Familial Dietary Patterns: IV. Daily Protein Consumption

by

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Introduction

Early reports disclosed a significant positive correlation of general clinical symptoms and signs (1, 2) and psychologic responses (3) in married couples. Subsequent studies revealed similar parallelisms with regard to blood glucose (4) and serum cholesterol (5). This series of reports is designed to study possible environmental causation in the above mentioned clinical and biochemical areas through a study of familial dietary habits. The first three in this series analyzed the total caloric consumption (6), dietary carbohydrate intake (7), and fat consumption (8). This fourth release attempts to answer the following three questions:

- 1. What is the relationship of daily total and animal protein consumption in married couples?
- 2. How does the husband-wife correlation compare with the protein patterns in the husband versus an age-paired, unrelated female group?
- 3. What conclusion may be drawn from these two sets of findings?

Method of Investigation

Three hundred forty-one dentists and their wives shared in this study. These individuals are presently participants in multiphasic screening programs conducted in Los Angeles under the auspices of the Southern California Academy of Nutritional Research, in Columbus under the aegis of the Ohio Academy of Clinical Nutrition, and in Florida under the sponsorship of the Southern Academy of Clinical Nutrition. Specifically, three groups were studied: 82 dental practitioners, 82 wives, and 82 women (wives of other dentists), age-paired with the wives. The age patterns for the three groups are summarized (Table 1).

Each subject completed a seven-day dietary record. The daily total and refined protein intake was calculated by Doctor Michael Walsh, Consultant-Nutritionist, Beverly Hills, California. Table 2 summarizes the daily total protein intake. It will be noted that there is a statistically significant difference in the husbands and the wives. There is no statistically significant difference between the two female groups. Table 3 analyzes, in like manner, the daily animal protein

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	Age	Table 1 Distribution	
age groups	males	wives	unrelated females
20-29	1 (1.2%)	5 (6.1%)	5 (6.1%)
30-39	33 (40.2%)	38 (46.3%)	38 (46.3%)
40-49	35 (42.7%)	34 (41.5%)	34 (41.5%)
50-59	12 (14.6%)	3 (3.7%)	3 (3.7%)
60-69	1(1.2%)	2 (2.4%)	2(2.4%)
total	82 (100.0%)*	82 (100.0%)	82 (100.0%)
mean	41.7	39.4	39.4
S.D.	7.0	7.3	7.3
minimum	29	26	26
maximum	60	60	60
range	31	34	34
*approximate			

consumption. The statistical anlysis for daily animal protein intake is similar to that observed for total protein.

Results

Question One: In order to resolve the first question, a correlation coefficient was performed for the husband versus the wife (Table 4) with respect to total

1.1	Tal	ble 2	
daily	Daily Total Pro	tem Consumption	
protein			
intake	1		unrelated
(gms.)	males	wives	females
4-49	0	4	4
50-59	0	4	6
60-69	1	17	15
70-79	7	22	20
80-89	9	13	14
90-99	16	13	10
100 +	49	9	13
total	82	82	82
mean	111	78	79
S.D.	27	18	21
minimum	67	22	22
maximum	213	127	127
range	146	105	105
Р	<0	.001* >	0.500

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protein intake. It will be noted that there is a statistically significant positive correlation (r = +0.308, P <0.01). Thus, in partial answer to the first question, the daily total protein consumption is similar in the married couple (Figure 1). Table 5 is a similar analysis for daily animal protein consumption. It is clear that there is a statistically significant correlation coefficient (r = +0.242, P <0.05) in married couples (Figure 2). Hence, as an additional answer to the first question, there is also a statistically significant relationship with regard to animal protein intake.

Question Two: Women age-paired against the wives were used as a third group in the study. The correlation coefficients (Tables 4-5) between the husband and the unrelated female are not statistically significant in either case. Therefore, in answer to the second question, there is no significant correlation with regard to daily total protein or animal protein consumption in men and women unrelated by marriage.

