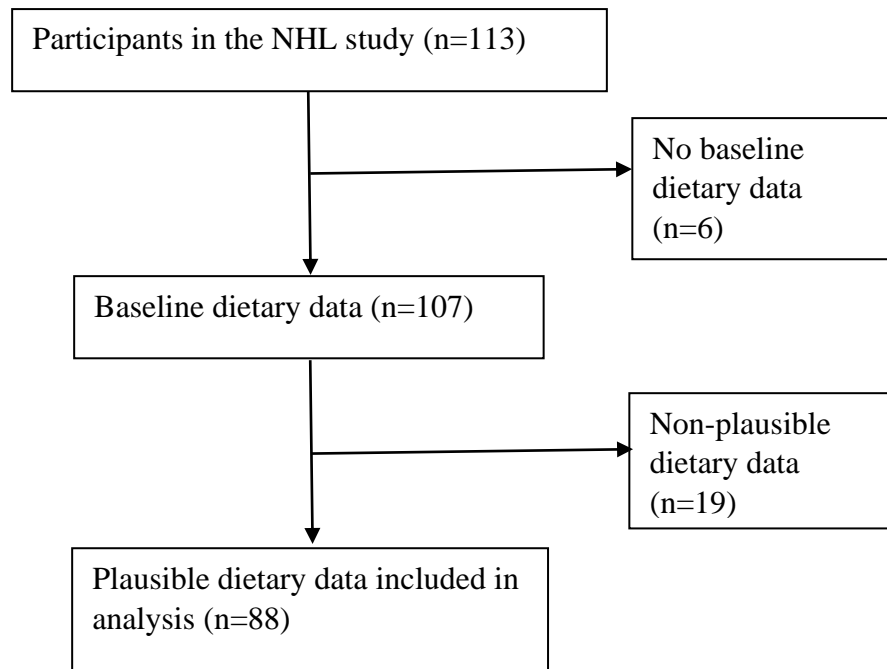**Article Title:** Associations between protein to non-protein ratio and intakes of other dietary components in a cohort aged 65-75 years: the Nutrition for Healthy Living Study

Journal name: Public Health Nutrition

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        ┌─────────────────────────────────┐
        │ Participants in the NHL study   │
        │ (n=113)                         │
        └─────────────────────────────────┘
                      │                          ┌──────────────────┐
                      │─────────────────────────▶│ No baseline      │
                      │                          │ dietary data     │
                      ▼                          │ (n=6)            │
        ┌─────────────────────────────────┐     └──────────────────┘
        │ Baseline dietary data (n=107)   │
        └─────────────────────────────────┘
                      │                          ┌──────────────────┐
                      │─────────────────────────▶│ Non-plausible    │
                      │                          │ dietary data     │
                      ▼                          │ (n=19)           │
        ┌─────────────────────────────────┐     └──────────────────┘
        │ Plausible dietary data included │
        │ in analysis (n=88)              │
        └─────────────────────────────────┘
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Supplementary Fig. S1. Flow diagram of participants

Supplementary Table S2. Participants characteristics (percentages and number of participants; median and interquartile range) of reporters and non-reporters ($n = 113$)

Characteristic	Reporters $n = 107$	Reporters $n = 6$	P[1]
Sex			0.18
Female	68 (73)	33 (2)	
Male	32 (34)	67 (4)	
Age (years)	69 (67-71)	69 (67-75)	0.79
Weight (kg)	74.4 (66.4-83.1)	68.5 (63.8-71.8)	0.22
BMI (kg/m^2)	26.9 (24.8-29.3)	24.8 (23.6-27.6)	0.69
PASE ($n = 102$)	130.0 (93.6-161.1)	63.3 (33.6-126.8)	0.61
Education Level ($n = 112$)			0.54
High	86 (92)	80 (4)	
Low	14 (15)	20 (1)	
Source of income ($n = 105$)			0.18
Age Pension only	19 (19)	50 (2)	
Other	81 (82)	50 (2)	
Marital status ($n = 112$)			0.68
Married	51 (55)	40 (2)	
Not married	49 (52)	60 (3)	
Housing arrangements ($n = 110$)			0.61
Outright owner	74 (78)	60 (3)	
Other	26 (27)	40 (2)	
Country of Birth ($n = 111$)			1.00
Australia/New Zealand	58 (62)	60 (3)	

