

## SUPPLEMENTARY TEXT 7

### ACROSS TIME-POINT CHANGES OF THE DIET-RESPONSIVE TAXA IN INDIVIDUALS WITH VARIED CHANGES IN THEIR FRAILTY STATUS

Based on the changes in their frailty status across time-points, the individuals across the cohort could be divided into three groups, namely those with 'Reduced Frailty', 'No change in frailty' and 'Increased Frailty'. We then investigated the across time-point changes in these taxa. To measure whether the above trends were also reflected in the across time-point changes, for each OTU, we computed the effect-size of the time-point changes between the individuals with reduced frailty as compared to the other two groups (**See Methods**). A positive effect size change would indicate that the taxa show more positive change (that is either an increase or a relative lower decrease) in their abundance across time-points in individuals with reduced frailty (as compared to those with no change or increase in frailty), and vice-versa. In this regard, while the diet-enriched (that is the DietPositive) taxa showed significantly positive changes in the individuals with reduced frailty (as compared to the other two groups), the DietNegative group showed the opposite trend (**Supplementary figure 10b**). These findings further affirm our earlier observation of the depletion of the specific frailty-associated iBBiG module 'C' which was observed to have a negative association with diet as well as the notable increase of frail individuals in the control group. In line with these observations, in the control group, we observed a marginally significant increase (as compared to the intervention group) during the intervention period in the proportion of individuals with increased frailty (Fishers' Test  $P < 0.06$ ; **Supplementary figure 10c**).