

ヘーゼルナッツを含む高一価不飽和脂肪酸食のコレステロールとリポたんぱく質に対する効果
(The effects of diet high in monounsaturated fat from hazelnuts on plasma cholesterol and lipoproteins)

図1. 食事構成内容

成分	食事	
	ヘーゼルナッツ無	ヘーゼルナッツ有*
炭水化物 (% of total energy)	55-60	50-55
たんぱく質 (% of total energy)	12-15	12-15
脂質 (% of total energy)	25-30	35-40
飽和酸(%)	<7	<7
不飽和脂肪酸 (%)	13-15	23-25
多価不飽和脂肪酸(%)	7-8	7-8
コレステロール (mg/day)	<300	<300
食物繊維 (g/day)	25-30	25-30

ヘーゼルナッツ40g

図2. 被験者 (n: 15) (mean ± SD)

Variables	期間			
	事前	I期*(4wks)	II期**(4wks)	III期*(4wks)
年齢 (yrs)	48.5±7.9			
身長 (cm)	169.8±5.9			
体重(kg)	74.4±5.2	74.2±5.4	74.1±5.9	74.2±5.6
BMI (kg/m ²)	26.0±1.6	25.8±1.7	25.7±1.8	25.7±1.8
胴回り/Hip	0.95±0.055	0.95±0.052	0.94±0.059	0.94±0.057
体脂肪 (%)	26.1±4.5 ^(b)	26.1±5.3	23.9±4.1	23.9±3.4

* diets without hazelnut

(a) one subject is missing

** diet with hazelnut

(b) p < 0.05 (Repeated Measures ANOVA)

図3. 生活習慣

活動内容	*IEI	Duration (hr/day) (mean± SD)	Energy cost of activities (kcal/hour)
睡眠	1	8.0 ± 1.02	8
静的動作 (座る)	1.7	12.4 ± 1.44	19.9
動的動作 (立つ)	2.5	3.2 ± 1.05	7.3
歩く	3.5	1.2 ± 0.86	4.6
Total			39.8 kcal/24 hour PAL = 1.65

*EEI = Integrated energy indices.

図4. 脂質とリポたんぱく質 (Mean±SD)

	Initial (0*15)	I期* (4wks) (n:15)	II期** (4wks) (a-15)	III期* (4wks) (n:14)
AK§ mg/dL	93.9±9.9	89.5±12.2	27.5±9.1	87.6±9.1
Total cholesterol (mg/dL)	241.2±22.2	227.2±25.3	228.5±26.7	222.7±28.1
LDL-C (mg/dL)	157.3±22.8	148.3±20.3	153.2±18.8	143.4±27.6
VLDL-C (mg/dL)	33.9±1.86	30.9±1.95	26.3±1.51	28.2±1.66
HDL-C (mg/dL)	43.4±10.0	42.9±11.9	49.4±12.2	43.9±10.0
TG (mg/dL)	203.3±1.86	178.6±1.82	138.6±1.51	157.9±1.7
Apo A (mg/dL)	133.4±18.7	128.8±12.7	133.8±20.7	129.2±20.6
Apo B (mg/dL)	136.82±1.3	129.5±23.7	122.5±17.5	126.U26.8
Homosistein (umol/dL)	14.64±3.3	13.01±3.7	13.49±3.6	13.29±2.6

図5. II期(ヘーゼルナッツ食)における各被験者の脂質とリポたんぱく質の差異

T. Kolesterol (150-200 mg/dL)			
To initial	12.7 mg 4-	% 5.3 4	P= 0.05
To 1st period	1.3 t	% 0.6 T	
To 3rd period	5.8 T	% 2.6 t	
LDL-C (5-160 mg/dL)			
To initial	4.1 mg 4	% 2.62 4	
To 1st period	4.9 mg t	% 3.3 T	
To 3rd period	9.8 mg t	% 6.8 f	
VLDL-C (10-40mg/dL)			
To initial	7.6 mg 4	% 22.4 4	P= 0.004
To 1st period	4.6 mg 4	% 14.9 4	
To 3 rd period	1.9 mg 4	6.74%	
HDL-C (35-75 mg/dL)			
To initial	6.0 mg t	% 13.9 t	P= 0.05
To 1st period	6.5 mg T	% 15.2T	P= 0.002
To 3 rd period	5.5 mgt	% 12.5 f	P= 0.05
TG (10-200 mg/dL)			
To initial	64.8 mg 4	% 5.3 4	P= 0.001
To 1st period	40.1 mg4	% 0.6 4	P=0.05
To 3 rd period	19.3 mg4	% 2.6 4	
Apo A (94-178 ing/dL)			
To initial	0.4 mg T	% 0.3 t	
To 1st period	5.0 mgt	% 3.8t	
To 3rd period	4.6 mg T	% 3.5t	
ApoB (52-109rng/dL)			
To initial	14.3 mg 4	10.4 4	
To 1st period	7.0 mg 4	5.4 4	
To 3rd period	3.6 mg 4	2.9 4	

Homosistein (5-15 umol/L)			
To initial	1.2 umol 4	% 7.8 4	
To 1st period	0.48 umol t	%3.5t	
To 3rd period	0.2 umol T	% 1.5 T	
AK\$ (80-110 mg/dL)			
To initial	6.4 mg4	% 6.8 4	
To 1st period	2 mg 4	%2.2 4	
To 3rd period	0.1 mg 4	%o.i4	