

Letter to the Editor

Intra-individual and inter-individual variations in iodine intake and excretion in adult women: implications for sampling

This letter is regarding the recent publication of 'Intra-individual and inter-individual variations in iodine intake and excretion in adult women: implications for sampling' by Chen *et al.*⁽¹⁾. The authors addressed a very important issue in the assessment of iodine status using urinary iodine concentration (UIC). They reported that the mean intra-individual variation was lower than the mean inter-individual variation for 24-h urinary iodine excretion, 24-h UIC and iodine intake (48, 55 and 63 % *v.* 24, 32 and 14 %, respectively) in a group of participants who were given prescribed diets for 12 d during the 4-week study⁽¹⁾. Although UIC can be used to reflect recent iodine status of a population, there is high intra- and inter-individual variation between- and within-individuals, which further increases UIC distribution spread^(2,3).

Although there are many factors including sex, age, diet, season and circadian rhythms that can influence intra- and inter-individual variation of UIC, it is also important to acknowledge that the existing iodine status in individuals or populations might affect the intra- and inter-individual variation of UIC which might potentially reflect the utilisation and absorption of dietary iodine by the thyroid⁽⁴⁾. To my knowledge, there are no studies that have extensively compared the difference in intra- and inter-individual variation of UIC between iodine-deficient and -sufficient individuals or populations. For example, the range of inter-individual 24-h UIC variation for iodine-deficient and -sufficient individuals in the study was 29–64 % and 46–69 %, respectively, which were not discussed by the authors⁽¹⁾. This is particularly important if we are planning to further consider the usefulness of UIC in the determination of recent iodine status in individuals. In addition, it is also imperative to consider if the adjustment of UIC by creatinine excretion (iodine:creatinine ratio) could be used to decrease or increase intra- and inter-individual variation of urinary iodine and how this could further influence UIC distribution spread^(5,6). This would then help to establish some sampling guidelines or provide some inputs for understanding high intra- and inter-individual variation of UIC when assessing iodine status in populations or individuals with other biomarkers of iodine status.

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