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Supplementary Table 1 Carotenoid content (μg/g consumed weight) of study foods, means (SD).

	Animal Crackers	Fruit Gummies	Dried Plums*	Dried Figs	Dried Dates	Raisin
α carotene	0.0528 (0.0024)	ND	1.76 (0.041)	0.100 (0.015)	ND	ND
β carotene	0.170 (0.011)	0.103 (0.0048)	7.58 (0.30)	0.562 (0.037)	0.139 (0.015)	0.0948 (0.025)
Lutein	0.609 (0.022)	ND	ND	0.0916 (0.021)	ND	ND
Total	0.823 (0.0093)	0.103 (0.0048)	12.87 (0.53)	0.754 (0.073)	0.139 (0.015)	0.0948 (0.025)

ND, specific carotenoid species was not detectable. *Dried plums carotenoids do not sum to total because other carotenoids were detected in plums including β-cryptoxanthin (0.425 ± 0.028 μg/g), 9-cis β-carotene (2.36 ± 0.12 μg/g), 13-cis β-carotene (0.748 ± 0.050 μg/g).

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Supplementary Table 2 Phenolic composition (µg/g consumed weight) of study foods, means (SD).

	Animal Crackers	Fruit Gummies	Dried Plums	Dried Figs	Dried Dates	Raisin
Protocatechuic acid*	ND	ND	ND	42.6 (3.5)	ND	20.4 (0.61)
Gallic acid	ND	ND	82.0 (11)	2.73 (0.77)	ND	ND
Caffeic acid	ND	77.3 (23)	2053 (199)	179 (16)	265 (5.6)	75.7 (8.6)
Ferulic acid	21.3 (1.1)	NQ	4.82 (0.65)	6.42 (0.43)	21.1 (0.21)	NQ
p Coumaric acid	NQ	NQ	2.61 (0.23)	1.11 (0.14)	7.50 (0.30)	NQ
3-Caffeoylquinic acid	ND	ND	88.0 (4.6)	2.54 (0.44)	ND	ND
Apigenin*	ND	ND	ND	10.1 (0.55)	ND	ND
Kaemfero-3-glucoside*	ND	ND	ND	ND	NQ	13.6 (1.9)
Quercetin	ND	ND	ND	1.69 (0.051)	NQ	10.5 (0.25)
Quercetin-3-glucoside*	ND	NQ	ND	NQ	58.6 (0.72)	130 (12)
Total phenolics by UPLC	21.3 (1.1)	77.3 (23)	690 (52)	243 (17)	351 (4.8)	250 (21)
Total phenolic content (µg GAE/mL)†	233 (47)	238 (81)	513 (50)	334 (70)	275 (59)	281 (22)

ND, specific phenolic compound was not detectable. NQ, below the quantification limit. *Content of protocatechuic acid, apigenin, kaemferol-3-glucoside, and quercetin-3-glucoside should be perceived as semi-quantitative values, since these phenolic compounds were not calculated based on calibration curves of the matching authentic standards. †Total phenolic content determined by Folin–Ciocalteu Assay for comparison with UPLC; note values are not corrected for background content of vitamin C and protein in fruit snacks and animal crackers, respectively.

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Supplemental Table 3 Sensitivity analysis of condition effects for variables found to differ significantly between or within conditions in intention-to-treat analysis after removing data from participants with ≥2.0 kg weight change within a condition versus baseline (control n=44, dried fruit n=45).

	Control				Dried Fruit					
	Mean	SEM	Change from Baseline	SEM	Mean	SEM	Change from Baseline	SEM	*P* for comparison of means	*P* for comparison of changes from baseline
LDL-C, mmol/L	3.02	0.14	0.06	0.05	3.06	0.14	0.06	0.05	0.47	0.91
Non-HDL-C, mmol/L	3.60	0.16	0.04	0.06	3.70	0.16	0.09	0.06	0.23	0.54
HDL-C, mmol/L	1.26	0.06	-0.03	0.02	1.25	0.06	-0.05*	0.02	0.29†	0.66
TC:HDL-C	4.2	0.2	0.1	0.1	4.3	0.2	0.2*	0.1	0.17†	0.24
LDL Particles (total), nmol/L	1138	54	37	26	1157	54	42	26	0.49	0.85
Small LDL Particles, nmol/L	677	47	44	26	682	47	39	26	0.84	0.83
Large HDL Particles, μmol/L	6.8	0.5	-0.2	0.2	6.6	0.5	-0.3	0.2	0.80†	0.56
Glucose, mmol/L	5.42	0.05	-0.01	0.06	5.53	0.05	0.12*	0.06	0.010	0.006
Brachial DBP, mmHg	78.2	1.2	2.1*	0.8	77.0	1.2	0.8	0.3	0.18	0.16
Central DBP, mmHg	79.0	1.2	2.0	0.8	77.6	1.2	0.7	0.8	0.13	0.13

