Supplementary Table 1. Weight and Nutritional Profiles at baseline and week 12 for Participants Consuming either Full Nut Dose, Half Nut Dose or Muffins in the Intention-to-Treat Analysis (n=115)[*]

	Week 0						Week 12						Full Nut Dose vs. Muffins	Full vs. Half Nut Dose	Muffins vs. Half Nut Dose
	Full Nut Dose		Half Nut Dose		Muffins		Full Nut Dose		Half Nut Dose		Muffins				
	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	P-value	P-value	P-value
Body weight (kg)	80	(75.3 - 84.7)	86.2	(81.0 - 91.3)	82.9	(78.1 - 87.6)	79.7	(75.1 - 84.3)	86.5	(81.3 - 91.6)	82.9	(78.1 - 87.6)	0.611	0.147	0.603
BMI (kg/m²)	28.8	(27.4 - 30.2)	30.3	(28.6 - 31.9)	29.4	(28.1 - 30.8)	28.7	(27.3 - 30.2)	30.4	(28.7 - 32.0)	29.4	(28.1 - 30.8)	0.694	0.204	0.635
Energy (kcal)	1939	(1771 - 2107)	1963	(1779 - 2146)	1902	(1736 - 2067)	2024	(1909 - 2139)	2028	(1823 - 2234)	1871	(1690 - 2053)	0.256	0.985	0.344
Total Fat (% energy)	32.3	(29.9 - 34.7)	33.2	(31.3 - 35.0)	34.2	(32.1 - 36.3)	41.3	(39.7 - 42.8)	38.5	(36.7 - 40.3)	34.9	(33.4 -36.4)	0.000	0.014	0.001
MUFA	12.6	(11.5 - 13.8)	13.2	(12.3 - 14.1)	13.3	(12.2 - 14.4)	19.4	(18.7 - 20.1)	15.5	(14.5 - 16.4)	11.3	(10.5 - 12.2)	0.000	0.000	0.000
PUFA	6.2	(5.5 - 6.9)	6.4	(5.6 - 7.1)	6.6	(5.9 - 7.3)	9.2	(8.7 - 9.8)	9.3	(8.5 - 10.0)	9.2	(8.3 - 10.2)	0.930	0.997	0.955
SFA	9.8	(8.9 - 10.7)	10.2	(9.2 - 11.1)	10.7	(9.7 - 11.6)	9.4	(8.7 - 10.0)	10.3	(9.5 - 11.1)	10.7	(10.0 - 11.4)	0.038	0.102	0.914
Dietary Cholesterol (mg/ 1000 kcal)	145	(125 - 164)	136	(119 - 153)	153	(132 - 175)	111	(93 - 128)	125	(109 - 140)	134	(115 - 153)	0.152	0.167	1.000
Total Protein (% energy)	20.2	(18.9 - 21.4)	20.1	(18.9 - 21.3)	19.7	(18.6 - 20.8)	18.2	(17.2 - 19.2)	19.3	(18.4 - 20.2)	19.4	(18.1 - 20.6)	0.045	0.148	0.871
Plant Protein (% energy)	7.8	(6.9 - 8.8)	7.9	(7.1 - 8.7)	7.3	(6.6 - 7.9)	7.9	(7.4 - 8.4)	7.9	(7.3 - 8.4)	6.7	(6.2 - 7.2)	0.001	0.951	0.003
Available Carbohydrate (% energy)	45.4	(42.1 - 48.7)	45.1	(42.5 - 47.8)	44.3	(41.9 - 46.8)	38.9	(36.8 - 41.1)	41.2	(39.1 - 43.3)	44.2	(42.4 - 46.1)	0.000	0.119	0.018
Starch (% energy)	29.5	(27.0 - 31.9)	31.1	(25.6 - 33.6)	29.2	(26.7 - 31.6)	25.6	(23.7 - 27.3)	27.4	(25.6 - 29.2)	28.8	(27.1 - 30.5)	0.002	0.498	0.052
Total sugar (%energy)	16	(14-18)	14	(13-15)	15	(14-17)	13	(12-15)	14	(12-15)	15	(14-17)	0.011	0.300	0.338
Fiber (g/ 1000 kcal)	19	(14 - 18)	15	(13 - 17)	14	(13 - 16)	14	(13 - 15)	15	(13 - 17)	14	(13 - 15)	0.666	0.278	0.773
Alcohol (% energy)	2.2	(0.9 - 3.5)	1.6	(0.6 - 2.7)	1.8	(0.8 - 2.8)	1.7	(0.8 - 2.5)	1	(0.4 - 1.6)	1.5	(0.6 - 2.4)	0.954	0.548	0.376
Glycemic Index	55	(53 - 56)	56	(54 - 58)	55	(54 - 57)	53	(51 - 55)	55	(53 - 57)	57	(55 - 58)	0.006	0.363	0.208
Glycemic Load	120	(106 - 134)	124	(110 - 139)	117	(103 - 130)	104	(95 - 114)	115	(102 - 128)	117	(104 - 130)	0.011	0.300	0.338
Nuts (g/d)	12	(4 -20)	13	(8 - 19)	11	(6 - 16)	73	(68 - 78)	39	(33 - 45)	2	(1 - 3)	0.000	0.000	0.000

