**Online Supporting Material**

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| **Supplemental Table 1.** Associations between total and dairy subgroups and markers of glucose homeostasis among Lifelines participants without any form of self-reported diabetes, stratified for age, sex, and BMI. |
|  | Fasting plasma glucose (mmol/L) | HbA1c, % |
|  | *Per 100 gram dairy* | *Per 100 gram dairy* |
|  | β  | SD | *P* | *P* for interaction | β | SD | *P* | *P* for interaction |
| ***Total dairy (gram/day)*** |  |  |  |  |  |  |  |  |
| Age <50y  | -0.002 | 0.001 | 0.06 | 0.15 | 0.002 | 0.001 | 0.002 | 0.84 |
| Age 50-65y | -0.004 | 0.002 | 0.11 |  | 0.001 | 0.001 | 0.59 |  |
| Age ≥65y  | 0.013 | 0.005 | 0.008 |  | 0.007 | 0.003 | 0.01 |  |
| Men | -0.002 | 0.002 | 0.13 | 0.87 | 0.000 | 0.001 | 0.61 | <0.0001 |
| Women | -0.002 | 0.001 | 0.10 |  | 0.001 | 0.001 | 0.006 |  |
| BMI <25 | -0.001 | 0.001 | 0.25 | 0.83 | 0.002 | 0.001 | 0.008 | 0.02 |
| BMI 25-30 | -0.001 | 0.002 | 0.69 |  | 0.002 | 0.001 | 0.02 |  |
| BMI ≥30 | -0.004 | 0.004 | 0.22 |  | -0.001 | 0.002 | 0.64 |  |
| ***Skimmed dairy (gram/day)*** |  |  |  |  |  |  |  |  |
| Age <50y  | -0.005 | 0.002 | 0.07 | 0.25 | 0.000 | 0.001 | 0.79 | 0.25 |
| Age 50-65y | -0.005 | 0.003 | 0.11 |  | -0.004 | 0.002 | 0.02 |  |
| Age ≥65y  | 0.014 | 0.007 | 0.05 |  | 0.001 | 0.004 | 0.79 |  |
| Men | -0.002 | 0.003 | 0.49 | 0.82 | -0.003 | 0.001 | 0.05 | 0.001 |
| Women | -0.005 | 0.002 | 0.008 |  | 0.000 | 0.001 | 0.98 |  |
| BMI <25 | -0.004 | 0.002 | 0.07 | 0.31 | -0.001 | 0.001 | 0.56 | 0.27 |
| BMI 25-30 | -0.001 | 0.003 | 0.59 |  | 0.000 | 0.002 | 0.97 |  |
| BMI ≥30 | -0.008 | 0.006 | 0.18 |  | -0.004 | 0.003 | 0.26 |  |
| ***Semi-skimmed dairy (gram/day)*** |  |  |  |  |  |  |  |  |
| Age <50y  | -0.002 | 0.002 | 0.18 | 0.02 | 0.001 | 0.001 | 0.39 | 0.55 |
| Age 50-65y | 0.000 | 0.004 | 0.91 |  | 0.003 | 0.002 | 0.12 |  |
| Age ≥65y  | 0.017 | 0.007 | 0.02 |  | 0.012 | 0.004 | 0.002 |  |
| Men | -0.001 | 0.002 | 0.52 | 0.78 | 0.003 | 0.001 | 0.03 | 0.86 |
| Women | 0.001 | 0.002 | 0.66 |  | 0.003 | 0.001 | 0.02 |  |
| BMI <25 | 0.000 | 0.002 | 0.85 | 0.68 | 0.003 | 0.001 | 0.009 | 0.96 |
| BMI 25-30 | 0.003 | 0.002 | 0.26 |  | 0.004 | 0.001 | 0.005 |  |
| BMI ≥30 | 0.003 | 0.005 | 0.53 |  | 0.003 | 0.003 | 0.24 |  |
