

Organic Diet and Intermittent Fasting are Associated with Improved Erectile Function

Linda My Huynh, Karren Liang, Mohammad M Osman, Farouk M El-Khatib, Sharmin Dianatnejad, Natalie Roberts, Faysal A. Yafi

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Introduction & Objective

- Erectile dysfunction (ED) affects 30-52% of men above the age of 40.
- Men with metabolic comorbidities such as diabetes mellitus, CVD/CAD, and obesity, are at 30-70% increased lifetime risk for ED.
- These comorbidity profiles are largely modifiable by lifestyle intervention and diet, of which a number have become increasingly popular over recent years: organic foods, intermittent fasting, veganism, keto, paleo, etc.
- **The present study seeks to explore associations between dietary habits and ED in a cohort of patients presenting to a high-volume men's health clinic.**

Materials and Methods

- Between July 2018 and May 2019, 271 patients presenting to our men's health clinic were evaluated for their dietary habits and screened with the IIEF-5 and ADAM questionnaires.
- Patients on testosterone therapy, had penile implants, and/or refused to complete questionnaires were excluded from this cohort.
- Clinical demographics, reason for visit, and test results were prospectively collected from EMR.
- Primary outcome measure was the impact of dietary habits on ED, defined as IIEF-5 < 22. Stepwise logistic regressions were used to control for patient characteristics and relevant comorbidities.

Results – Cohort Descriptives

	N	%
Reason for Visit*		
Erectile Dysfunction	110	40.6%
Peyronie's Disease	30	11.1%
Hypogonadism	39	14.4%
Ejaculatory Dysfunction	2	<1%
Elevated PSA	10	3.7%
BPH/LUTS	80	29.5%
Infertility Disease	18	6.6%
Varicocele	22	8.1%
Other	80	29.5%
Comorbidities*		
Diabetes	35	12.9%
Hypertension	63	23.2%
CVD/CAD	16	6.6%
CKD	9	3.3%
Liver Disease	7	2.6%

*selections were not mutually exclusive

- Age: 53.3 ± 17.6
- BMI: 27.6 ± 5.1
- IIEF-5: 16.7 ± 7.8
- 41% of patients had ED listed as the primary reason for visit.
 - An additional 20% of patients screened <22 on the IIEF-5 and were included in analysis.
- 42% of the total cohort had DM, CVD/CAD, and HTN.

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	N	%
Organic Foods Only	105	38.7%
No Processed Foods	51	18.8%
Intermittent Fasting	77	28.4%
Food Group Avoidance		
Whole Food Only	11	4.1%
Low-Carb / Keto	11	4.1%
Vegetarian / Pescatarian	8	3.0%
Low-Fat	11	4.1%
Other	3	1.1%

*selections were not mutually exclusive

Results – Organic Diet on ED

Univariate		
	OR (95% CI)	p
Organic Diet	1.788 (1.074-2.976)	0.025
Age [<65 [ref] vs. >65]	0.349 (0.197-0.617)	0.000
Body Mass Index	0.947 (0.897-1.000)	0.050
Diabetes Mellitus [0 [ref] vs 1]	0.110 (0.033-0.369)	<0.001
Hypertension [0 [ref] vs 1]	0.145 (0.066-0.321)	<0.001
CVD/CAD [0 [ref] vs 1]	0.198 (0.24-1.630)	0.110

- In univariate analysis, organic diet, age, BMI, DM, and HTN were significant predictors of ED.

Results – Organic Diet on ED

	Univariate		Multivariate - Demographics	
	OR (95% CI)	p	OR (95%CI)	p
Organic Diet	1.788 (1.074-2.976)	0.025	1.836 (1.071-3.417)	0.027
Age [<65 [ref] vs. >65]	0.349 (0.197-0.617)	0.000	0.346 (0.188-0.636)	0.001
Body Mass Index	0.947 (0.897-1.000)	0.050	0.937 (0.884-0.993)	0.027
Diabetes Mellitus [0 [ref] vs 1]	0.110 (0.033-0.369)	<0.001	-	-
Hypertension [0 [ref] vs 1]	0.145 (0.066-0.321)	<0.001	-	-
CVD/CAD [0 [ref] vs 1]	0.198 (0.24-1.630)	0.110	-	-

- After adjusting for age and BMI as demographics, we found organic diet to be an independent predictor of ED. Age and BMI still remained significant.

Results – Organic Diet on ED

	Univariate		Multivariate - Demographics		Multivariate - Comorbidities	
	OR (95% CI)	p	OR (95%CI)	p	OR (95%CI)	p
Organic Diet	1.788 (1.074-2.976)	0.025	1.836 (1.071-3.417)	0.027	1.809 (1.023-3.198)	0.042
Age [<65 [ref] vs. >65]	0.349 (0.197-0.617)	0.000	0.346 (0.188-0.636)	0.001	0.557 (0.289-1.076)	0.082
Body Mass Index	0.947 (0.897-1.000)	0.050	0.937 (0.884-0.993)	0.027	0.957 (0.897-1.020)	0.177
Diabetes Mellitus [0 [ref] vs 1]	0.110 (0.033-0.369)	<0.001	-	-	0.219 (0.060-0.795)	0.021
Hypertension [0 [ref] vs 1]	0.145 (0.066-0.321)	<0.001	-	-	0.141 (0.141-0.812)	0.015
CVD/CAD [0 [ref] vs 1]	0.198 (0.24-1.630)	0.110	-	-	-	0.998

- Finally, in the last step of the model, we added DM and HTN as comorbidities, significant from the univariate model.
- Overall, organic diet still remained an independent and protective against ED. DM and HTN were also independent predictors.

Results – Intermittent Fasting on ED

	Univariate		Multivariate - Demographics		Multivariate - Comorbidities	
	OR (95% CI)	p	OR (95%CI)	p	OR (95%CI)	p
Intermittent Fasting	1.997 (1.043-3.823)	0.037	2.111 (1.054-4.227)	0.035	2.425 (1.132-4.725)	0.023
Age [<65 [ref] vs. >65]	0.349 (0.197-0.617)	<0.001	0.329 (0.178-0.607)	<0.001	0.548 (0.281-0.983)	0.078
Body Mass Index	0.947 (0.897-1.000)	0.050	0.932 (0.897-0.989)	0.02	0.955 (0.895-1.023)	0.173
Diabetes Mellitus [0 [ref] vs 1]	0.110 (0.033-0.369)	<0.001	-	-	0.248 (0.067-0.828)	0.036
Hypertension [0 [ref] vs 1]	0.145 (0.066-0.321)	<0.001	-	-	0.301 (0.125-0.603)	0.007
CAD/CVD [0 [ref] vs 1]	0.198 (0.24-1.630)	0.110	-	-	-	0.998

- Similar results were found with intermittent fasting, with fasting, DM, and HTN as significant and independent predictors of ED.

Discussion & Limitations

- Comorbidities of DM and HTN persist as important contributors to ED, perhaps not entirely modifiable via the diets discussed here.
- We caution the conclusion that it is organic diet or intermittent fasting alone that benefit EF in aging men.
 - Rather, we presume these choices to be part of an extensive process of increased awareness in food consumption, their nutritional value, and overall health-consciousness.

Conclusion

- This is the first study suggesting organic diet and intermittent fasting to be protective against ED.
- This benefit is independent of age and BMI.
- Results are hypothesis-generating and encourage prospective trials exploring the impact of diet on ED.