**Supplementary Figure 1 -** Flow diagram of participation from baseline to month 12 of the GUMLi Trial data collection and analysis. Diet analyses were conducted for all participants with complete dietary data at each time point.

Randomised (n=160)

Assessed for eligibility (n= 342)

## **Enrolment**

Excluded (n= 182)

 Declined to participate (n= 182)

Allocated to Growing Up Milk-Lite (n=80)

 Received allocated treatment (n= 80)

Allocated to standard cow’s milk (n=80)

 Received allocated treatment (n= 80)

**Baseline**

n= 80 questionnaires completed at baseline

n= 80 questionnaires completed at baseline

Exclusion from analysis due to implausible energy intakes: n=0

n=80 analysed for dietary patterns at 1y

Exclusion from analysis due to implausible energy intakes: n= 3

n= 77 analysed for dietary patterns at 1 y

**Month 3**

n= 76 questionnaires completed at month 3

n=72 questionnaires completed at month 3

Exclusion from analysis due to implausible energy intakes: n=2

n=70 analysed for dietary patterns at 15mo

Exclusion from analysis due to implausible energy intakes: n=5

n=71 analysed for dietary patterns at 15mo

**Month 6**

n= 72 questionnaires completed at month 6

n= 76 questionnaires completed at month 6

Exclusion from analysis due to implausible energy intakes: n=1

n=71 analysed for dietary patterns at 18mo

Exclusion from analysis due to implausible energy intakes: n=5

n=71 analysed for dietary patterns at 18mo

**Month 9**

n=71 questionnaires completed at month 9

n= 75 questionnaires completed at month 9

Exclusion from analysis due to implausible energy intakes: n=3

n=68 analysed for dietary patterns at 21mo

Exclusion from analysis due to implausible energy intakes: n=5

n=70 analysed for dietary patterns at 21mo

**Month 12**

n= 71 questionnaires completed at month 12

n= 72 questionnaires completed at month 12

Exclusion from analysis due to implausible energy intakes: n=5

n=66 analysed for dietary patterns at 2 y

Exclusion from analysis due to implausible energy intakes: n=2

n=70 analysed for dietary patterns at 2 y

**Supplemental Table 1.** Description of food groups and food items included in the principal components analysis

|  |  |
| --- | --- |
| **Food Group** | **FFQ Food Item** |
| Baby and Toddler Foods | “Little Kids” Cheesy Ravioli, Other “Little Kids” meals, Other toddler meals, Baby rice, baby muesli e.g. Farex (from packet), Vegetable based meals, Meat based meals, Pasta or rice based savoury meals, Rice and other milk based desserts, Fruit puree, Fruit based desserts, Junior Fruit Drink |
| Bread, Pasta, Low-sugar cereal | White bread/buns (not iced), crumpets, Wholemeal or wholegrain bread/buns, Rice cakes, rice wheels, crispbreads, Weet-bix, Fruity-bix, Porridge (not instant porridge in sachet), Cornflakes, Rice Bubbles, Other breakfast cereals (less than 15 g sugar per 100 g), Rice, Canned spaghetti, Other pasta, Fruit bread/currant buns |
| Meat | Other chicken, Other fish, Tinned Fish, Oily Fish, Mince and patties, Other Meat (lamb, pork), Liver |
| Processed Meat | Chicken nuggets/shapes, Fish fingers/shapes battered/crumbed fish, Sausages, saveloys, hotdogs (including vegetarian), Ham, bacon, luncheon, Meat pies and sausage rolls |
| Eggs and Beans | Eggs, Canned beans (including baked beans), Hummus (chickpea dip) |
| Vegetables | Potato and Kumara, Frozen mixed vegetables, Carrot, Pumpkin, Green peas, Sweet corn, Broccoli and cauliflower, Green leafy vegetables (silver beet, cabbage etc.), Salad greens (e.g. lettuce, cucumber), raw tomato, Cooked tomato (pasta sauce, canned tomato), Other vegetables |
| Fruit | Canned fruit, Banana, Apples, Pears, Oranges, mandarins etc., Kiwifruit, Grapes, Berries (fresh or frozen), Dried fruit, Avocado, Other fruit |
| Milk and Milk Products | Low-fat cow’s milk (green, light blue, yellow top) as a drink, Low-fat cow’s milk on cereal or other food (not custard or sauces), Cow’s milk (blue, silver top) as a drink, Cow’s milk on cereal or other food (not custard or sauces), Other milk as a drink, Cheese (including in recipes), Yoghurt, dairy food, White sauce, Custard and other milk puddings |
| Breastmilk | Breastmilk |
| Toddler milk and infant formula | “Toddler milk”, Infant formula |
| Spreads  | Butter, Margarine,  |
| Cakes, biscuits, puddings, confectionary, sweet snacks, sweet cereals | Ice cream, Biscuits – coated (with chocolate, icing, yoghurt), Biscuits – other, Cakes, muffins, scones, slices, Croissant, sweet buns, iced bins, pastries, Puddings not yet described, Chocolate, lollies, Muesli, nut, cereal or puffed rice bars, Fruit leather, fruit strings, fruit lollipops, Other breakfast cereals |
| Sweet drinks | Fruit drinks, Ribena, cordial, sachets, Fizzy drinks (lemonade, Coke) |
| Hot chips, roast potato and kumara | Hot chips, potato shapes, roast potato or kumara |
| Savoury snacks | Crackers (wheat, rice, corn-based), Instant noodles, Crisps, corn chips, corn snacks  |
| Nutritive Drinks | Fruit juice (“fresh Up”, “Just Juice”, freshly squeezed), Flavoured milk (Milo, Quick, drinking chocolate, Up-&-GO) |

