



Dear Navjoyt Ladher

Thank you for your comments which we have used to improve the relevant sections. Below is a list of how we have responded to each comment. (We have also copied all these in the manuscript as comments.)

There were several areas where the new manuscript benefits from improved explanations, as you suggested. Because the word count had increased excessively, so we have also deleted a number of sentences to reduce the word count. We hope the meaning will still be clear.

Detailed responses to reviewers' comments:

[Author: Editors still don't think that there is sufficient evidence presented in the paper to frame the paper around reducing social care, and we would suggest amending the title to better capture the core message that a focus on physical activity may allow older adults to maintain independence for longer]

We have increased the evidence and made other evidence clearer, especially around social care. We have amended the title partly as suggested and made it clearer that physical activity is the important intervention. We remain convinced that reducing the need for social care is at the heart of the paper. The alternative to maintaining independence is requiring more social care. We feel that many BMJ readers will already working with more social care being needed if independence is reduced, but we have also strengthened the section on need for social care in the paper.

Title was: THE NEED FOR SOCIAL CARE MAY BE PREVENTABLE, NOT INEVITABLE

We have changed the title to: A FOCUS ON PHYSICAL ACTIVITY CAN HELP AVOID UNNECESSARY SOCIAL CARE

[Author: I think this section could be clearer on what ageing is and isn't. Please could you expand on this definition of ageing here with a couple of sentences explaining what kind of ability and resilience is reduced?]

Thank you for this. We have added the definition here of ageing, using the World Health Organization report on ageing as a reference.

[Author: can you expand here in 1-2 sentences on what the impact of sedentary behaviour is and how that fits into the big picture?]

Thank you for requesting this. We have added some sentences about sedentary behaviour, with references. We have deleted some sentences to reduce the word count.

[author: reference?]

RE: Strength and balance training reduce the risk of falls: We have added a new reference: NICE (2013) Falls in older people: assessing risk and prevention. www.nice.org.uk/guidance/cg161

[author: reference?]

We have added the World Health Organization report on ageing as a reference.

[Author: what kind of physical activity? As a general point, it would be helpful to somewhere define what you mean by physical activity – is all exercise equal e.g. cardiovascular versus resistance exercise? Is there any evidence to support a particular kind of physical activity? how does walking the dog compare vs strength training vs yoga/pilates vs completing triathlons? More detail is needed on this. I suggest developing the discussion in the paragraph below to cover these points.]

We have added some definitions of Physical Activity, exercise and physical fitness. We have also paraphrased the Chief Medical Officer's guidance, for 150 minutes per week of moderate exercise and twice per week of balance and strength. We have provided explanation about this, including that any activity that gets a person slightly out of breath is contributing.

[Author: again, relating to the point above – what kinds of physical, mental and social activity?]

We hope that now we have been clearer in preceding paragraphs, this should be clear, without further expansion.

[Author: irrespective of age?]

This is irrespective of age. We have added 'at all ages' to the text.

[Author: how many people are affected by deconditioning syndrome, and what impact does it have? Is there evidence that can be cited here?]

We have now cited evidence, and included the impact.

[Author: It seems unfair to single out GPs here. Perhaps you could comment here on the opportunities and services available in primary and secondary care for GPs and hospital teams to help patients improve their fitness? (leading on to the next section on structural changes)]

Agreed. We have changed this to Health Professionals.

[Author: are there any specific changes targeted at older adults in particular?]

The ones we have listed are best, around walking (safer streets). We have added 'especially older adults'. In the long-term, it would be useful for young and middle-aged people to develop a habit of exercise and keep this up throughout the life-course, to retain health and independence when older.

[Author: does starting activity make a difference at any age and fitness level? Is there a threshold after which it's difficult/impossible to regain fitness?]

Yes, it makes a difference at all levels. There is no clear threshold beyond which one should not try. Fitness will always improve to a greater or lesser extent.

[Author: Is there evidence to support this? I think the uncertainty needs to be clearer here]

We have re-written this section to make it clearer, using evidence from papers already in the reference list. We have tried to clarify the two main uncertainties. Firstly, the total cost of social care is not clearly known, because of the extent of informal care (only £19 billion is measured, but the total amount is probably over £100 billion and we have referenced this). Secondly, the total financial benefit from increased physical activity is not certain, since only a minority of people will take it up. We present evidence that the mean cost of social care increases 3-fold between ages 65 and 85 and separately that it is possible to reverse a lack of fitness and 'drop a decade' in the need for social care. We have modified the wording to read: 'The value to society of even modest improvements in fitness could be measured in £billions per year.' We feel that this is reasonable and conservative, considering the monetary value of this sector, the numbers of older people who do very little exercise now and the scale of improvements possible for some individuals.

We would be delighted to continue working with you if any further changes are required.

We look forward to hearing from you

With best wishes

Scarlett McNally and co-authors