



# Relationship Among Nutritional Patterns, Metabolic Parameters And Reproductive Hormones In Healthy Young Men

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**Introduction:** Importance of nutrition in diabetes and other metabolic diseases development is well known, but little has been done to explore whether nutrition affects reproductive health and metabolic parameters in young healthy subjects.

**The goal** of our study was to evaluate a possible relationship between eating patterns, metabolic parameters and androgenisation levels in healthy young men.

**Methods:** A total of 199 men aged 18–26 participated in this sub-study. Anthropometric measurements included height, weight, hip circumference, waist circumference, and calculation of body mass index. Investigation of reproductive function consisted of clinical evaluation, including orchidometry, and measurement of serum total testosterone, sex hormone binding globulin (SHBG), estradiol and inhibin B levels. Body composition analysis was performed by bioelectrical impedance analysis. Nutrition questions included usage of milk and dairy products, eggs, different types of meat and fish, pulses, fruit and vegetables.

**Results:** A weak inverse correlation between beer consumption and SHBG has been observed ( $r=-0.180$ ,  $p=0.013$ ). Amount of wine consumed was related to estradiol levels ( $r=0.211$ ,  $p=0.007$ ). SHBG levels had inverse correlation with fat mass ( $r=-0.258$ ,  $p<0.001$ ), hip circumference ( $r=-0.249$ ,  $p=0.001$ ) and waist circumference ( $r=-0.200$ ,  $p=0.008$ ). Comparison of distributions among groups showed that milk non-users had lower testosterone ( $p=0.032$ ) and estradiol ( $p=0.033$ ) levels and higher waist circumference ( $p=0.047$ ).

## Conclusion:

**Our data demonstrate that nutrition can be related to reproductive health and metabolic parameters in healthy young men. Consumption of milk is related to higher sex hormone levels. Beer consumption inversely correlated with SHBG levels, while wine consumption showed positive correlation with estradiol concentration.**

Table 2. Alcohol consumption as referred by study subjects

Alcohol consumption	N	%
No	32	16.1
<1 unit/week	110	55.3
1-2 units/week	32	16.1
>2 units/week	20	10.1

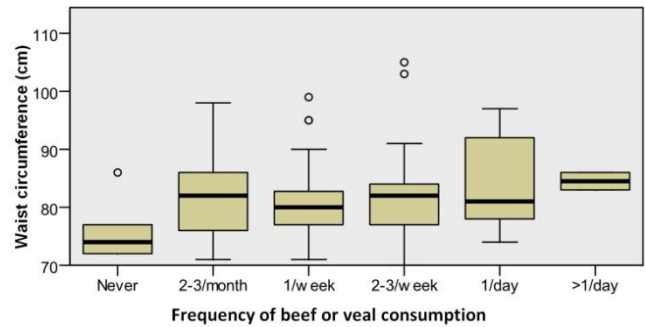


Fig. Frequency of beef or veal usage and waist circumference ( $p=0.043$ )

Table 1. Correlation between age, hormone levels and metabolic parameters in 199 young men

		Fat mass	Lean mass	Fluid mass	Waist circum.	Hip circum.	Relative fat mass	Relative lean mass	Relative fluid mass
Age	r	0.308	0.010	-0.034	0.135	0.101	0.366	-0.352	-0.244
	p	<0.001	0.885	0.637	0.074	0.179	<0.001	<0.001	0.001
E <sub>2</sub>	r	0.102	0.159	0.144	0.078	0.166	0.078	-0.096	-0.089
	p	0.155	0.027	0.046	0.306	0.028	0.283	0.181	0.215
Inhibin B	r	-0.077	-0.164	-0.152	-0.089	-0.116	-0.051	0.049	0.057
	p	0.283	0.022	0.034	0.241	0.124	0.483	0.498	0.432
FSH	r	-0.106	-0.050	-0.069	-0.106	-0.078	-0.101	0.102	0.031
	p	0.141	0.493	0.342	0.161	0.303	0.161	0.157	0.664
LH	r	-0.077	-0.059	-0.091	-0.061	-0.040	-0.049	0.054	-0.013
	p	0.288	0.415	0.209	0.419	0.593	0.500	0.454	0.859
SHBG	r	-0.258	-0.231	-0.173	-0.200	-0.249	-0.235	0.205	0.205
	p	<0.001	0.001	0.016	0.008	0.001	0.001	0.004	0.004
T	r	-0.158	-0.096	-0.063	-0.108	-0.116	-0.134	0.097	0.100
	p	0.027	0.182	0.381	0.155	0.124	0.062	0.177	0.165