Other	42 (44)	40 (2)	
Smoking status (*n* = 111)			0.16
Ex-smokers	39 (41)	0 (0)	
Never smoked	61 (65)	100 (5)	
Self-rated health (*n* = 109)			0.59
Excellent/good	83 (86)	100 (5)	
Fair/poor/very poor	17 (18)	0 (0)	
Living Location			1.00
Metropolitan	89 (95)	100 (6)	
Rural	11 (12)	0 (0)	
Ability to prepare own meals (*n* = 108)			1.00
Yes	96 (99)	100 (5)	
No	4 (4)	0 (0)	

BMI, body mass index, PASE, Physical Activity Scale for the Elderly. [1]P values were obtained using the median, chi-square and Fisher's exact tests to compare reporters and non-reporters for differences in participant characteristics.

Supplementary Table S3. Participants characteristics (percentages and number of participants; median and interquartile range) of plausible and non-plausible reporters (*n* = 107)

Characteristic	Plausible *n* = 88	Non-plausible *n* = 19	P[1]
Sex			0.61
Female	67 (59)	74 (14)	
Male	33 (29)	26 (5)	
Age (years)	69 (67-71)	71 (68-72)	0.22
Weight (kg)	72.9 (66.0-82.9)	78.6 (69.8-83.6)	0.58
BMI (kg/m^2)	27.3 (25.0-29.5)	29.2 (26.4-31.5)	0.039
PASE (*n* = 98)	128.4 (95.4-160.5)	138.7 (74.6-170.1)	0.79
Education Level			0.73
High	86 (76)	84 (16)	
Low	14 (12)	16 (3)	
Source of income (*n* = 101)			0.75
Age Pension only	19 (15)	21 (4)	
Other	82 (67)	79 (15)	
Marital status			0.21
Married	55 (48)	37 (7)	
Not married	46 (40)	63 (12)	
Housing arrangements (*n* = 105)			0.25
Outright owner	77 (66)	63 (12)	
Other	23 (20)	37 (7)	
Country of Birth (*n* = 106)			0.073
Australia/New Zealand	63 (55)	39 (7)	
Other	38 (33)	61 (11)	

Smoking status (*n* = 106)			0.44
Ex-smokers	37 (32)	32 (6)	
Never smoked	63 (55)	68 (13)	
Self-rated health (*n* = 104)			1.00
Excellent/good	82 (70)	84 (16)	
Fair/poor/very poor	18 (15)	16 (3)	
Living Location			0.12
Metropolitan	86 (76)	100 (19)	
Rural	14 (12)	0 (0)	
Ability to prepare own meals (*n* = 103)			0.14
Yes	98 (83)	89 (16)	
No	2 (2)	11 (2)	

BMI, body mass index, PASE, Physical Activity Scale for the Elderly. [1]P values were obtained using the median, chi-square and Fisher's exact tests to compare plausible and non-plausible reporters for differences in participant characteristics.