**Supplemental Table 3.** Dietary intakes assessed by the EAT FFQ (frequency of intake/day)

|  |  |
| --- | --- |
| **Food Group** | **Time point**† |
| **Baseline (N=157)** | **Month 3** **(N =141)** | **Month 6** **(N =142)** | **Month 9** **(N =138)** | **Month 12** **(N =136)** |
| **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Baby/Toddler Food** |  |  |  |  |  |  |  |  |  |  |
| Control  | 1.47 | 1.51 | 0.71 | 0.93 | 0.29 | 0.48 | 0.20 | 0.41 | 0.19 | 0.44 |
| Intervention | 1.20 | 1.24 | 0.53 | 0.84 | 0.31 | 0.44 | 0.18 | 0.28 | 0.18 | 0.32 |
| **Bread, pasta**  |  |  |  |  |  |  |  |  |  |  |
| Control  | 2.15 | 0.92 | 2.40 | 0.92 | 2.14 | 1.10 | 2.29 | 0.78 | 2.26 | 0.84 |
| Intervention | 2.25 | 0.81 | 2.28 | 0.87 | 2.17 | 1.15 | 2.28 | 0.64 | 2.33 | 0.58 |
| **Meat, fish** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.72 | 0.41 | 0.75 | 0.41 | 0.71 | 0.34 | 0.68 | 0.30 | 0.73 | 0.35 |
| Intervention | 0.85 | 0.62 | 0.77 | 0.38 | 0.76 | 0.41 | 0.66 | 0.33 | 0.79 | 0.36 |
| **Processed Meat** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.26 | 0.30 | 0.37 | 0.37 | 0.35 | 0.31 | 0.45 | 0.39 | 0.43 | 0.37 |
| Intervention | 0.29 | 0.24 | 0.42 | 0.37 | 0.47\* | 0.39 | 0.47 | 0.30 | 0.42 | 0.30 |
| **Eggs, beans** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.31 | 0.29 | 0.36 | 0.32 | 0.41 | 0.32 | 0.42 | 0.36 | 0.47 | 0.42 |
| Intervention | 0.31 | 0.29 | 0.38 | 0.32 | 0.40 | 0.35 | 0.41 | 0.34 | 0.43 | 0.34 |
| **Vegetables** |  |  |  |  |  |  |  |  |  |  |
| Control  | 2.51 | 1.34 | 2.32 | 1.29 | 2.33 | 1.12 | 2.28 | 1.12 | 2.38 | 1.19 |
| Intervention | 2.93 | 1.47 | 2.90\* | 1.50 | 3.27\*\* | 1.66 | 2.72\* | 1.30 | 2.86\* | 1.39 |
| **Fruit** |  |  |  |  |  |  |  |  |  |  |
| Control  | 2.56 | 1.04 | 2.67 | 1.20 | 3.00 | 1.27 | 3.00 | 1.20 | 3.06 | 1.35 |
| Intervention | 2.80 | 1.31 | 2.94 | 1.29 | 3.16 | 1.27 | 3.15 | 1.29 | 3.30 | 1.21 |
| **Milk, milk products** |  |  |  |  |  |  |  |  |  |  |
| Control  | 1.88 | 1.15 | 2.58 | 1.17 | 2.43 | 1.00 | 2.50 | 1.08 | 2.48 | 1.09 |
| Intervention | 2.24 | 1.46 | 2.58 | 1.04 | 2.69 | 1.00 | 2.48 | 0.86 | 2.58 | 0.98 |