*One randomized participant did not start the study and one participant did not return a food record at week 0 or week 12 (n=115)

Supplementary Table 2. Amounts and Nutritional Analysis of Prescribed Supplements

	Energy	Total Fat	MUFA	PUFA	SFA	Dietary Cholesterol	Total Protein	Plant Protein	Total Carb	Total Fiber	Soluble Fiber	Av-Carb	Omega 3	Omega 6
Full Dose Nuts														
>2400 kcal = 100g nuts	636	58.3	32.9	16.0	6.8	0.0	16.0	16.0	20.1	8.4	1.4	11.7	1.3	14.7
1600-2400 kcal = 75g nuts	477	43.8	24.7	12.0	5.1	0.0	12.0	12.0	15.0	6.3	1.1	8.8	1.0	11.0
<1600 kcal = 50g nuts	318	29.2	16.4	8.0	3.4	0.0	8.0	8.0	10.0	4.2	0.7	5.9	0.7	7.3
Half Dose Nuts														
>2400 kcal	632	43.2	18.2	16.0	6.8	1.3	16.0	12.9	53.1	8.4	1.5	44.8	0.7	15.3
1600-2400 kcal	474	32.4	13.6	12.0	5.1	1.0	12.0	9.6	39.9	6.3	1.1	33.6	0.5	11.5
<1600 kcal	316	21.6	9.1	8.0	3.4	0.7	8.0	6.4	26.6	4.2	0.8	22.4	0.4	7.7
Muffins														
>2400 kcal = 4 muffins	629	28.1	3.5	16.0	6.8	2.6	16.0	9.7	86.2	8.4	1.6	77.9	0.0	16.0
1600-2400 kcal = 3 muffins	471	21.1	2.6	12.0	5.1	2.0	12.0	7.3	64.7	6.3	1.2	58.4	0.0	12.0
<1600 kcal = 2 muffins	314	14.0	1.7	8.0	3.4	1.3	8.0	4.9	43.1	4.2	0.8	38.9	0.0	8.0

All nutrients are expressed in grams except for Energy (expressed as kilocalorie) and Dietary Cholesterol (expressed as milligrams). Abbreviation: MUFA, monounsaturated fatty acids, PUFA, polyunsaturated fatty acids, Total Carb, total carbohydrate, Av-Carb, available carbohydrate

Supplementary Table 3. Treatment Differences and P-values in Serum Measurements in the Intention-to-Treat Analysis (n=117).