| ***Full-fat dairy (gram/day)*** |  |  |  |  |  |  |  |  |
| Age <50y  | 0.015 | 0.003 | <0.0001 | 0.19 | 0.014 | 0.002 | <0.0001 | 0.87 |
| Age 50-65y | 0.004 | 0.006 | 0.47 |  | 0.010 | 0.003 | 0.002 |  |
| Age ≥65y  | 0.034 | 0.012 | 0.004 |  | 0.013 | 0.006 | 0.04 |  |
| Men | 0.007 | 0.004 | 0.07 | 0.79 | 0.007 | 0.002 | 0.001 | 0.05 |
| Women | 0.012 | 0.004 | 0.001 |  | 0.011 | 0.002 | <0.0001 |  |
| BMI <25 | 0.004 | 0.003 | 0.19 | 0.05 | 0.007 | 0.002 | <0.0001 | 0.93 |
| BMI 25-30 | 0.006 | 0.004 | 0.14 |  | 0.009 | 0.003 | 0.001 |  |
| BMI ≥30 | 0.022 | 0.010 | 0.03 |  | 0.006 | 0.005 | 0.27 |  |
| ***Fermented dairy (gram/day)*** |  |  |  |  |  |  |  |  |
| Age <50y  | -0.003 | 0.002 | 0.06 | 0.61 | 0.003 | 0.001 | 0.01 | 0.43 |
| Age 50-65y | -0.008 | 0.003 | 0.01 |  | -0.004 | 0.002 | 0.03 |  |
| Age ≥65y  | 0.012 | 0.007 | 0.07 |  | 0.002 | 0.004 | 0.66 |  |
| Men | -0.004 | 0.002 | 0.14 | 0.69 | -0.003 | 0.001 | 0.03 | <0.0001 |
| Women | -0.006 | 0.002 | 0.001 |  | 0.000 | 0.001 | 0.77 |  |
| BMI <25 | -0.005 | 0.002 | 0.02 | 0.12 | 0.000 | 0.001 | 0.67 | 0.08 |
| BMI 25-30 | -0.004 | 0.003 | 0.09 |  | 0.000 | 0.001 | 0.98 |  |
| BMI ≥30 | -0.007 | 0.006 | 0.25 |  | -0.003 | 0.003 | 0.32 |  |
| ***Non-fermented dairy (gram/day*** |  |  |  |  |  |  |  |  |
| Age <50y  | 0.000 | 0.001 | 0.79 | 0.04 | 0.002 | 0.001 | 0.03 | 0.10 |
| Age 50-65y | 0.001 | 0.003 | 0.83 |  | 0.004 | 0.002 | 0.01 |  |
| Age ≥65y  | 0.020 | 0.006 | 0.001 |  | 0.013 | 0.003 | <0.0001 |  |
| Men | 0.000 | 0.002 | 0.97 | 0.87 | 0.003 | 0.001 | 0.009 | 0.50 |
| Women | 0.002 | 0.002 | 0.28 |  | 0.003 | 0.001 | 0.001 |  |
| BMI <25 | 0.001 | 0.002 | 0.56 | 0.52 | 0.003 | 0.001 | 0.001 | 0.54 |
| BMI 25-30 | 0.003 | 0.002 | 0.17 |  | 0.004 | 0.001 | 0.001 |  |
| BMI ≥30 | 0.001 | 0.004 | 0.76 |  | 0.001 | 0.002 | 0.55 |  |

Models are adjusted for age (years, continuous), sex (men/women), alcohol (categorical), smoking (categorical), education (categorical), physical activity (moderate intensity exercise, days/week), total energy intake (kcal/day, continuous), the intake of energy adjusted bread, pasta, rice, potato, fruits, vegetables, legumes, meat, fish, coffee, tea, soda/fruit juice, other dairy groups (g/day, continuous), BMI (kg/m2,continuous), and waist circumference (cm,continuous).