| **Breastmilk** |  |  |  |  |  |  |  |  |  |  |
| Control  | 1.41 | 1.94 | 0.38 | 1.01 | 0.23 | 0.76 | 0.11 | 0.46 | 0.09 | 0.41 |
| Intervention | 1.29 | 2.24 | 0.65 | 1.49 | 0.45 | 1.20 | 0.32 | 1.05 | 0.14 | 0.52 |
| **Toddler milk & infant formula** |  |  |  |  |  |  |  |  |  |  |
| Control  | 2.14 | 1.64 | 1.97 | 0.38 | 1.94 | 0.32 | 1.94 | 0.44 | 2.03 | 0.34 |
| Intervention | 1.97 | 1.74 | 1.98 | 0.43 | 1.87 | 0.43 | 1.92 | 0.45 | 1.87 | 0.48 |
| **Spreads** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.53 | 0.52 | 0.70 | 0.53 | 0.65 | 0.44 | 0.75 | 0.45 | 0.82 | 0.42 |
| Intervention | 0.49 | 0.48 | 0.46\* | 0.43 | 0.60 | 0.52 | 0.73 | 0.58 | 0.69 | 0.43 |
| **Cakes** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.50 | 0.55 | 0.76 | 0.53 | 0.94 | 0.68 | 0.77 | 0.67 | 1.19 | 1.04 |
| Intervention | 0.72\* | 0.62 | 0.82 | 0.55 | 1.10 | 0.95 | 1.02\* | 0.64 | 1.34 | 0.84 |
| **Sweet drinks** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.01 | 0.03 | 0.01 | 0.03 | 0.04 | 0.11 | 0.07 | 0.19 | 0.13 | 0.33 |
| Intervention | 0.01 | 0.08 | 0.02 | 0.12 | 0.01\* | 0.05 | 0.04 | 0.15 | 0.04 | 0.18 |
| **Hot chips** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.09 | 0.11 | 0.12 | 0.15 | 0.11  | 0.12 | 0.12  | 0.12 | 0.15 | 0.15 |
| Intervention | 0.11 | 0.13 | 0.13 | 0.12 | 0.14 | 0.13 | 0.13 | 0.12 | 0.18 | 0.16 |
| **Savoury snacks** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.54 | 0.54 | 0.73 | 0.66 | 0.61 | 0.67 | 0.55 | 0.43 | 0.58 | 0.41 |
| Intervention | 0.43 | 0.54 | 0.52\* | 0.50 | 0.50 | 0.39 | 0.48  | 0.42 | 0.60 | 0.45 |
| **Nutritive drinks** |  |  |  |  |  |  |  |  |  |  |
| Control  | 0.03 | 0.10 | 0.08 | 0.22 | 0.12 | 0.26 | 0.13 | 0.24 | 0.23 | 0.55 |
| Intervention | 0.03 | 0.12 | 0.07 | 0.19 | 0.13 | 0.24 | 0.17 | 0.28 | 0.23 | 0.31 |

\*p = <0.05; \*\* p <0.0001

† Simple t-test or Kruskal-Wallis test was used to compare the difference between two groups.

**Supplemental Table 4.** Median (IQR) of nutrient intakes across quartiles of PCA-derived dietary pattern scores in 1 year old children at baseline for the GUMLi Trial (n=157)