Supplementary Table S4: Associations between dietary protein to non-protein ratios with intakes of energy, nutrients, food groups, and food subgroups in unadjusted analyses, using linear regression presented as beta coefficients

Dietary Component	Low P:NP 0.19 (0.18,0.21) *n* = 29	Medium P:NP 0.24 (0.23,0.25) *n* = 30	High P:NP 0.29 (0.28,0.33) *n* = 29	As continuous variable P:NP % (each 1% increment)
Energy (kJ)*	Ref	-924.33 (-1785.20,-63.46) P = .036	-1104.17 (-1972.30,-236.03) P = .013	-69.83 (-139.37,-0.28) P = .049
Nutrients				
Protein (g/kg BW)	Ref	0.14 (-0.03,0.30) P = .10	0.26 (0.10,0.43) P = .002	0.03 (0.02,0.04) P < .001
Protein (g)	Ref	7.51 (-2.72,17.75) P = .15	20.87 (10.55,31.19) P < .001	2.18 (1.43,2.94) P < .001
Protein (%E)	Ref	3.25 (2.30,4.20) P < .001	6.44 (5.48,7.40) P < .001	0.58 (0.53,0.62) P < .001
Carbohydrate (g)	Ref	-30.22 (-53.97,-6.46) P = .013	-54.65 (-78.60,-30.69) P < .001	-3.75 (-5.69,-1.81) P < .001
Carbohydrate (%E)	Ref	-0.96 (-4.07,2.14) P = .54	-5.64 (-8.77,-2.51) P = .001	-4.10 (-0.66,-0.16) P = .002
Total fat (g)	Ref	-9.93 (-21.57,1.70) P = .093	-14.89 (-26.63,-3.16) P = .014	-1.24 (-2.16,-0.32) P = .009
Total fat %E)	Ref	-0.80 (-3.63,2.04) P = .58	-1.26 (-4.67,1.04) P = .21	-0.23 (-0.45,-0.01) P = .039
Saturated fat (g)	Ref	-4.32 (-8.60,-0.04) P = .048	-8.55 (-12.86,-4.23) P < .001	-0.72 (-1.05,-0.38) P < .001
Saturated fat (%E)	Ref	-0.32 (-1.61,0.98) P = .63	-1.98 (-3.28,-0.67) P = .003	-0.20 (-0.30,-0.10) P < .001
Linoleic acid (g)	Ref	-0.65 (-2.95,1.66) P = .58	-0.57 (-2.89,1.76) P = .63	-0.08 (-0.26,0.11) P = .41
Linoleic acid (%E)	Ref	0.00 (-0.01,0.01) P = .79	0.00 (0.00,0.01) P = .34	0.00 (0.00,0.00) P = .76
Alpha-linolenic acid (g)	Ref	-0.34 (-0.78,0.10) P = .13	-0.40 (-0.84,0.05) P = .082	-0.03 (-0.07,0.00) P = .055
Alpha-linolenic acid (%E)	Ref	0.00 (0.00,0.00) P = .56	0.00 (0.00,0.00) P = .42	0.00 (0.00,0.00) P = .26
Long chain omega-3 (mg)	Ref	184.10 (-60.11,428.32) P = .14	154.95 (-91.33,401.22) P = .21	16.65 (-2.67,35.97) P = .090
Dietary fibre (g)	Ref	-3.63 (-8.30,1.04) P = .13	-0.21 (-4.91,4.50) P = .93	-0.08 (-0.46,0.29) P = .67
Dietary fibre (%E)	Ref	-0.22 (-0.70,0.26) P = .36	0.17 (-0.32,0.65) P = .50	0.00 (-0.04,0.04) P = .96
Free sugar (g)	Ref	-22.67 (-30.85,-14.49) P < .001	-33.84 (-42.09,-25.60) P < .001	-2.36 (-3.07,-1.64) P < .001
Free sugar (%E)	Ref	-3.71 (-5.36,-2.06) P < .001	-6.05 (-7.72,-4.38) P < .001	-0.42 (-0.56,-0.28) P < .001