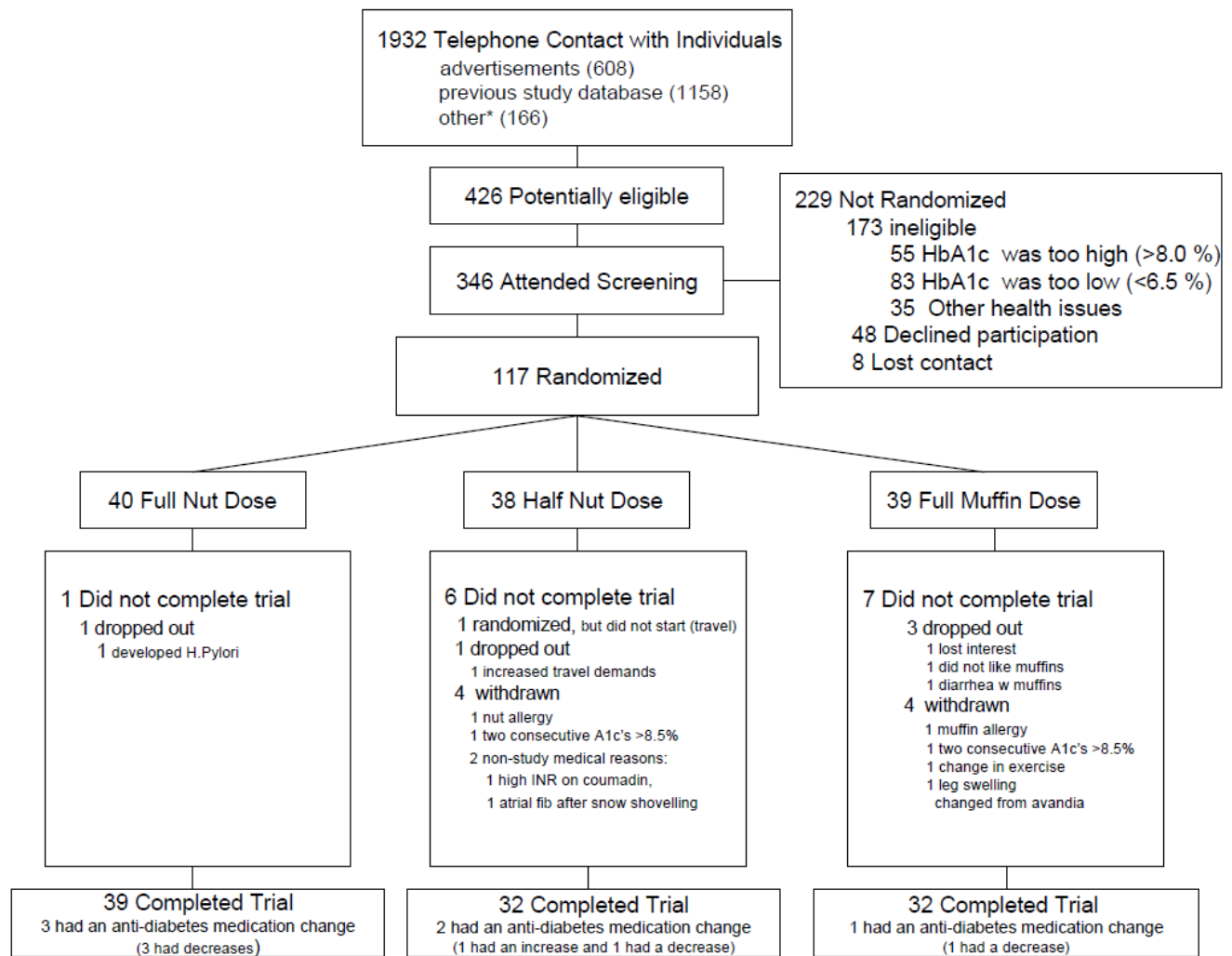**Differences between Changes from Baseline in Serum Measurements**