|  |  |  |
| --- | --- | --- |
| **Nutrient**  | **Quartiles of dietary pattern score** | **p-value\*** |
| **Q1 (***n***=39)** |  | **Q4 (***n***=39)** |
| **Median** | **IQR** |  | **Median** | **IQR** |
| *Junk/Snack Foods* |  |  |  |  |  |  |
| Total energy intake (kJ) | 4016.6 | 3048.5-5289.4 | 5160.5 | 3883.3-6381.9 | **0.003** |
| Protein (g) | 39.9 | 31.3-52.2 | 57.0 | 37.7-73.8 | **0.010** |
| Total fat (g) | 36.6 | 28.4-46.1 | 49.3 | 33.8-64.5 | **0.006** |
| Carbohydrate (g) | 117.7 | 92.8-148.5 | 145.4 | 121.8-168.2 | **0.005** |
| Fibre (g) | 9.4 | 6.8-13.8 | 11.5 | 8.8-15.8 | 0.056 |
| Calcium (mg) | 695.3 | 415.3-857.2 | 897.0 | 594.8-1126.3 | 0.070 |
| Iron (mg) | 8.3 | 6.2-11.7 | 8.6 | 6.6-12.5 | 0.552 |
| Zinc (mg) | 7.1 | 5.6-8.6 | 7.7 | 5.8-11 | 0.133 |
| Vitamin B12 (µg) | 2.4 | 1.8-3.2 | 2.7 | 1.8-3.6 | 0.475 |
| Vitamin C (mg) | 95.7 | 64.9-126.3 | 85.2 | 56.3-120.5 | 0.481 |
| Vitamin D (µg) | 6.8 | 2.8-10.3 | 6.6 | 3.1-8.9 | 0.671 |
|  |  |  |  |  |  |
| *Healthy/Guideline Foods* |  |  |  |  |  |  |
| Total energy intake (kJ) | 4243.0 | 3357.1-4807.7 | 5068.9 | 3673.4-6296.3 | **0.026** |
| Protein (g) | 38.5 | 29.1-48.1 | 57.7 | 40.8-74.4 | **0.001** |
| Total fat (g) | 37.1 | 27.3-49 | 52.3 | 38.0-66.6 | **0.003** |
| Carbohydrate (g) | 129.7 | 101.1-151.5 | 124.3 | 95.9-155.4 | 0.869 |
| Fibre (g) | 10.0 | 7.4-12.2 | 12.1 | 9.6-16.2 | **0.005** |
| Calcium (mg) | 743.6 | 571.5-983.2 | 862.2 | 712.8-1126.3 | 0.096 |
| Iron (mg) | 8.9 | 6.4-11.6 | 9.4 | 5.8-11.7 | 0.893 |
| Zinc (mg) | 7.3 | 5.5-8.6 | 9.0 | 6.6-11.4 | **0.040** |
| Vitamin B12 (µg) | 2.4 | 1.6-2.9 | 2.9 | 2.1-3.6 | **0.010** |
| Vitamin C (mg) | 85.4 | 68.2-120.5 | 95.0 | 65.0-116.3 | 0.614 |
| Vitamin D (µg) | 6.6 | 3.1-9.7 | 6.8 | 3.6-9.6 | 0.996 |
|  |  |  |  |  |  |
| *Breastmilk/Formula* |  |  |  |  |  |  |
| Total energy intake (kJ) | 4667.5 | 4243.0-5870.5 | 3224.0 | 2632.1-4541.4 | **<0.0001** |
| Protein (g) | 46.3 | 38.3-61.8 | 35.9 | 26.9-48.1 | **0.003** |
| Total fat (g) | 45.2 | 39.0-59.6 | 32.6 | 24.4-41.6 | **<0.0001** |
| Carbohydrate (g) | 145.4 | 115.5-164.4 | 94.6 | 61.2-137.1 | **<0.0001** |
| Fibre (g) | 10.0 | 7.4-13.0 | 10.5 | 8.4-15.5 | 0.301 |
| Calcium (mg) | 939.6 | 800.3-1082.5 | 413.3 | 286.3-743.6 | **<0.0001** |
| Iron (mg) | 11.5 | 9.8-13.0 | 5.1 | 3.6-8.2 | **<0.0001** |
| Zinc (mg) | 8.7 | 7.7-10.0 | 5.0 | 4.0-7.1 | **<0.0001** |
| Vitamin B12 (µg) | 2.9 | 2.4-3.4 | 1.5 | 1.1-2.2 | **<0.0001** |
| Vitamin C (mg) | 98.3 | 76.6-126.8 | 58.5 | 44.6-91.2 | **0.0001** |
| Vitamin D (µg) | 10.1 | 8.3-11.9 | 2.0 | 1.2-3.3 | **<0.0001** |

Abbreviations: PCA, Principal Component Analysis; IQR, Inter Quartile Range

\*Kruskal-Wallis test used to compare differences in total energy intake and nutrient intakes across quartiles of each dietary pattern score. Only Q1 and Q4 are displayed in interest of table length

