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**Conflict of Interest Disclosure:** I have no potential conflict of interest to report**Introduction:** Thyroid hormones play an important role in cell differentiation and growth. We examine the association between thyroid hormone and lower urinary tract symptoms (LUTS)/ benign prostatic hyperplasia (BPH) and the role of testosterone in their relationships.**Methods**

A total of 5708 middle aged men who participated in a health examination were included. LUTS/BPH were assessed using the International Prostate Symptom Score (IPSS), total prostate volume (TPV), maximal flow rate (Qmax), and a full metabolic workup. Thyroid-stimulating hormone (TSH) and free thyroxine (FT4) levels were measured using immunoassay. We divided participants into quartiles based on their TSH and FT4 levels: first to fourth quartile (Q1 to Q4).

**Results:** Mean age: 51.1±5.2 years. Mean testosterone: 5.2±1.5 ng/mL. Metabolic syndrome: 41.6%. Mean IIEF:17.7±5.3. Mean TPV, IPSS, and Qmax was 24.1±7.0 mL, 10.6±7.1, and 23.0±8.6 mL/sec, respectively.

**Table 1.** Relationships between FT4 or TSH and LUTS/BPH measurements

Variable	Free T4				P	TSH				P
	Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4	
TPV≥30 mL	15.2	16.4	18.0	19.3	<b>.002</b>	17.5	17.9	16.6	16.6	.386
IPSS>7	57.2	56.7	60.3	62.5	<b>.001</b>	59.0	59.7	59.4	58.3	.668
Qmax<10 mL/sec	3.5	3.2	4.1	4.8	<b>.038</b>	4.1	3.2	3.1	5.2	.199

**Table 2.** Adjusted ORs of FT4 or TSH for LUTS/BPH measurement

	FT4	Adjusted OR (5-95 confidence interval)	P <sup>a</sup>
TPV≥30 mL	Q1	1.000 (references)	
	Q2	1.113 (.910-1.361)	.296
	Q3	1.256 (1.027-1.537)	<b>.027</b>
	Q4	1.364 (1.120-1.662)	<b>.002</b>
IPSS>7	Q1	1.000 (references)	
	Q2	.970 (.837-1.124)	.684
	Q3	1.121 (.963-1.305)	.141
	Q4	1.215 (1.044-1.414)	<b>.012</b>
Qmax<10 mL/sec	Q1	1.000 (references)	
	Q2	.890 (.592-1.338)	.576
	Q3	1.145 (.772-1.698)	.500
	Q4	1.340 (.918-1.955)	.129

**Table 3.** Relationships between FT4 and TPV according to testosterone level

	Testosterone	Free T4				P <sup>a</sup>
		Q1	Q2	Q3	Q4	
TPV ≥30 mL	≤5.06 ng/mL	16.6	14.8	18.4	18.2	.189
	>5.06 ng/mL	13.9	18.0	17.7	20.5	<b>.002</b>

**Table 4.** Adjusted ORs of FT4 for TPV according to testosterone level

Variable	Testosterone	FT4	Adjusted ORs (5-95 confidence interval)	P <sup>a</sup>
TPV≥30 mL <sup>1</sup>	≤5.06 ng/mL	Q1	1.000 (references)	
		Q2	.883 (.663-1.175)	.393
		Q3	1.145 (.864-1.516)	.345
		Q4	1.222 (.851-1.481)	.414
	>5.06 ng/mL	Q1	1.000 (references)	
		Q2	1.394 (1.050-1.851)	<b>.022</b>
		Q3	1.386 (1.036-1.852)	<b>.028</b>
		Q4	1.661 (1.253-2.203)	<b>&lt;.001</b>

**Conclusion:** We found a possible role of thyroid hormone in the development of LUTS/BPH, and we demonstrated a possible role of testosterone in the relationship between thyroid hormone and TPV