Table S1. The influence of compound fish oil on the microvessels of the skin (ANCOVA analysis)

	Time	FO group	CO group	*p*
		mean±SD	mean±SD	
lg(RF)(PU)	Day 0	1.28±0.30	1.18±0.15	0.401
	Day 21	1.20±0.19	1.22±0.20	
PF(PU)	Day 0	90.67±58.22	65.95±19.91	0.317
	Day 21	73.13±28.26	74.02±29.69	
lg(RH)%	Day 0	2.48±0.25	2.49±0.23	0.708
	Day 21	2.51±0.22	2.49±0.24	
lg(TM)(s)	Day 0	1.20±0.27	1.21±0.30	0.352
	Day 21	1.22±0.22	1.26±0.30	
lg(AO)(AU×min)	Day 0	3.38±0.37	3.27±0.22	0.665
	Day 21	3.31±0.28	3.32±0.30	
lg(AH)(AU×min)	Day 0	3.34±0.32	3.33±0.21	0.265
	Day 21	3.36±0.28	3.39±0.28	
lg(AH/AO)(AU×min)	Day 0	-0.03±0.34	0.06±0.33	0.858
	Day 21	0.06±0.26	0.05±0.31	

The results of the analysis of the differences between skin endpoint groups using ANCOVA. The adjusted covariates included: sex, age, ethnicity, body mass index (BMI), duration of hypertension, use of antihypertensive medications, and dietary intakes of total energy, protein, fat, carbohydrates, total saturated fatty acids, monounsaturated

fatty acids, and polyunsaturated fatty acids, baseline values of each variable; RF, rest flow; PF, peak flow; RH, reactive hyperemia (the percentage change in the ratio of maximum blood flow after ischemia to blood flow before ischemia); TM, the time required to reach peak blood flow after ischemia; AO, opcclusion area; AH, hyperaemia area; AH/AO, the ratio of Hyperaemia area to Occlusion area; Day 0, baseline value; Day 21, final value.

Table S2. The influence of compound fish oil on blood pressure (ANCOVA analysis)

	Time	FO group	CO group	*p*
		mean±SD	mean±SD	
SBP(mmHg)	Day 0	143.25±17.46	146.91±19.26	0.631
	Day 21	138.09±11.78	136.88±13.56	
DBP(mmHg)	Day 0	89.25±11.04	89.22±11.22	0.661
	Day 21	86.38±8.71	84.72±10.13	

The results of the analysis of the differences between blood pressure endpoint groups using ANCOVA. The adjusted covariates included: sex, age, ethnicity, body mass index (BMI), duration of hypertension, use of antihypertensive medications, and dietary intakes of total energy, protein, fat, carbohydrates, total saturated fatty acids, monounsaturated fatty acids, and polyunsaturated fatty acids, baseline values of each variable; SBP, systolic blood pressure; DBP, diastolic blood pressure; Day 0, baseline value; Day 21, final value.

Table S3. The influence of compound fish oil on cardiac microcirculation (ANCOVA analysis)

	Time	FO group	CO group	*p*
		mean±SD	mean±SD	
DDT(ms)	Day 0	428.78±96.58	378.28±85.73	0.396
	Day 21	443.14±111.12	397.91±89.15	
PDV(cm/s)	Day 0	31.94±5.82	32.68±7.13	0.025
	Day 21	34.27±3.95	32.54±5.60	
lg(PSV)(cm/s)	Day 0	1.28±0.07	1.30±0.07	0.300
	Day 21	1.30±0.06	1.30±0.07	
DSVR	Day 0	1.64±0.16	1.64±0.25	0.212
	Day 21	1.71±0.17	1.63±0.24	
EDV(cm/s)	Day 0	14.85±3.23	15.64±3.69	0.045
	Day 21	16.73±3.30	15.53±3.19	
RI	Day 0	0.23±0.10	0.22±0.12	0.071
	Day 21	0.17±0.12	0.23±0.12	

The results of the analysis of the differences between cardiac endpoint groups using ANCOVA. The adjusted covariates included: sex, age, ethnicity, body mass index (BMI), duration of hypertension, use of antihypertensive medications, and dietary intakes of total energy, protein, fat, carbohydrates, total saturated fatty acids, monounsaturated fatty acids, and polyunsaturated fatty acids, baseline values of each variable; DDT, diastolic deceleration time; PDV, peak diastolic velocity; PSV, peak systolic velocity; DSVR, diastolic/ systolic velocity ratio; EDV, end-diastolic velocity; RI, resistance index; Day 0, baseline value; Day 21, final value.

Table S4. The influence of compound fish oil on cerebral microvessels (ANCOVA analysis)

	Time	FO group	CO group	*p*
		mean±SD	mean±SD	
CBF(ml/100g/min)	Day 0	20.68±3.98	22.58±5.50	0.786
	Day 21	20.88±4.10	21.89±4.10	
CBF-GM(ml/100g/min)	Day 0	29.39±5.97	31.67±7.76	0.640
	Day 21	29.31±6.40	30.96±5.55	
CBF-GM-P(ml/100g/min)	Day 0	31.64±6.64	34.09±8.37	0.638
	Day 21	32.12±6.66	33.28±6.01	
CBF-WM(ml/100g/min)	Day 0	14.30±2.38	15.50±3.91	0.729
	Day 21	14.41±2.74	15.14±2.86	
CBF-WM-P(ml/100g/min)	Day 0	9.40±1.54	10.28±2.75	0.937
	Day 21	9.45±1.80	10.02±2.06	
lg(ATT)(s)	Day 0	0.15±0.02	0.16±0.02	0.365
	Day 21	0.16±0.03	0.16±0.02	
ATT-GM(s)	Day 0	1.45±0.08	1.45±0.06	0.369
	Day 21	1.44±0.06	1.44±0.06	
ATT-GM-P(s)	Day 0	1.46±0.08	1.46±0.06	0.345
	Day 21	1.45±0.06	1.45±0.05	

lg(ATT-WM)(s)	Day 0	0.16±0.04	0.16±0.03	0.880
	Day 21	0.16±0.03	0.16±0.03	
ATT-WM-P(s)	Day 0	1.46±0.13	1.47±0.13	0.842
	Day 21	1.44±0.11	1.46±0.11	

The results of the analysis of the differences between cerebral endpoint groups using ANCOVA. The adjusted covariates included: sex, age, ethnicity, body mass index (BMI), duration of hypertension, use of antihypertensive medications, and dietary intakes of total energy, protein, fat, carbohydrates, total saturated fatty acids, monounsaturated fatty acids, and polyunsaturated fatty acids, baseline values of each variable. CBF, cerebral blood flow; CBF-GM, standard-segmentation-based gray matter cerebral blood flow; CBF-GM-P, high-purity-segmentation-based gray matter cerebral blood flow; CBF-WM, standard-segmentation-based white matter cerebral blood flow; CBF-WM-P, high-purity-segmentation-based white matter cerebral blood flow; ATT, arterial transit time; ATT-GM, standard-segmentation-based gray matter arterial transit time; ATT-GM-P, high-purity-segmentation-based gray matter arterial transit time; ATT-WM, standard-segmentation-based white matter arterial transit time; ATT-WM-P, high-purity-segmentation-based white matter arterial transit time; Day 0, baseline value; Day 21, final value.

Table S1.