**Supplemental Table 5**. The effect of the intervention on key nutrient intakes per day at follow up visits

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Intervention (n=80)** |  | **Control (n=77)** | **Adjusted Difference**\* | **p-value** |
| *n* | **Mean** | **SD** |  | *n* | **Mean** | **SD** | **(95% CI)** |
| **Energy, kJ** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 4785.70 | 1580.43 |  | 77 | 4417.25 | 1368.84 |  |  |
| Month 3 | 70 | 2646.06 | 905.44 |  | 71 | 2910.40 | 697.76 | -341.45 (-606.76,-76.14) | **0.012** |
| Month 6 | 71 | 4523.03 | 1278.63 |  | 71 | 4388.94 | 1153.29 | 54.44 (-310.83,419.71) | 0.7687 |
| Month 9 | 68 | 4554.24 | 1263.38 |  | 70 | 4713.32 | 1272.74 | -219.99 (-623.34,183.36) | 0.2828 |
| Month 12 | 66 | 5214.11 | 1487.31 |  | 70 | 5189.78 | 1380.82 | 9.08 (-436.60,454.75) | 0.9679 |
| **Protein, g** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 52.29 | 22.40 |  | 77 | 45.75 | 16.17 |  |  |
| Month 3 | 70 | 23.45 | 8.85 |  | 71 | 29.25 | 8.48 | -6.61 (-9.57,-3.64) | **<.0001** |
| Month 6 | 71 | 56.87 | 19.43 |  | 71 | 59.36 | 19.32 | -3.24 (-9.29,2.81) | 0.292 |
| Month 9 | 68 | 55.25 | 16.80 |  | 70 | 64.11 | 21.37 | -9.26 (-15.55,-2.97) | **0.0042** |
| Month 12 | 66 | 65.79 | 22.40 |  | 70 | 68.95 | 21.19 | -2.70 (-9.76,4.36) | 0.4509 |
| **Total Fat, g** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 48.13 | 19.12 |  | 77 | 41.96 | 15.62 |  |  |
| Month 3 | 70 | 24.46 | 9.54 |  | 71 | 31.91 | 9.67 | -8.54 (-11.79,-5.30) | **<.0001** |
| Month 6 | 71 | 47.91 | 17.28 |  | 71 | 48.18 | 15.75 | -1.52 (-6.62,3.58) | 0.5576 |
| Month 9 | 68 | 47.99 | 16.80 |  | 70 | 52.52 | 18.00 | -5.32 (-10.98,0.33) | 0.0646 |
| Month 12 | 66 | 56.64 | 20.49 |  | 70 | 57.92 | 19.14 | -1.26 (-7.67,5.15) | 0.699 |
| **Carbohydrate, g** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 127.29 | 41.09 |  | 77 | 125.34 | 40.76 |  |  |
| Month 3 | 70 | 77.52 | 29.05 |  | 71 | 73.88 | 24.64 | 3.30 (-4.92,11.53) | 0.4283 |
| Month 6 | 71 | 104.87 | 29.72 |  | 71 | 96.34 | 27.02 | 8.22 (-0.20,16.65) | 0.0557 |
| Month 9 | 68 | 107.97 | 30.89 |  | 70 | 101.33 | 30.17 | 6.09 (-3.46,15.64) | 0.2092 |
| Month 12 | 66 | 117.97 | 33.82 |  | 70 | 113.02 | 39.20 | 5.09 (-5.86,16.05) | 0.3596 |
| **Fibre, g** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 11.52 | 4.67 |  | 77 | 10.99 | 4.14 |  |  |
| Month 3 | 70 | 4.26 | 2.32 |  | 71 | 3.97 | 2.49 | 0.17 (-0.61,0.95) | 0.674 |
| Month 6 | 71 | 6.33 | 2.38 |  | 71 | 5.64 | 2.47 | 0.61 (-0.11,1.32) | 0.0962 |
| Month 9 | 68 | 6.17 | 2.23 |  | 70 | 5.77 | 2.40 | 0.37 (-0.37,1.11) | 0.3254 |
| Month 12 | 66 | 7.16 | 2.71 |  | 70 | 6.48 | 2.98 | 0.64 (-0.24,1.53) | 0.1544 |
| **Calcium, mg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 821.32 | 376.37 |  | 77 | 762.27 | 322.74 |  |  |
| Month 3 | 70 | 710.35 | 253.88 |  | 71 | 695.30 | 246.13 | 2.84 (-75.26,80.95) | 0.9427 |