Least squared means and SEM for untransformed end-of treatment-means and changes from baseline following control and dried fruit conditions. *Significant change from baseline ($P<0.05$). †Transformed means used in linear mixed model for variables with non-normally distributed residuals.

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Supplementary Table 4 Per protocol analysis of condition effects after removing data from participants with <90% reported compliance during a condition (control n=39, dried fruit n=36).

	Control				Dried Fruit					
	Mean	SEM	Change from Baseline	SEM	Mean	SEM	Change from Baseline	SEM	*P* for comparison of means	*P* for comparison of changes from baseline
Weight, kg	84.4	2.0	0.6*	0.2	84.1	2.0	0.3	0.2	0.24	0.16
TC, mmol/L	4.93	0.16	0.02	0.07	4.93	0.16	0.05	0.07	0.91	0.74
LDL-C, mmol/L	3.03	0.14	0.03	0.05	3.06	0.15	0.07	0.05	0.60	0.44
Non-HDL-C, mg/dL	3.68	0.17	0.05	0.07	3.72	0.17	0.10	0.07	0.61	0.48
HDL-C, mg/dL	1.25	0.07	-0.05	0.02	1.26	0.07	-0.04	0.02	0.77†	0.71
TC:HDL-C	4.3	0.3	0.2*	0.1	4.4	0.3	0.2*	0.1	0.65†	0.64
Triglycerides, mg/dL	1.43	0.12	0.10	0.08	1.35	0.12	0.03	0.08	0.77†	0.39
VLDL & Chylomicron Particles (total), nmol/L	54.4	4.1	-1.1	3	53.0	4.2	-2.7	3	0.90†	0.64
Large VLDL & Chylomicron Particles, nmol/L	5.1	0.8	0.9	0.7	4.9	0.8	0.8	0.7	0.22†	0.86
Medium VLDL Particles, nmol/L	21.0	2.6	-0.8	2.1	20.2	2.7	-1.5	2.2	0.93†	0.67
Small VLDL Particles, nmol/L	28.1	2.2	-1.5	2.4	27.0	2.3	-1.8	2.5	0.74†	0.91
LDL Particles (total), nmol/L	1168	59	53	30	1149	59	37	31	0.40	0.49
IDL Particles, nmol/L	171	19	-14	19	190	19	6	20	0.36†	0.18
Large LDL Particles, nmol/L	287	31	-5	23	280	32	-15	23	0.77	0.66
Small LDL Particles, nmol/L	711	54	72*	31	682	54	48	32	0.33	0.39
HDL Particles (total), µmol/L	31.7	0.9	0	0.5	31.6	0.9	0	0.5	0.78	0.96
Large HDL Particles, µmol/L	6.7	0.6	-0.3	0.2	6.5	0.6	-0.4	0.2	0.41†	0.42
Medium HDL Particles, µmol/L	8.9	0.8	0.2	0.7	9.2	0.8	0.7	0.7	0.32†	0.51
Small HDL Particles, µmol/L	16.1	0.9	0.1	0.7	15.9	0.9	-0.3	0.8	0.74	0.63
VLDL Size, nm	49.3	1.1	0.9	1.1	50.0	1.1	1.5	1.2	0.52†	0.64
LDL Size, nm	20.6	0.1	-0.1	0.1	20.6	0.1	-0.1	0.1	0.81	0.82
HDL Size, nm	9.3	0.1	-0.1	0	9.3	0.1	-0.1	0	0.50	0.57
Calculated triglyceride (total), mmol/L	1.46	0.14	0.12	0.10	1.40	0.14	0.07	0.10	0.86†	0.61
Calculated VLDL & Chylomicron TG, mmol/L	1.02	0.10	0.07	0.07	0.98	0.10	0.03	0.08	0.87†	0.60
Calculated HDL Cholesterol, mmol/L	1.27	0.07	-0.03	0.02	1.27	0.07	-0.04	0.03	0.56†	0.82
Lipoprotein Insulin Resistance Score	48	3	3	2	51	3	6*	2	0.10	0.11

