Cocoa flavanol supplementation preserves early and late radial artery function after transradial catheterization

Running title: Cocoa flavanols preserve artery function

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Supplementary Information (SI):

SI Table 1:

	Placebo (*n* = 18)				Flavanol (*n* = 18)			
	baseline	-2 h	+2 h	+ 6 M	*baseline*	-2 h	+2 h	+ 6 M
primary endpoint								
intima-media thickness (mm)	0.37 ± 0.01	0.36 ± 0.01	0.37 ± 0.01	0.44 ± 0.01	0.36 ± 0.01	0.36 ± 0.01	0.36 ± 0.01	0.37 ± 0.01
intima-media thickness contralateral (mm)	0.35 ± 0.01	0.36 ± 0.01	0.36 ± 0.01	0.35 ± 0.01	0.36 ± 0.01	0.36 ± 0.01	0.37 ± 0.01	0.37 ± 0.01
secondary endpoint								
FMD (%)	8.4 ± 0.3	8.4 ± 0.5	4.3 ± 0.6	7.7 ± 0.4	9.2 ± 0.3	11.2 ± 0.5	5.9 ± 0.6	8.9 ± 0.4
Fdc (%)	2.2 ± 0.3	2.0 ± 0.3	1.3 ± 0.3	1.9 ± 0.3	1.8 ± 0.3	3.2 ± 0.3	1.7 ± 0.3	2.7 ± 0.3
FMD contralateral (%)	8.6 ± 0.3	8.5 ± 0.4	8.0 ± 0.4	8.2 ± 0.3	8.7 ± 0.3	10.9 ± 0.4	8.8 ± 0.4	8.9 ± 0.3
tertiary endpoint								
inner diameter (mm)	2.02 ± 0.09	2.06 ±0.09	2.25 ± 0.14	1.95 ± 0.10	1.83 ± 0.08	1.79 ± 0.07	1.96 ± 0.10	1.77 ± 0.08
outer diameter (mm)	2.76 ± 0.09	2.79 ± 0.08	2.98 ± 0.13	2.84 ± 0.10	2.56 ± 0.09	2.52 ±0.08	2.68 ± 0.13	2.52 ± 0.10

SI Table 1: Vascular structural and functional parameters at four time points (baseline, -2 h, +2 h, and +6 M) for the flavanol and placebo group. Values are reported as mean ± SEM; (d = days; h = hours, M = months).

SI Table 2:

	Placebo (*n* = 13)			**Flavanol (*n* = 13)**		
quaternary endpoint	Baseline	-2 h	+2 h	Baseline	-2 h	+2 h
EMP $CD31^{+}41^{-}$ (*events*/µl)	595 ± 28	585 ± 26	675 ± 27	607 ± 28	465 ± 26	628 ± 27
EMP $CD144^{+}$ (*events*/µl)	713 ± 24	746 ± 19	802 ± 35	749± 24	665 ± 19	745 ± 35
EMP $CD65E^{+}$ (*events*/µl)	618 ± 21	601 ± 25	687 ± 26	611 ± 21	539 ± 25	651 ± 26

SI Table 2: Endothelial microparticle concentrations at three time points (baseline, -2 h, and +2 h) for the flavanol and placebo group. Values are reported as mean ± SEM; (d = days; h = hours).

SI Table 3:

Parameter	Placebo	Cocoa flavanol
Daily serving size	4 capsules/day	4 capsules/day
Total cocoa flavanols (DP 1-7)[2] (mg)	nd	1,000
Total flavanol monomers[3] (mg)	nd	220
(-)-epicatechin[3] (mg)	nd	160
(+)-catechin[3] (mg)	nd	6.0
(-)-catechin[3] (mg)	nd	50
Calories (kcal)	<5	<5
Total fat (g)	<0.2	<0.2
Saturated fat (g)	<0.15	<0.15
Total carbohydrates (g)	<0.5	<0.5
Sugars (g)	0	0
Fiber (g)	<0.5	<0.5
Protein (g)	<0.1	<0.1
Theobromine (mg)	100	100
Caffeine (mg)	30	30

SI Table 3: Composition of daily cocoa flavanol and placebo interventions. The participants consumed 2 of capsules in the morning with breakfast and 2 at night with dinner. nd = not detected.

[1] Test material is not a significant source (≤1 mg/serving) of sodium, potassium, iron, magnesium, copper, manganese, phosphorous, or calcium.
[2] Analysis based on AOAC 2020.05. Cocoa flavanols includes flavanol monomers and procyanidins with a degree of polymerization (DP) up to 7 units.
[3] Analysis based on AOAC official method. AOAC 2020.05-2020 Flavanol and Procyanidin (by Degree of Polymerization).
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