Alcohol (std drink)	Ref	-0.49 (-1.45,0.48) P = .32	-0.06 (-1.04,0.92) P = .90	0.00 (-0.08,0.08) P = .99
Alcohol (%E)	Ref	-1.22 (-4.32,1.89) P = .44	0.46 (-2.67,3.60) P = .77	0.03 (-0.22,0.27) P = .84
Thiamin (mg)	Ref	-0.13 (-0.47,0.22) P = .47	0.00 0(-0.35,0.34) P = .99	0.01 (-0.02,0.03) P = .65
Riboflavin (mg)	Ref	0.08 (-0.33,0.48) P = .71	0.00 (-0.41,0.41) P = .99	0.01 (-0.02,0.04) P = .44
Vitamin C (mg)	Ref	-11.52 (-46.06,23.02) P = .51	18.46 (-16.37,53.29) P = .30	1.13 (-1.65,3.90) P = .42
Vitamin E (mg)	Ref	-0.93 (-5.53,3.67) P = .69	-1.67 (-6.31,2.97) P = .48	-0.17 (-0.53,0.20) P = .36
Vitamin B6 (mg)	Ref	0.02 (-0.27,0.32) P = .88	0.18 (-0.11,0.48) P = .13	0.02 (0.00,0.04) P = .069
Folate (ug)	Ref	15.73 (-103.93,135.39) P = .79	-21.75 (-142.42,98.92) P = .72	-3.79 (-13.26,5.68) P = .43
Vitamin B12 (ug)	Ref	0.68 (-0.23,1.58) P = .14	0.91 (0.00,1.83) P = .050	0.10 (0.03,0.17) P = .005
Calcium (mg)	Ref	-0.16 (-195.77,195.45) P = 1.00	8.25 (-189.01,205.51) P = .93	4.55 (-10.93,20.03) P = .56
Iodine (ug)	Ref	20.87 (-17.87,59.62) P = .29	6.48 (-32.59,45.55) P = .74	0.89 (-2.19,3.98) P = .57
Iron (mg)	Ref	-0.76 (-2.35,0.83) P = .34	-0.32 (-1.92,1.29) P = .70	-0.01 (-0.14,0.12) P = .89
Zinc (mg)	Ref	0.08 (-1.32,1.47) P = .91	1.29 (-0.12,2.70) P = .073	0.14 (0.03,0.02) P = .015
Potassium (mg)	Ref	-92.22 (-619.45,435.01) P = .73	359.85 (-171.83,891.53) P = .18	38.06 (-3.73,79.85) P = .074
Sodium (mg)	Ref	-108.45 (-537.85,320.94) P = .62	-175.93 (-608.95,257.09) P = .42	-14.63 (-48.66,19.39) P = .40
Food Groups and Food Subgroups				
Vegetables	Ref	-1.31 (-2.69,0.07) P = .062	0.33 (-1.06,1.71) P = .64	0.01 (-0.10,0.13) P = .80
Dark green	Ref	-0.04 (-0.28,0.21) P = .77	0.13 (-0.12,0.37) P = .31	0.01 (-0.01,0.03) P = .43
Red and orange	Ref	-0.14 (-0.54,0.27) P = .50	0.26 (-0.15,0.67) P = .21	0.01 (-0.02,0.05) P = .41
Legumes	Ref	0.04 (-0.07,0.15) P = .51	0.04 (-0.07,0.15) P = .50	0.00 (-0.01,0.01) P = .94
Other	Ref	-0.79 (-1.631,0.05) P = .064	0.14 (-0.71,0.98) P = .75	0.01 (-0.06,0.08) P = .74
Starchy	Ref	-0.38 (-0.85,0.08) P = .11	-0.24 (-0.71,0.23) P = .32	-0.02 (-0.06,0.02) P = .34
Starchy (%)	Ref	-0.64 (-11.35,10.08) P = .91	-3.53 (-14.33,7.27) P = .52	-0.30 (-1.15,0.55) P = .49
Meat and alternatives	Ref	0.58 (0.00,1.17) P = .050	0.99 (0.40,1.58) P < .001	0.09 (0.04,0.13) P < .001
Red meat	Ref	0.14 (-0.07,0.34) P = .18	0.51 (0.30,0.71) P < .001	0.04 (0.03,0.06) P < .001
Processed meat	Ref	0.03 (-0.08,0.15) P = .55	0.04 (-0.07,0.16) P = .45	0.00 (-0.01,0.01) P = .79
Seafood	Ref	0.10 (-0.05,0.26) P = .20	0.18 (0.02,0.34) P = .030	0.02 (0.01,0.03) P = .002
Nuts and seeds	Ref	0.20 (-0.24,0.63) P = .37	-0.08 (-0.51,0.36) P = .73	-0.01 (-0.05,0.02) P = .47

