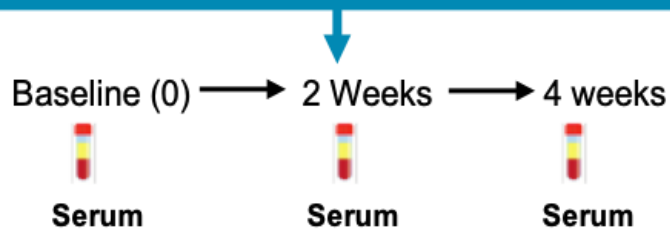


**Table S1.** Composition of investigational Oat product compared to the isocaloric placebo rice flower control.

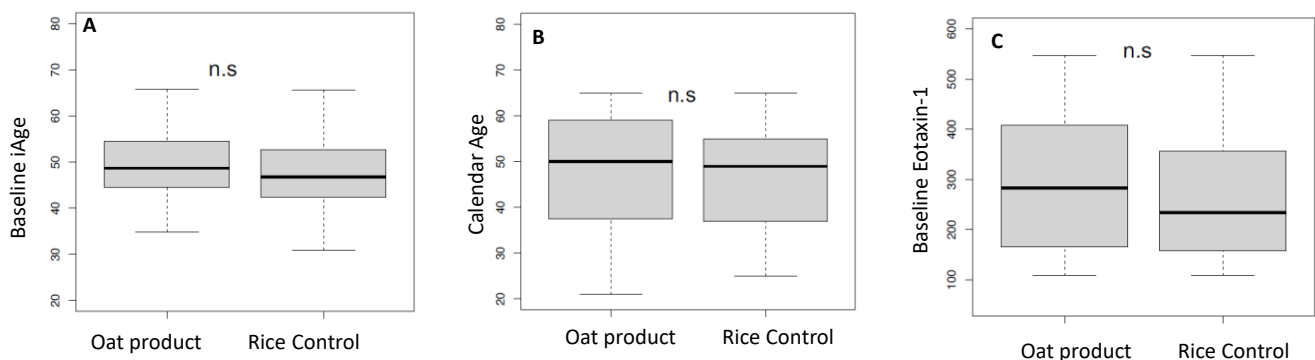
|                             | Oat product (SoluOBC) | Rice Ctrl (PCB) |
|-----------------------------|-----------------------|-----------------|
| Weight (g)                  | 23                    | 22              |
| Energy (kcal)               | 83                    | 81              |
| Total fat (g)               | 1                     | 1               |
| Saturated fat (g)           | 0                     | 0               |
| Total carbohydrates (g)     | 17                    | 18              |
| Available carbohydrates (g) | 14                    | 16              |
| Total fiber (g)             | 2                     | 0.3             |
| Beta-Glucan (g)             | 1                     | 0               |
| Avenanthramides (mg)        | 0.38                  | 0               |
| Total Phenolics (mg)        | 15.6                  | 11.4            |
| GABA (mg)                   | 0.607                 | 0.368           |
| Protein (g)                 | 2                     | 2               |

## Study Design

- RCT with 2 parallel arms
- 3g (3x1g)  $\beta$ -glucan (SoluOBC) vs. Ctrl (n=92)
- Intervention: 2 and 4 weeks

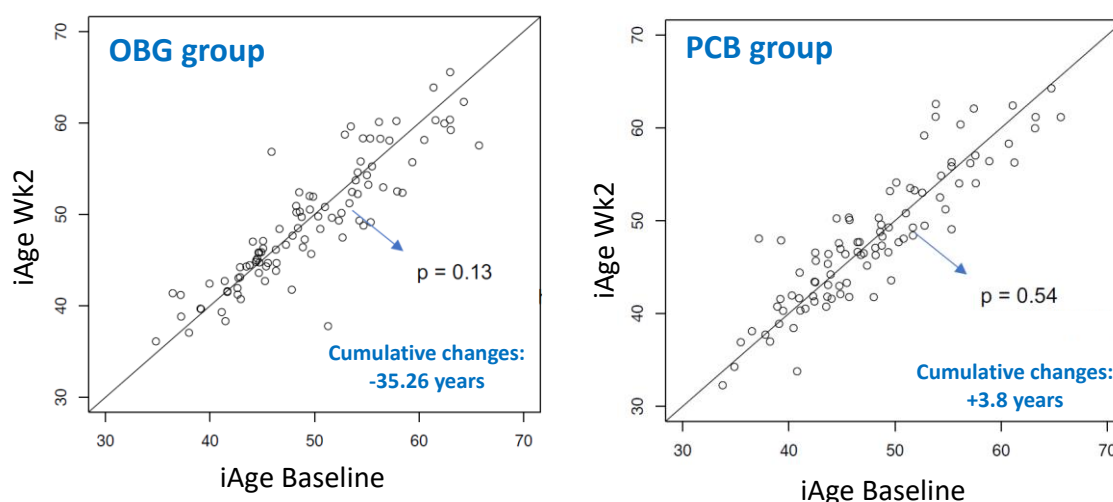


**Figure S1.** Study Design: randomized, double-blind, placebo-controlled, parallel-arm design. RCT, randomized controlled trial.

