to a high calorie content (3, 4), and because alcohol inhibits fat oxidation, which may result in accumulation of fat in adipose tissues (5). On the other hand, alcohol is also known to have a high thermogenic effect that may result in increased energy expenditure (6). Accordingly, results from previous studies examining the relationship between alcohol consumption and subsequent weight development are conflicting (7, 8, 9, 10, 11, 12, 13, 14, 15). The discrepancy in results could partly be attributed to variation in types of alcohol beverage consumed. Studies have found mixed results for wine (16, 17, 18, 19), and beer intake (20, 21, 22), while spirit intake was more consistently found to be directly related to risk of weight gain (16, 20, 23). However, these studies were primarily based on adult populations and cannot be generalized to adolescents.

Wine is reported to be one of the most frequently consumed alcoholic beverages among adolescents (24, 25). However, the evidence of a relationship between different types of alcohol during adolescent and body weight is limited. Most studies have examined total alcohol consumption, and either been cross sectional or lasted into young adulthood. Thus, it remains unclear whether adult obesity and weight gain into adulthood may be attributed to the types of alcoholic beverages consumed during adolescence. Of the few longitudinal studies conducted among adolescents, some found a direct association between high alcohol consumption and high self-reported weight gain (10, 11) while others found that adolescents with a high alcohol intake had a lower risk of becoming obese in young adulthood than adolescents with low intakes (12). Most studies, however, did not account for type of alcohol consumed.
Thus, in the present study we examined the association between intake of total alcohol and type of alcoholic beverages (wine, beer, spirit) during adolescence and subsequent weight gain until midlife. We hypothesized that adolescent total alcohol consumption, and in particular beer and spirit consumption would be directly, and wine intake inversely, associated with weight gain into midlife.”

#2. Consider the correct use of spaces particularly between words and citation. Also in the statistics part.

@ corrected

#3. Use similar font and font size sizes in the sentences and paragraphs throughout. (e.g. line 124-126, 211-212, 225-228, etc...)

@ corrected

#4. Please correct the indentation and check for the duration of follow up (line 55).

@ corrected

#5. Would you Paraphrase statement in line 118, avoiding one of the two "samples" preferably the first one?

@ paraphrased

#6. Was it SES of adolescent or their families (line 127)?

@ It’s adolescent SES (Line: 128): “All analyses were performed in a crude and an adjusted model, covariates included adolescent SES, sex, physical activity (MET score), smoking status and baseline BMI

#7. Why there's no request for ethical approval at the baseline (line 264-266)?
@ We have revised the sentence to make it clearer (line: 328-330): “According to Danish legislation, there was no request for ethical approval, nor was there a consent procedure for minors when baseline data was collected.”