Legumes	Ref	0.03 (-0.04,0.09) P = .39	0.02 (-0.04,0.08) P = .50	0.00 (-0.01,0.00) P = .94
Soy products	Ref	0.01 (-0.04,0.07) P = .65	0.01 (-0.04,0.07) P = .63	0.00 (0.00,0.00) P = .98
Poultry	Ref	-0.02 (-0.23,0.18) P = .82	0.24 (0.04,0.45) P = .020	0.03 (0.02,0.05) P < .001
Eggs	Ref	0.10 (0.00,0.21) P = .049	0.07 (-0.04,0.17) P = .22	0.00 (-0.01,0.01) P = .67
Dairy and alternatives	Ref	0.14 (-0.44,0.72) P = .63	0.08 (-0.51,0.66) P = .80	0.02 (-0.02,0.07) P = .36
Milk	Ref	0.36 (-0.21,0.93) P = .21	-0.04 (-0.61,0.54) P = .90	0.01 (-0.04,0.05) P = .75
Cheese	Ref	-0.13 (-0.34,0.08) P = .23	0.01 (-0.20,0.22) P = .94	0.00 (-0.02,0.02) P = .93
Yoghurt	Ref	-0.11 (-0.28,0.06) P = .19	0.02 (-0.16,0.19) P = .86	0.01 (-0.01,0.02) P = .30
Milk alternatives	Ref	0.02 (-0.08,0.12) P = .67	0.09 (-0.01,0.19) P = .071	0.01 (0.00,0.01) P = .12
Fruit	Ref	-0.08 (-0.53,0.38) P = .73	0.16 (-0.30,0.62) P = .50	0.02 (-0.01,0.06) P = .19
Citrus, melons and berries	Ref	0.07 (-0.12,0.26) P = .49	0.04 (-0.15,0.23) P = .66	0.00 (-0.02,0.02) P = .99
Other fruit	Ref	-0.02 (-0.41,0.37) P = .92	0.19 (-0.20,0.58) P = .34	0.02 (-0.01,0.05) P = .12
Fruit juice	Ref	-0.13 (-0.26,0.01) P = .069	-0.08 (-0.21,0.06) P = .28	0.00 (-0.01,0.01) P = .96
Fruit juice (%)	Ref	-6.70 (-13.67,0.28) P = .060	-4.62 (-11.65,2.41) P = .20	-0.17 (-0.73,0.39) P = .55
Grains	Ref	-0.03 (-0.99,0.94) P = .95	-0.71 (-1.69,0.26) P = .15	-0.06 (-0.14,0.02) P = .14
Refined grains	Ref	-0.08 (-0.84,0.67) P = .83	-0.39 (-1.15,0.38) P = .32	-0.03 (-0.09,0.03) P = .28
Wholegrains	Ref	0.06 (-0.73,0.84) P = .89	-0.32 (-1.12,0.47) P = .42	-0.03 (-0.09,0.04) P = .42
Wholegrains (%)	Ref	1.93 (-8.67,12.53) P = .72	3.55 (-7.15,14.24) P = .51	0.27 (-0.57,1.11) P = .52
Discretionary Foods	Ref	-7.44 (-10.22,-4.65) P < .001	-10.72 (-13.54,-7.91) P < .001	-0.77 (-1.01,-0.53) P < .001

P:NP, protein to non-protein; kJ, kilojoule; BW, body weight; %E, as a percentage of energy.