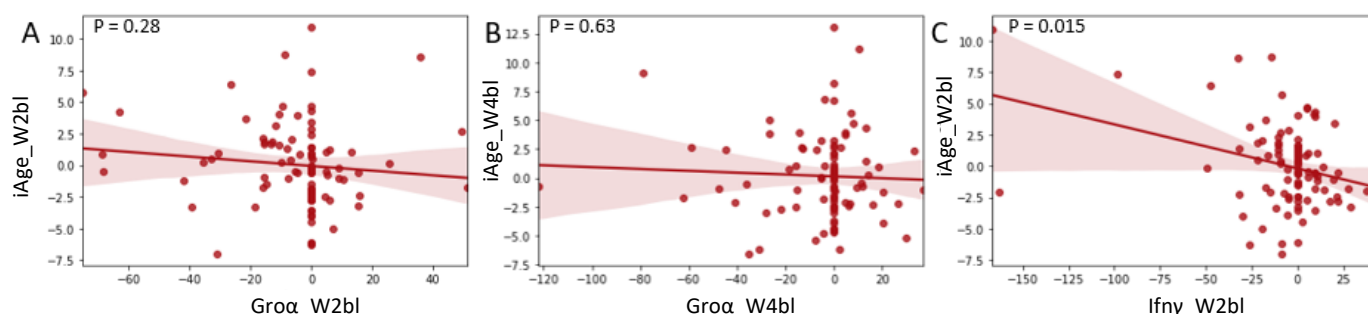


**Figure S2.** Description of the Study cohort at baseline. Healthy adults ( $n = 191$ ) with borderline high low-density lipoprotein (LDL)-cholesterol ( $3 < \text{LDL-c} < 5 \text{ mM}$ ) were randomized into the oat treatment group ( $n = 96$ ) or the rice control group ( $n = 95$ ) with average calendar age of 48 years (range 21 to 65 years old) with 38% males and 62% female. The calculated iAge (A), calendar Age (B) and

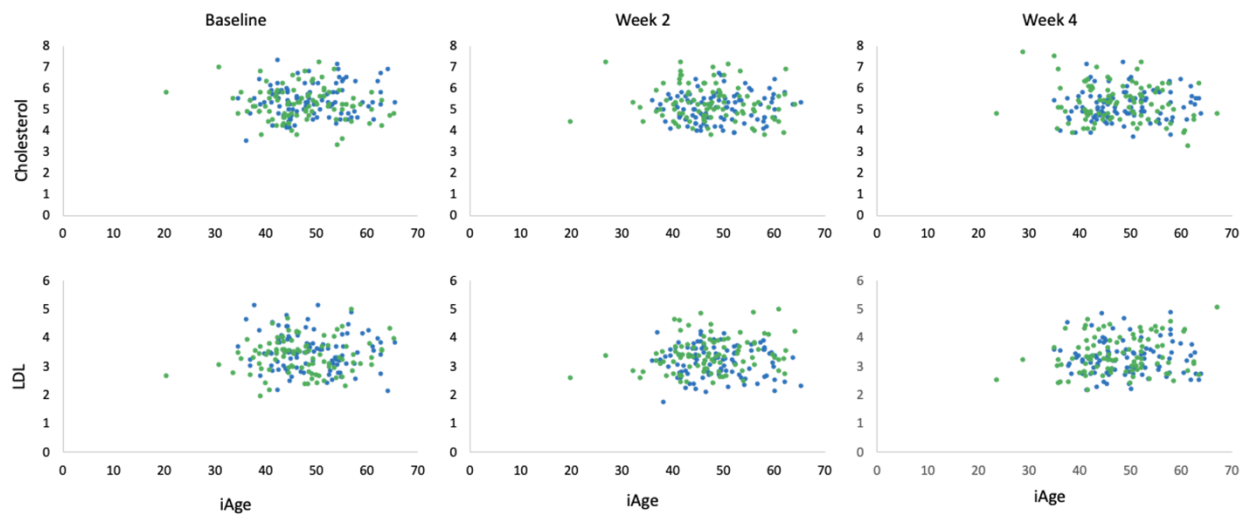
serum Eotaxin-2 protein levels (C) at baseline did not significantly differ between treatment and control groups. n.s., not specified.



**Figure S3.** The Oat product (OBG) intervention group correlates with a cumulative reduction in iAge® but not the control (PCB) group. The iAge® at week 2 after intervention compared to baseline for the whole cohort, showed an overall trend, although not significant ( $p = 0.13$ ) decrease of the iAge® (-35.26 years cumulatively) whereas the control PCB group showed no significant change (with a cumulative increase of the iAge® by 3.8 years).



**Figure S4.** Changes in IFN- $\gamma$  and Gro- $\alpha$  at weeks 2 and 4 do not impact iAge. For the placebo group, Gro- $\alpha$  significantly decreased at weeks 2 and 4 relative to baseline, and IFN- $\gamma$  significantly decreased at week 2 relative to baseline. To determine if these changes impacted SCI, the changes in these biomarkers were compared to the changes in iAge® at weeks 2 and 4. The regression statistics were obtained using scipy stats LinRegress. (A) Correlation between the change in Gro- $\alpha$  between week 2 and baseline with the change in iAge® between week 2 and baseline. (B) Correlation between the change in Gro- $\alpha$  between week 4 and baseline with the change in iAge® between week 4 and baseline. (C) Correlation between the change in IFN- $\gamma$ , between week 2 and baseline with the change in iAge® between week 2 and baseline. Though the statistics indicate the correlation coefficient is not zero, this is largely driven by outlier data points. IFN- $\gamma$ , Interferon-gamma; Gro- $\alpha$ , Growth Regulated Oncogene-alpha; SCI, systemic chronic inflammation.



**Figure S5.** iAge does not correlate with HDL or LDL cholesterol levels. Each data point represents the iAge value (x-axis) compared to overall cholesterol or LDL levels (y-axis) for each patient in the oat product (blue) or placebo (green) treated groups at baseline, week 2, or week 4. HDL, high-density lipoprotein; LDL, low-density lipoprotein.