Supplementary information.

Table S1. Potential confounding factors check.

Factors	TSH	T_3	T_4	Free T_4	TBG	8-OHdG	8-NO_2Gua	HNE-MA	8-IsoPGF2$_\alpha$	MDA
Age (Pearson correlation)										
Visit 1	0.027	**0.207**	0.078	0.115	0.166	0.074	-0.079	-0.017	0.140	0.086
Visit 2	0.111	0.169	0.050	-0.161	**0.277**	-0.178	-0.146	0.038	-0.018	0.092
Visit 3	0.121	0.054	**0.280**	0.157	**0.263**	-0.122	-0.085	0.159	-0.027	-0.007
Education (Kruskal–Wallis test *p*-value)										
Visit 1	0.162	**0.012**	0.369	**0.023**	0.067	0.408	0.420	0.682	0.766	0.731
Visit 2	0.364	0.321	0.249	0.327	0.099	0.669	0.570	0.763	0.566	0.159
Visit 3	0.966	0.991	0.666	0.225	0.373	0.251	0.187	0.635	0.603	0.383
Annual household income (Kruskal–Wallis test *p*-value)										
Visit 1	0.341	0.237	0.638	0.260	0.122	0.273	0.381	0.188	0.171	0.070
Visit 2	0.168	0.375	0.128	0.459	0.755	0.567	0.875	0.573	0.234	0.907
Visit 3	0.955	0.966	0.507	0.750	0.178	0.199	0.072	0.172	0.464	0.884
Primiparas (Mann–Whitney U test *p*-value)										
Visit 1	0.710	0.819	0.546	**0.040**	0.833	0.267	0.965	0.305	0.903	0.659
Visit 2	0.457	**0.039**	0.651	0.051	0.638	0.854	0.519	0.795	0.200	0.113
Visit 3	**0.012**	0.683	0.276	0.188	0.491	0.340	0.962	0.781	0.207	0.506
Folic acid consumption (Mann–Whitney U test *p*-value)										
Visit 1	0.273	0.436	0.300	**0.034**	0.480	**0.042**	**0.012**	0.435	0.296	0.557
Visit 2	0.410	0.894	0.069	0.477	0.448	0.319	0.587	0.801	0.232	**0.045**
Visit 3	0.339	0.963	0.121	0.646	0.127	0.511	0.664	0.871	0.672	0.212
Active cigarette smoking before pregnancy (Mann–Whitney U test *p*-value)										
Visit 1	0.183	0.228	0.869	0.182	0.751	**0.019**	0.576	0.191	0.064	0.073
Visit 2	0.178	0.601	0.284	0.457	0.216	0.260	0.601	0.161	0.697	0.527
Visit 3	0.232	0.905	0.858	0.135	0.256	0.591	0.199	0.720	0.632	0.244
Passive cigarette smoking before pregnancy (Mann–Whitney U test *p*-value)										
Visit 1	0.676	0.648	0.586	**0.014**	0.973	0.655	**0.044**	0.411	0.431	0.384
Visit 2	0.271	0.229	0.255	0.160	0.279	0.323	0.535	0.771	0.668	0.658
Visit 3	0.134	0.668	0.492	0.565	0.417	0.082	0.910	0.373	0.901	0.259
Alcohol consumption before pregnancy (Mann–Whitney U test *p*-value)										
Visit 1	0.248	0.407	0.626	0.129	0.396	0.330	0.207	0.801	0.324	0.899
Visit 2	0.503	0.118	0.241	0.170	0.361	0.402	0.696	0.241	0.108	0.889
Visit 3	N.A. (because all participants in visit 3 didn't drink alcohol)									

Table S2. Proportions (%) of thyroid hormones outside reference ranges for pregnant women in this study.