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Glucose, mmol/L	5.43	0.06	0.04	0.07	5.54	0.07	0.15*	0.07	0.026	0.03
Insulin, pmol/L	41.4	3.4	0.9	3.0	45.4	3.4	5.1	3.0	0.10†	0.07
hsCRP, mg/L	2.1	0.3	0.4	0.3	2.3	0.3	0.6*	0.3	0.49†	0.31
PCSK9, ng/mL	175	14	11	14	185	15	19	15	0.33†	0.65
Clinician-assessed brachial SBP, mmHg	112.9	1.6	2.0	1.1	112.6	1.6	1.5	1.2	0.81	0.69
Clinician-assessed brachial DBP, mmHg	76.4	1.2	-0.5	0.8	76.1	1.2	-0.7	0.8	0.79	0.81
Brachial SBP, mmHg	118.9	1.7	-0.6	1.2	119.3	1.7	-0.1	1.2	0.78	0.65
Brachial DBP, mmHg	77.7	1.3	1.6	0.8	76.2	1.3	0.4	0.9	0.07	0.13
Central SBP, mmHg	109.3	1.5	-0.2	1.0	109.3	1.6	-0.1	1.1	0.98	0.92
Central DBP, mmHg	78.4	1.3	1.5	0.8	77.0	1.3	0.4	0.9	0.10	0.19
Augmentation Pressure, mmHg	7.1	0.7	-0.6	0.5	8.1	0.7	0.2	0.6	0.07	0.15
Augmentation Index, %	19.8	2	0.5	1.2	22.0	2	2.3	1.3	0.08	0.12
Pulse Wave Velocity, m/s	6.6	0.1	0.1	0.1	6.6	0.1	0.1	0.1	0.98	0.88

Least squared means ± SEM for untransformed end-of-condition means and changes from baseline for control and dried fruit conditions. *Significant change from baseline ($P<0.05$). †Transformed means used in linear mixed model for variables with non-normally distributed residuals.

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Methods for Chemical Analyses

Study foods (dried figs, raisins, dates, plums, fruit gummies, and animal crackers) were individually particlized (<0.5 mm) and portioned (100 mg/sample) for extraction procedures. Extractions and analyses were performed on five samples of each food at 6˚C.

Sugars

Extraction. Sugars were extracted in 10 mL distilled water for 30 min at 210 oscillations per minute (opm) and then centrifuged for 3 minutes at 3,500 rpm. Supernatant was collected and the extraction procedure was repeated two more times for the precipitate. Supernatant was pooled for the three extractions and diluted with distilled water to final volume of 50 mL.

Analysis. Samples were filtered by 0.45 μm cellulose acetate membrane. Sugar content was determined by HPLC with refractive index detection (Hitachi D-2000 Elite HPLC system). Separation was performed on a Rezex RCM-Monosaccharide Ca+2 (8%) column (8 μm, 7.8 mm id x 100 mm) equipped with a Carbo-Ca guard column (3.0 mm id x 4 mm). Samples were eluted statically with distilled water at a flow rate of 0.6 mL/min. Glucose, fructose and sucrose were identified by comparing retention time of sample peaks with those of authentic standards. Sugar content was determined according to calibration curves covering 0.078-100 mg/mL.

Carotenoids

Extraction: Carotenoid extraction and analysis were performed as previously described with minor modifications (Kean EG, J Agric Food Chem, 2008. 56(21): 9918). Samples were hydrated with 1 mL water, and five samples were randomly spiked with 50 μL β-apo-A to determine extraction recovery. Extraction was carried out in acetone (5 mL) for 25 min at 210 opm, followed by centrifugation for 3 min at 3,5000 rpm. Supernatant was collected and extraction was repeated once more for the precipitate by the same procedure. The resultant precipitate was mixed with 2 mL petroleum ether and oscillated for 25 min at 210 opm. The supernatant from all three extractions was pooled and dried by nitrogen flow. The extract was reconstituted in 500 μL of solvent (methanol:ethyl acetate, 50:50). Average extraction recovery was 57.8 ± 8.1 %.

