STROBE checklist (cross-sectional studies)

All applicable items are now addressed.

Item	No.	Recommendation	Where reported	Status
Title and abstract	1a	Indicate the design with a commonly used term	Title ("cross-sectional analysis")	Done
	1b	Informative, balanced summary	Abstract	Done
Background/rationale	2	Scientific background and rationale	Introduction, paragraphs 1–3	Done
Objectives	3	State objectives and hypotheses	Introduction, last paragraph	Done
Study design	4	Key elements of design early in the paper	Methods: Data source	Done
Setting	5	Setting, locations, dates of recruitment and data collection	Methods: Data source (NHANES 2007–2012)	Done
Participants	6a	Eligibility criteria, sources and methods of selection	Methods: Study population	Done
Variables	7	Define outcomes, exposures, confounders, effect modifiers	Methods: Exposures, Outcomes, Covariates; Statistical analysis (effect modification by LT4)	Done

Item	No.	Recommendation	Where reported	Status
Data sources/measurement	8	Sources of data and methods of assessment	Methods: Exposures (24-h recall, food codes 921), Outcomes (laboratory TSH, FT4)	Done
Bias	9	Efforts to address potential sources of bias	Sensitivity analyses; Discussion: Limitations (recall error, confounding, dose titration)	Done
Study size	10	Explain how the study size was arrived at	Methods: Study population (fixed by NHANES thyroid samples; no power calculation)	Done
Quantitative variables	11	How quantitative variables were handled; groupings and why	Methods: Exposures (cups, categories, 10:00 cut-off), Outcomes (log TSH, TSH >4.5)	Done
Statistical methods	12a	All methods, including those used to control confounding	Methods: Statistical analysis	Done
	12b	Methods for subgroups and interactions	Methods: Statistical analysis (coffee × LT4 product terms)	Done

Item	No.	Recommendation	Where reported	Status
	12c	How missing data were addressed	Methods: Statistical analysis (complete-case)	Done
	12d	Analytical methods accounting for sampling strategy	Methods: Statistical analysis (weights, strata, PSUs; design-based check)	Done (Taylor linearization with R survey for the primary analysis)
	12e	Sensitivity analyses	Methods: Statistical analysis; Table 2	Done
Participants	13a	Numbers at each stage of the study	Methods: Study population; Results: Participants	Done
	13b	Reasons for non-participation at each stage	Methods: Study population (exclusion criteria)	Done (numbers excluded at each step)
	13c	Consider a flow diagram	Results: Participants, Figure 1	Done (Figure 1)
Descriptive data	14a	Characteristics of participants; information on exposures and confounders	Table 1	Done
	14b	Number with missing data for each variable	Not reported	Done (footnote to Table 1)
Outcome data	15	Numbers of outcome events or summary measures	Table 1 (TSH median, % >4.5 and <0.45 mIU/L)	Done

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Main results	16a	Unadjusted and adjusted estimates with precision; which confounders and why	Table 2 (Models 1 and 2)	Done (unadjusted row in Table 2)
	16b	Category boundaries for categorized continuous variables	Methods: Exposures; Table 3	Done
	16c	Translate relative risk into absolute risk if relevant	Percentage TSH difference given; absolute risk not applicable	Not applicable
Other analyses	17	Subgroups, interactions, sensitivity analyses	Results: Exploratory analyses; Tables 2 and 3	Done
Key results	18	Summarise key results with reference to objectives	Discussion, paragraph 1	Done
Limitations	19	Sources of potential bias or imprecision; direction and magnitude	Discussion: Limitations	Done
Interpretation	20	Cautious overall interpretation considering objectives, limitations, multiplicity and other evidence	Discussion, paragraphs 2–3	Done
Generalisability	21	External validity of the results	Partly in Limitations (US data; tablet formulations 2007–2012)	Done (last sentence of Limitations)

Item	No.	Recommendation	Where reported	Status
Funding	22	Source of funding and role of funders	Declarations (no funding)	Done