	TSH	T_3	T_4	Free T_4	TBG
Outside reference range					
1st trimester	5.15	30.93	31.96	53.61	68.04
2nd trimester	4.76	57.14	36.51	39.68	53.57
3rd trimester	32.76	77.59	27.59	10.34	51.72
Lower than reference range					
1st trimester	3.09	13.40	3.09	53.61	1.03
2nd trimester	3.17	52.38	17.46	39.68	12.50
3rd trimester	6.90	74.14	0	3.45	12.07
Higher than reference range					
1st trimester	2.06	17.53	28.87	0	67.01
2nd trimester	1.59	4.76	19.05	0	41.07
3rd trimester	25.86	3.45	27.59	6.89	39.65

The reference ranges for pregnant women were TSH (0.1-4.0 μIU/mL, first trimester; 0.2-4.0 μIU/mL, second trimester; 0.3-4.0 μIU/mL, third trimester), T_3 (97-149 ng/dL, first trimester; 117-169 ng/dL, second trimester; 123-162 ng/dL, third trimester), T_4 (6.5-10.1 μg/dL, first trimester; 7.5-10.3 μg/dL, second trimester; 6.3-9.7 μg/dL, third trimester), free T_4 (0.8-1.2 ng/dL, first trimester; 0.6-1.0 ng/dL, second trimester; 0.5-0.8 ng/dL, third trimester), and TBG (18-32 μg/mL, first trimester; 28-40 μg/mL, second trimester; 26-42 μg/mL, third trimester). [26, 27]

Table S3. Multiple linear regression [a] in concentrations of thyroid hormones in association with unit change in oxidative/ nitrosative stress biomarkers concentrations in visit 1 (N=97).

Thyroid hormones/ oxidative/ nitrosative stress biomarkers	**8-OHdG**	**8-NO_2Gua**	**HNE-MA**	**8-isoPG$F_{2\alpha}$**	**MDA**
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
TSH	-0.001 (-0.37, 0.37)	-0.55 (-1.53, 0.42)	0.02 (-0.13, 0.17)	-0.07 (-0.32, 0.17)	-0.10 (-0.46, 0.26)
T_3	0.04 (-0.07, 0.14)	-0.07 (-0.34, 0.20)	-0.01 (-0.05, 0.04)	0.02 (-0.05, 0.09)	0.02 (-0.08, 0.11)
T_4	0.01 (-0.05, 0.08)	-0.08 (-0.26, 0.09)	-0.02 (-0.05, 0.00)	-0.02 (-0.06, 0.03)	0.04 (-0.02, 0.11)
Free T_4	0.03 (-0.05, 0.12)	0.13 (-0.10, 0.35)	-0.01 (-0.04, 0.03)	-0.02 (-0.08, 0.04)	-0.05 (-0.13, 0.03)
TBG	0.05 (-0.05, 0.14)	-0.15 (-0.40, 0.10)	-0.01 (-0.05, 0.03)	-0.02 (-0.08, 0.05)	0.08 (-0.01, 0.17)
T_3 / TSH	0.04 (-0.35, 0.43)	0.49 (-0.53, 1.50)	-0.03 (-0.19, 0.13)	0.10 (-0.16, 0.35)	0.11 (-0.26, 0.49)
T_3 / T_4	0.02 (-0.07, 0.12)	0.02 (-0.23, 0.27)	0.02 (-0.02, 0.05)	0.04 (-0.03, 0.10)	-0.03 (-0.12, 0.06)
TSH / T_4	-0.02 (-0.40, 0.37)	-0.47 (-1.47, 0.53)	0.05 (-0.11, 0.20)	-0.06 (-0.31, 0.20)	-0.14 (-0.51, 0.22)
TSH / Free T_4	-0.03 (-0.42, 0.35)	-0.68 (-1.69, 0.33)	0.03 (-0.12, 0.19)	-0.06 (-0.31, 0.20)	-0.05 (-0.42, 0.32)
T_4 / Free T_4	-0.02 (-0.12, 0.09)	-0.21 (-0.47, 0.06)	-0.01 (-0.05, 0.03)	0.004 (-0.06, 0.07)	0.09 (-0.01, 0.19)
T_3 / TBG	-0.01 (-0.10, 0.08)	0.09 (-0.15, 0.32)	0.003 (-0.03, 0.04)	0.04 (-0.02, 0.10)	-0.06 (-0.15, 0.02)
T_4 / TBG	-0.04 (-0.11, 0.04)	0.07 (-0.12, 0.26)	-0.01 (-0.04, 0.02)	-0.000 (-0.05, 0.05)	-0.04 (-0.11, 0.04)
Free T_4 / TBG	-0.02 (-0.14, 0.11)	0.28 (-0.05, 0.60)	0.000 (-0.05, 0.05)	-0.004 (-0.09, 0.08)	**-0.12 (-0.24, -0.01)** *