| Month 6 | 71 | 1023.13 | 375.89 |  | 71 | 961.42 | 340.03 | 50.19 (-60.72,161.10) | 0.3725 |
| Month 9 | 68 | 1029.54 | 319.10 |  | 70 | 991.69 | 341.94 | 22.75 (-85.15,130.65) | 0.6775 |
| Month 12 | 66 | 1107.64 | 370.18 |  | 70 | 1062.41 | 379.32 | 53.56 (-70.95,178.07) | 0.3965 |
| **Iron, mg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 8.61 | 3.40 |  | 77 | 8.57 | 3.59 |  |  |
| Month 3 | 70 | 7.17 | 2.16 |  | 71 | 2.48 | 1.61 | 4.71 (4.08,5.34) | **<.0001** |
| Month 6 | 71 | 9.69 | 2.84 |  | 71 | 4.52 | 1.68 | 5.22 (4.48,5.96) | **<.0001** |
| Month 9 | 68 | 9.39 | 2.30 |  | 70 | 4.72 | 1.99 | 4.78 (4.06,5.50) | **<.0001** |
| Month 12 | 66 | 10.23 | 2.65 |  | 70 | 5.61 | 2.25 | 4.81 (4.00,5.63) | **<.0001** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Intervention (n=80)** |  | **Control (n=77)** | **Adjusted Difference**\* | **p-value** |
| *n* | **Mean** | **SD** |  | *n* | **Mean** | **SD** | **(95% CI)** |
| **Zinc, mg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 8.09 | 3.07 |  | 77 | 7.29 | 2.48 |  |  |
| Month 3 | 70 | 3.64 | 1.25 |  | 71 | 3.22 | 1.03 | 0.31 (-0.06,0.69) | 0.1025 |
| Month 6 | 71 | 7.83 | 2.52 |  | 71 | 6.86 | 2.21 | 0.87 (0.14,1.59) | **0.0202** |
| Month 9 | 68 | 7.70 | 2.22 |  | 70 | 7.52 | 2.45 | 0.11 (-0.65,0.88) | 0.7703 |
| Month 12 | 66 | 8.96 | 2.83 |  | 70 | 8.24 | 2.76 | 0.74 (-0.16,1.65) | 0.1071 |
| **Vitamin B12, µg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 2.69 | 1.23 |  | 77 | 2.47 | 0.97 |  |  |
| Month 3 | 70 | 1.38 | 0.56 |  | 71 | 2.26 | 0.68 | -0.91 (-1.11,-0.71) | **<.0001** |
| Month 6 | 71 | 3.07 | 1.51 |  | 71 | 3.73 | 1.30 | -0.70 (-1.15,-0.26) | **0.0021** |
| Month 9 | 68 | 2.91 | 0.98 |  | 70 | 3.85 | 1.44 | -0.95 (-1.35,-0.55) | **<.0001** |
| Month 12 | 66 | 3.31 | 1.26 |  | 70 | 4.02 | 1.16 | -0.70 (-1.08,-0.31) | **0.0005** |
| **Vitamin C, mg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 89.04 | 39.09 |  | 77 | 90.15 | 38.59 |  |  |
| Month 3 | 70 | 60.82 | 21.96 |  | 71 | 9.38 | 8.07 | 51.12 (45.63,56.61) | **<.0001** |
| Month 6 | 71 | 57.20 | 16.95 |  | 71 | 10.40 | 13.94 | 47.09 (42.04,52.13) | **<.0001** |
| Month 9 | 68 | 59.49 | 20.81 |  | 70 | 9.64 | 9.09 | 48.45 (42.14,54.77) | **<.0001** |
| Month 12 | 66 | 60.33 | 20.08 |  | 70 | 19.04 | 41.96 | 43.85 (32.49,55.21) | **<.0001** |
| **Vitamin D, µg** |  |  |  |  |  |  |  |  |  |
| Baseline | 80 | 6.43 | 3.60 |  | 77 | 6.59 | 3.80 |  |  |
| Month 3 | 70 | 6.44 | 1.88 |  | 71 | 3.10 | 1.23 | 3.38 (2.89,3.86) | **<.0001** |
| Month 6 | 71 | 7.16 | 2.09 |  | 71 | 3.92 | 1.94 | 3.25 (2.61,3.90) | **<.0001** |
| Month 9 | 68 | 7.28 | 2.01 |  | 70 | 4.26 | 3.25 | 3.09 (2.18,4.01) | **<.0001** |
| Month 12 | 66 | 7.50 | 2.44 |  | 70 | 4.43 | 2.47 | 3.20 (2.38,4.01) | **<.0001** |

\* Repeated measures mixed model with an unstructured covariance structure, adjusting for baseline outcome and study location