

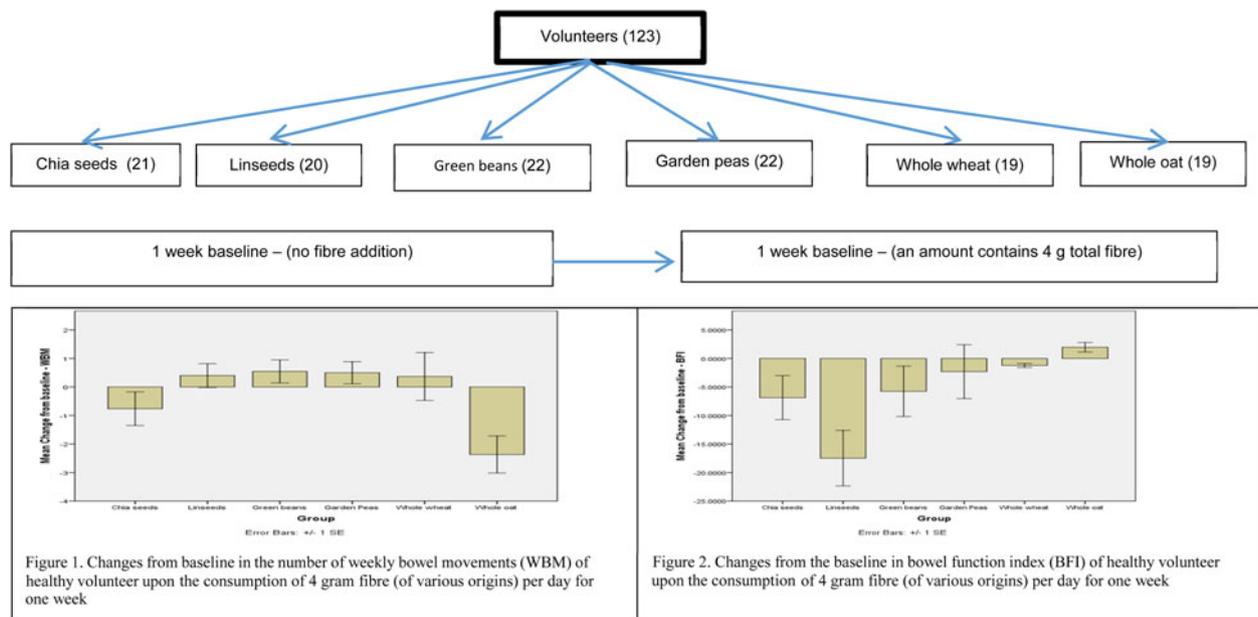
Effect of the source of dietary fibre on bowel function of healthy volunteers

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Dietary fibre has been demonstrated to have a protective role against various diseases from constipation to cancer as well as cardiovascular disease regardless of the solubility (soluble vs non-soluble), and the WHO recommendation is that this classification should be obsolete. Additionally, the current public health advice is a quantitative one, and it does not take into account the source of fibre. However, as complex carbohydrates differ in structure and biological role among different plant species, and the chemistry of carbohydrate is less well-defined compared to that of proteins and fats, we hypothesise that the source of fibre matters. Therefore, the aim of this study was to test the effect of the source of fibre on bowel function.

In pre-post repeated measure design with 6 six groups, 19–22 healthy adult volunteers within each group consumed 4 grams of fibre originated from either chia seeds, linseeds, green beans, garden beans, whole wheat or whole oat at breakfast for one week. The participants were asked to fill a daily evaluation questionnaire during the intervention week as well as during a baseline week prior to the start of the intervention. Participants were advised not to change any dietary habits or lifestyles except the intervention fibre intake. The weekly bowel movements (WBM) and the bowel function index (BFI) score were recorded at baseline and during the intervention. The changes from the baseline in both variables are shown in figure 1 and 2. Analysis of Variance followed by Tukey HSD test for multiple comparisons were performed using SPSS version 19.



Significant differences were observed in both the WBM and BFI between the six fibre sources. Multiple comparisons tests showed that whole oat and chia seeds fibres had the lowest impact on bowel movements. On the other hand, green beans, garden pea, whole wheat, and linseeds significantly increased WBM compared to whole oat but not compared to chia seeds. For TBF, (0 represents free of symptom and 100 represent maximum difficulty), linseeds group had the lowest score and whole oat had the highest score.

The study shows that although the amount of fibre was the same between groups, the effect on bowel health maybe different. Further studies with various sources of fibre intake accompanied with gut microbiota profiling are planned to elucidate how the source of fibre matters.

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