

MP84-11. ASSOCIATION BETWEEN POLYCHLORINATED BIPHENYL (PCB) 153 EXPOSURE AND SERUM TESTOSTERONE LEVELS: ANALYSIS OF THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (NHANES)

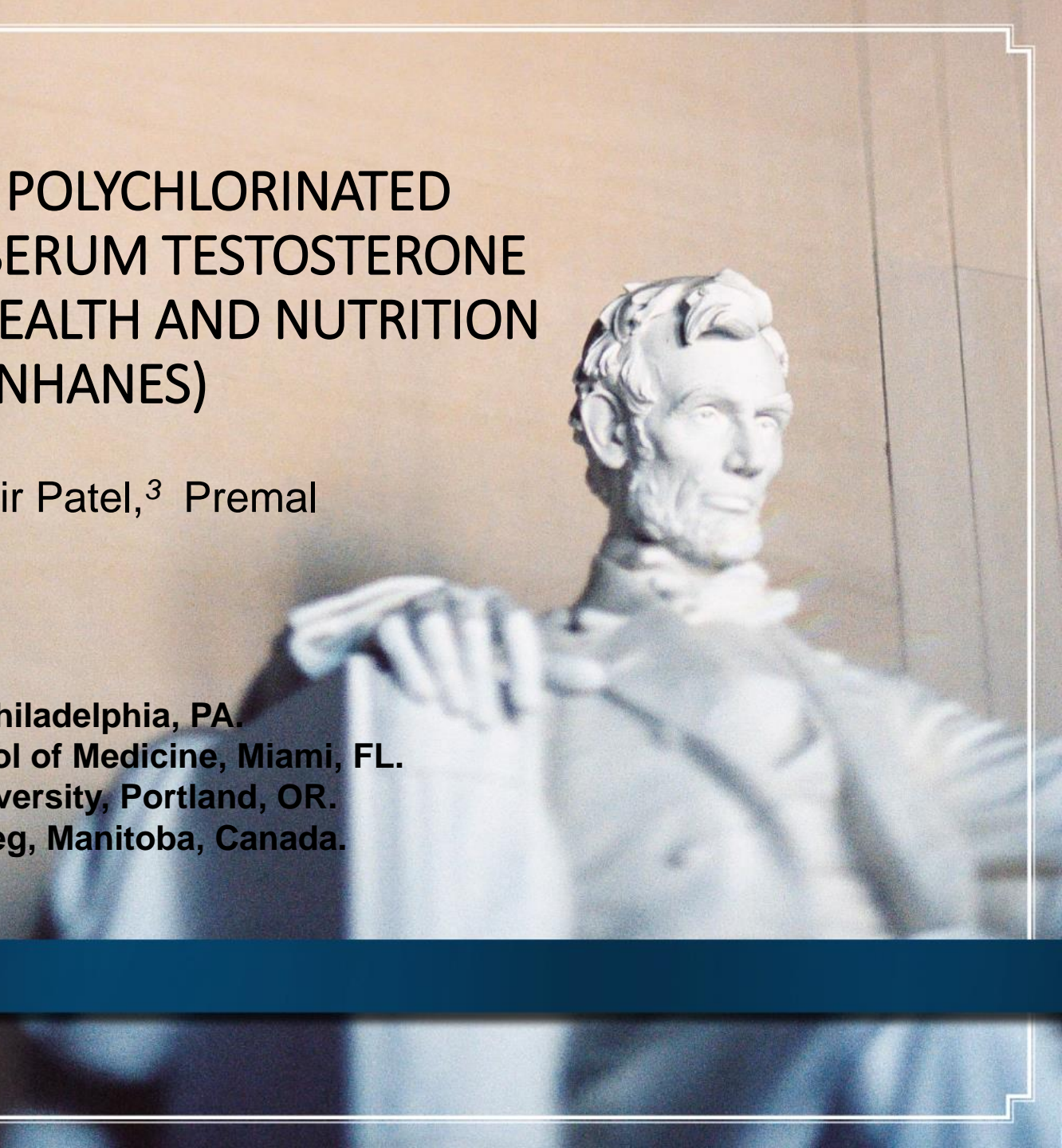
Joon Yau Leong,¹ Ruben Blachman-Braun,² Amir Patel,³ Premal Patel,⁴ Ranjith Ramasamy²

¹ Department of Urology, Thomas Jefferson University, Philadelphia, PA.

² Department of Urology, University of Miami Miller School of Medicine, Miami, FL.

³ Department of Urology, Oregon Health and Science University, Portland, OR.

⁴ Department of Urology, University of Manitoba, Winnipeg, Manitoba, Canada.



BACKGROUND AND RESULTS

- Polychlorinated biphenyls (PCB) 153 are a category of aromatic hydrocarbon compounds manufactured for use in industrial applications.
- A total of 557 men were analyzed.

	Univariable linear regression analysis			Multiple regression analysis		
	Difference in testosterone levels (ng/dL)	Standard error	p-value	Difference in testosterone levels (ng/dL)	Standard error	p-value
Age (years)	-3.91	0.42	< 0.001	-6.29	0.46	< 0.001
BMI (kg/m ²)	-12.7	1.36	< 0.001	-7.08	1.13	< 0.001
PCB 153 (ng/g)	-179.67	32.38	< 0.001	-12.83	30.42	0.673
SHBG (nmol/L)	3.16	0.41	< 0.001	5.58	0.37	< 0.001
Annual family income (\$)	-9.00	7.27	0.216	-0.62	5.35	0.907
Level of activity each day	25.35	7.60	0.001	12.52	5.70	0.028
Diabetes	-50.88	14.13	< 0.001	2.02	11.00	0.854
CAD	-119.58	32.38	< 0.001	-22.29	24.95	0.372
Prior stroke	-73.84	43.02	0.087	6.76	32.30	0.834
History of cancer	-28.96	31.41	0.357	-7.81	23.61	0.741

Table. Univariable and multiple linear regression analysis used to predict serum testosterone levels.



1. Faroon O, Ruiz P. Polychlorinated biphenyls: New evidence from the last decade. *Toxicol Ind Health* 2016;32:1825-47.
2. Meeker JD, Hauser R. Exposure to polychlorinated biphenyls (PCBs) and male reproduction. *Syst Biol Reprod Med* 2010;56:122-31.

CONCLUSIONS

- There is an association between a decrease in serum testosterone with increasing serum levels of PCB153.
- There is an associations between environmental PCB exposure and serum androgens.
- Future research is necessary to assess variations of free and bound testosterone with PCB exposure as well as to ascertain the exact mechanism by which PCB affects testosterone production.