Analysis. Samples were filtered by 0.45 μm cellulose acetate membrane. Carotenoids were determined by HPLC with photodiode array detection (Waters Alliance 2695 LC system equipped

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with a Waters 2998 Photodiode Array Detector). Separation was performed on a YMC C30 column (3 μm, 150 mm x 2 mm) at a flow rate of 0.37 mL/min. Samples were eluted with a gradient of 2% ammonium acetate in methanol (solvent A, pH 4.6) and ethyl acetate (solvent B) as follows: 0 min, 5% B; 3.0 min, 5% B; 8.0 min, 15% B; 9.0 min, 80% B; 13.0 min, 100% B; 13.1 min, 5% B; 17.0 min, 5% B. The elution profile was recorded at 220-600 nm upon injection (10 μL). Carotenoids were identified by comparing retention time and UV-Vis spectra of sample peaks with those of authentic standards. Carotenoid content was determined at 450 nm according to calibration curves covering 0.01-7.5 μM.

Phenolic Compounds

Extraction. Samples were hydrated with 1 mL 2% formic acid solution. Five random samples were spiked with 50 μL of ethyl gallate solution (10 μg/mL) to determine extraction recovery. Extraction was performed in 3 mL methanol solvent (formic acid: methanol: water, 2:78:20, v/v) for 25 min at 210 opm, followed by centrifugation for 3 min at 3,500 rpm. The supernatant was collected and the extraction procedure was repeated for the precipitate two more times. Supernatant from all three extractions was pooled and vacuum-dried separate the aqueous phase. The resulting aqueous solutions were subjected to solid phase extraction as previously described (Blount JW J Agric Food Chem. 2015;63(8):2233). The final phenolic extract was reconstituted in 1.0 mL 50% methanol containing 0.2% formic acid. Average extraction recovery was 93.2 ± 6.4 %.

Analysis. Samples were filtered by 0.45 μm cellulose acetate membranes. Phenolic contents were determined by UPLC-MS/MS using a Waters UPLC Acquity H Class system equipped with a TUV and TQD detector. Separation was performed on a BEH C18 column (2.1 μm, 1.7 mm id x 50 mm) at a flow rate of 0.5 mL/min. Samples were eluted with a gradient of 0.2% formic acid in acetonitrile (solvent A) and 0.2% formic acid in water (solvent B) as follows: 0 min, 100% B; 0.5 min, 94% B; 2.0 min, 91% B; 3.0 min, 87% B; 4.5 min, 65% B; 5.3 min, 100% B; 6 min, 100% B. The elution profile was recorded at 280 and 320 nm upon injection (5 μL). Phenolics were identified by comparing retention time and molecular mass of sample peaks with those of authentic standards. Phenolic content were determined according to calibration curves for gallic acid, caffeic acid, ferulic acid, 5-caffeoylquinic acid, *p* coumaric acid and quercetin covering 0.1-50 μg/mL. MS/MS conditions were as follows: ionization mode: ESI-; capillary voltage: 3.0 kV; probe temp:

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150 °C; source temp: 600°C; desolvation gas flow: 1000 L/hr; cone gas flow: 50 L/hr; collision energy: 20 V; selective ion responses were reported in Supplemental Table 6.

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Supplementary Table 6 Tandem mass spectrometry conditions for analysis of phenolic compounds.

Name	Retention time (min)	[M-H] (*m/z*)	Fragment ion (*m/z*)	Cone/Collision voltage (V)
3-Caffeoylquinic acids	1.1	353	191	28/18
Protocatecheuic acid	0.9	153	81	28/18
Caffeic acid	1.77	179	135	32/22
Ferulic acid	3.15	193	134	28/17
p Coumaric acid	2.58	163	119	30/16
Apigenin	4.57	269	117	40/32
Kaemferol-3-glucoside	3.73	593	285	42/8
Quercetin	4.28	301	151	38/20
Quercetin-3-glucoside	3.56	462	301	42/24
Ethyl gallate	2.81	197	125	30/30