[a] adjusted for age and creatinine; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table S4. Multiple linear regression [a] in concentrations of thyroid hormones in association with unit change in oxidative/ nitrosative stress biomarkers concentrations in visit 2 (N=63).

Thyroid hormones/ oxidative/ nitrosative stress biomarkers	**8-OHdG**	**8-NO_2Gua**	**HNE-MA**	**8-isoPG$F_{2\alpha}$**	**MDA**
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
TSH	0.02 (-0.34, 0.38)	0.25 (-0.46, 0.96)	-0.07 (-0.21, 0.07)	-0.004 (-0.20, 0.19)	-0.17 (-0.53, 0.20)
T_3	-0.04 (-0.15, 0.06)	0.10 (-0.10, 0.30)	-0.02 (-0.06, 0.02)	0.04 (-0.02, 0.09)	-0.05 (-0.15, 0.06)
T_4	**-0.15 (-0.28, -0.02)** *	**0.33 (0.08, 0.59)** *	-0.05 (-0.10, 0.00)	**0.08 (0.01, 0.15)** *	0.01 (-0.12, 0.14)
Free T_4	0.01 (-0.06, 0.07)	-0.04 (-0.17, 0.09)	-0.01 (-0.03, 0.02)	-0.002 (-0.04, 0.03)	0.01 (-0.05, 0.08)
TBG	**-0.13 (-0.25, -0.02)** *	**0.30 (0.08, 0.53)** **	-0.02 (-0.07, 0.02)	**0.08 (0.01, 0.15)** *	-0.06 (-0.18, 0.06)
T_3 / TSH	-0.06 (-0.44, 0.31)	-0.15 (-0.90, 0.59)	0.04 (-0.10, 0.19)	0.04 (-0.17, 0.25)	0.12 (-0.26, 0.50)
T_3 / T_4	0.10 (-0.05, 0.26)	-0.23 (-0.55, 0.08)	0.02 (-0.04, 0.09)	-0.04 (-0.13, 0.05)	-0.05 (-0.22, 0.11)
TSH / T_4	0.17 (-0.23, 0.56)	-0.08 (-0.86, 0.70)	-0.02 (-0.18, 0.13)	-0.08 (-0.30, 0.14)	-0.17 (-0.57, 0.22)
TSH / Free T_4	0.01 (-0.36, 0.38)	0.29 (-0.44, 1.02)	-0.06 (-0.21, 0.08)	-0.002 (-0.21, 0.20)	-0.18 (-0.55, 0.20)
T_4 / Free T_4	**-0.15 (-0.28, -0.03)** *	**0.37 (0.13, 0.62)** **	-0.04 (-0.09, 0.01)	**0.08 (0.01, 0.15)** *	-0.003 (-0.13, 0.12)
T_3 / TBG	0.07 (-0.04, 0.19)	-0.19 (-0.42, 0.04)	0.004 (-0.04, 0.05)	-0.03 (-0.09, 0.04)	0.01 (-0.11, 0.14)
T_4 / TBG	0.07 (-0.06, 0.20)	-0.10 (-0.35, 0.15)	0.001 (-0.05, 0.05)	-0.01 (-0.09, 0.06)	0.04 (-0.10, 0.17)
Free T_4 / TBG	0.14 (-0.01, 0.29)	**-0.35 (-0.64,-0.07)** *	0.02 (-0.04, 0.08)	**-0.09(-0.18,-0.01)** *	0.07 (-0.09, 0.23)