	T	able 3	
	Daily Animal P	rotein Consumptio	n
daily carbo- hydrate intake (gms.)	males	wives	unrelated females
0-49	4	22	21
50-59	6	22	21
60-69	11	18	18
70-79	16	9	7
80-89	15	7	8
90-99	10	2	3
100 +	20	2	4
total	82	82	82
mean	86	60	61
\$.D.	25	17	19
minimum	39	9	9
maximum	180	104	113
range	141	95	104
Р	statistically signification	0.001* ant difference of the	>0.500 e means

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	Table 4		
Correlation Coefficients For Daily			
Total P	rotein Consum	option	
	number		
	of		
	pairs	r	Р
husband vs. wife	82	+0.308	< 0.01*
husband vs. unrelated female	82	+0.014	> 0.05
wife vs. unrelated female	82	-0.099	> 0.05
husband vs. wife			
(husband's age < 41)	40	+0.271	> 0.05
(husband's age $41+$)	42	+0.343	< 0.05*
husband vs. unrelated female			
(husband's age < 41)	40	+0.100	> 0.05
(husband's age $41+$)	42	-0.071	> 0.05
wife vs. unrelated female			
(age < 40)	43	-0.065	> 0.05
(age 40+)	39	-0.150	> 0.05
*statistically significant correlation coefficient			

daily total protein intake in the dentist and his wife



husband FIGURE 1. The relationship of daily total protein intake in the husband (on the abscissa) and the wife (on the ordinate).

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	Table 5		
Correlation Coefficients For Daily			
Animal Protein Consumption			
	number		
	of		
	pairs	r	Р
husband vs. wife	82	+0.242	< 0.05*
husband vs. unrelated female	82	+0.003	> 0.05
wife vs. unrelated female	82	-0.057	> 0.05
husband vs. wife			
(husband's age <41)	40	+0.278	>0.05
(husband's age 41+)	42	+0.216	> 0.05
husband vs. unrelated female			
(husband's age < 41)	40	-0.010	> 0.05
(husband's age $41+$)	42	+0.011	< 0.05
wife vs. unrelated female			
(age < 40)	43	-0.051	> 0.05
(age 40+)	39	-0.064	> 0.05
*statistically significant correlation coefficient			

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daily animal protein intake in the dentist and his wife



husband FIGURE 2. The relationship of daily animal protein intake in the husband (on the X-axis) and the wife (on the Y-axis).

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Discussion

Within the limits of this study, daily total and animal protein consumption is significantly correlated in married couples, but this parallelism does not prevail when the husband is compared with an unrelated, age-paired female.

The question arises whether men and women with common protein needs or consumption select each other as husband and wife. To resolve this question, the groups were subdivided as near equally as possible into two age categories. Thus, one group of men ranged up to 40 years of age and the other group from from 41 and above.

Question Three: An analysis of the daily total protein intake (Table 4) in the husband and wife revealed that in the younger age group there is no statistically significant correlation (r = +0.271, P >0.05). In contrast, the correlation is statistically significant in the older group (r = +0.343, P <0.05). Thus, during the early years of marriage, there is no statistically significant parallelism in the husband and the wife. As the marriage matures, which can be interpreted to mean more years together, these dietary practices apparently become similar in terms of total protein intake (Figure 1). Similar age analysis between the husband and the unrelated female and the two female groups show no statistically significant relationship. An analysis of the younger and older couples with regard to daily animal protein shows (Table 5) no statistically significant correlation in either group (Figure 2).

An earlier study of total caloric intake (6) revealed that, although the initial correlation between husband and wife was statistically significant, it did not increase with age (Table 6). Another report regarding total and refined carbo-hydrate consumption (7) suggested that, with advancing age, both total and refined carbohydrate intake paralleled in the husband and the wife (Table 6). A

Table 6	
Husband Versus Wife Correlation	
Coefficients For The Daily Consumption	
Of The Major Foodstuffs	
younger	older
couples	couple

	couples	couples
calories	+0.419**	+0.336*
total carbohydrate	+0.473**	+0.652**
refined carbohydrate	$+0.442^{**}$	-+-0.669**
fat	+0.586**	+0.223
total protein	+0.271	+0.343*
animal protein $*P < 0.05$	+0.28	+0.216
**P <0.01		

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subsequent report (8) showed that, with regard to fat intake, the parallelism vanishes with time (Table 6). Finally, in the case of protein, the correlation only becomes greater and significantly so with total protein intake (Table 6). Hence, it is likely that among the major foodstuffs only total protein, total carbohydrate and refined carbohydrate may be ascribed important roles in the genesis of the clinical (1, 2), psychologic (3), and biochemical (4, 5) findings mentioned earlier.

Summary

1

Eighty-two dental practitioners, 82 wives, and 82 women (wives of other dentists) age-paired with the wives, were studied in terms of daily total and animal protein consumption. For the entire sample, the evidence suggests that there is only a statistically significant correlation in the married couples. The results are very similar to the findings in this group with regard to daily total calories, total and refined carbohydrates and fat. However, with age, the correlation in the married couples only becomes more statistically significant with regard to total protein intake.

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