Reviewer's report

Title: Stimulation of the autonomic nervous system in colorectal surgery: a randomized, placebo-controlled trial

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Reviewer: John Norrie

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Discretionary revisions

1. The authors mention (abstract) that ‘besides administration of nutrition there are other ways of stimulating the autonomic nervous system such as gum chewing’, and that ‘We have previously demonstrated that preoperative administration of lipid enriched nutrition strongly attenuates the inflammatory response’ – so are the participants – in either the gum chewing or the control (placebo) groups going to get this lipid enriched nutrition, or is it barred?

2. Also, it seems that references 8 and 9 refer to the authors demonstrating the effect of this lipid enriched nutrition in rats – perhaps worth emphasising that this is not yet proven in humans?

3. Useful to explain what comprises ‘implementation of fast-track surgical programs’ – and specifically if the result is to ‘reduce overall hospital stay by epidural analgesia, earlier nutrition and mobilisation after surgery’, has these interventions – and perhaps in particular the ‘earlier nutrition’ – had an impact on how effective gum chewing might be expected to be?

4. The authors should explain why they have chosen elective colorectal surgery, and how this technology (chewing gum) might or might not generalise to other surgical contexts?

5. The authors should explain more carefully the rationale for and the purpose of the dermal patch as placebo. This is obviously not achieving a concealment of the chewing gum – and it is not mimicking in any way the action of chewing the gum – so in what sense is it creating a meaningful or important to adjust for ‘placebo effect’? Is there any active ingredient in the patch?

6. ‘Though patients are free to chew the gum to their own liking during these periods, they are being stimulated to chew the gum as often as possible’ – not sure ‘stimulated’ is the right word – ‘encouraged’ perhaps? And what is the expected duration of chewing? And how much gum and what flavours etc are being used?

7. Are there any safety issues in these patients e.g. choking / swallowing the gum?

8. How will the authors try to ensure that the dermal patch group chew their own gum?

9. What if the participant is a habitual gum chewer prior to the surgery?
10. The sample size is not easy to follow. First, why is length of stay considered as a ‘clinical relevant outcome parameter’ – and is this just entire length of hospital stay, or is it broken down into type of stay in different wards etc? In terms of the power calculate the authors just say for ‘an alpha of 0.05 and a beta of 0.1 60 patients need to be included in each group’ – but what test are they using, what is the mean(SD) of the control group, and what is the anticipated treatment effect (what change in mean length of stay do they think they will observe)?

11. Did they consider a design in which the subjects chew gum both before and after the surgery?