[a] adjusted for age and creatinine; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table S5. Multiple linear regression [a] in concentrations of thyroid hormones in association with unit change in oxidative/ nitrosative stress biomarkers concentrations in visit 3 (N=58).

Thyroid hormones/ oxidative/ nitrosative stress biomarkers	**8-OHdG**	**8-NO_2Gua**	**HNE-MA**	**8-isoPG$F_{2\alpha}$**	**MDA**
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
TSH	-0.14 (-0.73, 0.44)	-0.52 (-2.30, 1.25)	-0.05 (-0.27, 0.16)	-0.13 (-0.38, 0.11)	0.25 (-0.36, 0.87)
T_3	-0.01 (-0.18, 0.15)	-0.01 (-0.51, 0.49)	0.04 (-0.03, 0.10)	-0.03 (-0.10, 0.04)	-0.10 (-0.27, 0.08)
T_4	-0.04 (-0.14, 0.06)	0.20 (-0.11, 0.50)	0.02 (-0.02, 0.06)	-0.01 (-0.06, 0.03)	-0.04 (-0.15, 0.06)
Free T_4	-0.03 (-0.12, 0.06)	0.003 (-0.28, 0.28)	0.01 (-0.03, 0.04)	0.02 (-0.02, 0.06)	**-0.11 (-0.21, -0.01)** *
TBG	-0.03 (-0.18, 0.12)	0.07 (-0.38, 0.51)	0.04 (-0.02, 0.09)	-0.05 (-0.11, 0.01)	0.13 (-0.03, 0.28)
T_3 / TSH	0.13 (-0.49, 0.75)	0.51 (-1.35, 2.38)	0.09 (-0.14, 0.32)	0.10 (-0.16, 0.36)	-0.35 (-1.00, 0.29)
T_3 / T_4	0.03 (-0.13, 0.19)	-0.21 (-0.69, 0.27)	0.02 (-0.04, 0.08)	-0.02 (-0.08, 0.05)	-0.05 (-0.22, 0.11)
TSH / T_4	-0.11 (-0.72, 0.51)	-0.72 (-2.56, 1.12)	-0.07 (-0.30, 0.15)	-0.12 (-0.37, 0.14)	0.30 (-0.34, 0.93)
TSH / Free T_4	-0.11 (-0.72, 0.49)	-0.53 (-2.35, 1.30)	-0.06 (-0.29, 0.16)	-0.15 (-0.40, 0.10)	0.36 (-0.27, 1.00)
T_4 / Free T_4	-0.01 (-0.11, 0.09)	0.20 (-0.11, 0.51)	0.01 (-0.03, 0.05)	-0.03 (-0.08, 0.01)	0.07 (-0.04, 0.18)
T_3 / TBG	0.02 (-0.16, 0.19)	-0.08 (-0.60, 0.45)	-0.001 (-0.07, 0.06)	0.02 (-0.05, 0.09)	-0.22 (-0.40, -0.04)
T_4 / TBG	-0.01 (-0.14, 0.12)	0.13 (-0.26, 0.52)	-0.02 (-0.07, 0.03)	0.03 (-0.02, 0.09)	-0.17 (-0.31, -0.03)
Free T_4 / TBG	-0.001 (-0.18, 0.18)	-0.06 (-0.60, 0.47)	-0.03 (-0.10, 0.04)	0.07 (-0.01, 0.14)	**-0.24 (-0.42, -0.05)** *

[a] adjusted for age and creatinine; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.