	Full Nut Dose vs. Muffins		Full vs. Half Nut Dose		Half Nut Dose vs. Muffins	
	Mean (95% CI)	P-values*	Mean (95% CI)	P-values*	Mean (95% CI)	P-values*
Glucose, mmol/L	-0.18 (-0.54, 0.18)	0.079	-0.17 (-0.67, 0.32)	0.304	-0.01 (-0.51, 0.50)	0.681
HbA1c, %	-0.16 (-0.30, -0.01)	0.001	-0.14 (-0.29, 0.02)	0.004	-0.02 (-0.18, 0.14)	0.863
Lipids, mmol/L						
Total Cholesterol	-0.24 (-0.44, -0.03)	<.001	-0.19 (-0.40, 0.02)	0.042	-0.05 (-0.20, 0.10)	0.203
LDL-C	-0.22 (-0.41,-0.03)	<.001	-0.16 (-0.35, 0.03)	0.123	-0.06 (-0.18, 0.05)	0.048
HDL-C	0.02 (-0.03, 0.06)	0.405	0.01 (-0.03, 0.06)	0.364	0.00 (-0.03, 0.03)	0.995
Triglycerides	-0.07 (-0.24, 0.11)	0.158	-0.10 (-0.25, 0.04)	0.064	0.04 (-0.11, 0.09)	0.97
Total Chol:HDL-C ratio	-0.23 (-0.48, 0.03)	0.006	-0.17 (-0.42, 0.08)	0.163	-0.06 (-0.21, 0.10)	0.047
LDL-C:HDL-C ratio	-0.20 (-0.42, 0.01)	0.002	-0.14 (-0.34, 0.07)	0.163	-0.06 (-0.18, 0.05)	0.013
Apo A1	-0.01 (-0.05, 0.03)	0.26	-0.02 (-0.06, 0.02)	0.249	0.00 (-0.03, 0.04)	0.976
Apo B	-0.06 (-0.11, -0.01)	<.001	-0.04 (-0.09, 0.01)	0.147	-0.02 (-0.06, 0.01)	0.012
ApoB:ApoA1	-0.04 (-0.08, 0.01)	0.004	-0.02 (-0.06, 0.02)	0.537	-0.02 (-0.04, 0.01)	0.001
Serum CRP, nmol/L	0.47 (-0.46, 1.40)	0.682	0.89 (-0.25, 2.04)	0.186	-0.42 (-1.17, 0.33)	0.042
Blood pressure, mmHg						
Systolic	-0.68 (-3.78, 2.42)	0.084	-2.76 (-6.59, 1.06)	0.005	2.09 (-1.60, 5.77)	0.274
Diastolic	-1.01 (-2.86, 0.85)	0.024	-1.25 (-3.68, 1.19)	0.021	0.24 (-1.88, 2.36)	0.888

*p-values were estimated by CONTRAST using average baseline and the difference from week 8, 10 and 12

Supplementary Figure 1. Flow of Participants through the Trial

1932 Telephone Contact with Individuals
advertisements (608)
previous study database (1158)
other* (166)

426 Potentially eligible

346 Attended Screening

229 Not Randomized
173 ineligible
55 HbA1c was too high (>8.0 %)
83 HbA1c was too low (<6.5 %)
35 Other health issues
48 Declined participation
8 Lost contact

117 Randomized

40 Full Nut Dose

38 Half Nut Dose

39 Full Muffin Dose

1 Did not complete trial
1 dropped out
1 developed H.Pylori

6 Did not complete trial
1 randomized, but did not start (travel)
1 dropped out
1 increased travel demands
4 withdrawn
1 nut allergy
1 two consecutive A1c's >8.5%
2 non-study medical reasons:
1 high INR on coumadin,
1 atrial fib after snow shovelling

7 Did not complete trial
3 dropped out
1 lost interest
1 did not like muffins
1 diarrhea w muffins
4 withdrawn
1 muffin allergy
1 two consecutive A1c's >8.5%
1 change in exercise
1 leg swelling
changed from avandia

39 Completed Trial
3 had an anti-diabetes medication change
(3 had decreases)

32 Completed Trial
2 had an anti-diabetes medication change
(1 had an increase and 1 had a decrease)

32 Completed Trial
1 had an anti-diabetes medication change
(1 had a decrease)

* Other includes – word of mouth, Diabetes clinic, postings in hospital, other studies, not indicated/unknown

SUPPLEMENTARY DATA

Supplementary Figure 2. Change in Low Density Lipoprotein Cholesterol (LDL-C) in the Intention-to-Treat

Analysis. *Significance Difference from Control (Muffin Group), P<.001