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Concerns with Urinary Iodine Excretion Level in a Single Random Sample

The research article published in a recent issue of *Indian Pediatrics* [1] highlighted the success of National Iodine Deficiency Control Program in which universal salt iodization is an integral activity. The investigators found a Total goiter rate (TGR) of 2.08%, median Urinary iodine excretion (UIE) level of 175 µg/L and approximately 72% of subjects were consuming adequately iodized salt. In this study, 'on-the-spot urine' samples were collected from children and on the basis of this UIE level, proportion of children with mild, moderate and severe iodine deficiency were reported.

We submit this interpretation is scientifically not valid due to following:

1. WHO recommends that median UIE level estimated from spot urine samples of individuals in a cluster is for defining iodine status for the cluster/ population and is not intended for individuals [2].
2. Defining iodine status at the individual level remains challenging. At least ten spot urine samples or 24-hour urine samples are needed to assess individual iodine status with 20% precision [3]. The spot samples may be collected at any time of the day, except the first morning samples. The random urine samples should be spread over a time frame to cover potential variations. UIE in spot samples varies substantially between days and seasons [4], as a consequence of a circadian rhythm of iodine excretion [5], and due to differences in fluid intake [6]. Therefore, a single spot UIE is not a suitable indicator for individual assessment. Urinary iodine excretion (UIE) in 24-hour collections is regarded as a better method to reflect an individual's true daily excretion.

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Assessment of Iodine Deficiency Disorders among School Children in Madhya Pradesh

We read an article by Bali, *et al*. [1] and would like to appreciate the authors for highlighting the current status in their district as well as irregularities of national iodine deficiency control programme (NIDCP). The study also highlights the negative implication of unmonitored universal salt iodization (USI) and emphasize the need for periodic monitoring. However, there are certain points we would like to highlight, which might bring more clarity on this issue:

1. Authors defined the cut-off for 'inadequate iodized salt', and 'insufficient urinary iodine excretion (UIE)'. But further cutoffs for defining the severity as well as toxicity levels are not provided. Their description in methodology will be an ease for readers. Also, UIE <200 µg/L was considered "insufficient" by the authors, whereas WHO as well as NIDCP uses UIE <100 µg/L for defining the same [2-4]. Using a different cut-off will change the prevalence and its public health implications.
2. The median UIE level of the population was 175 µg/L, which signifies 'adequate iodine nutrition' in the population [2,4]. The results of individual patient/subgroup should not be used for drawing the conclusion as the results of spot sample may vary significantly among different specimens from the same individual [4].
3. As per WHO, if the median UIE levels of a population are 'insufficient' the level of iodization of salt, along with factors affecting the utilization of iodized salt (production level quality, packaging, and transport methods, salt intake and cooking habits) should be reassessed [4]. In this study, all households were using packed salt but there is no mention whether it was iodized or not. Also, 432 (80%) out of 540 samples were inadequately iodized at the consumer level. If these levels are despite using iodized salt, it raises serious concern at the level of iodization at production, packing, transport and storage level, and warrants urgent administrative action.
4. A majority (80%) of the population was using inadequately iodized salt, but 36% of children had UIE in toxic level. How can this finding be explained?
5. The authors used only semi-quantitative rapid test kits for iodine estimation of the salt. WHO recommends using quantitative titration method for iodine analysis in sub-sample of salt that has been analyzed by rapid kit [4].

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Editor's note: We did not receive a point-by-point reply to any of these two letters from authors of the study, despite reminders.

Resurgence of Chikungunya: A New Threat to Public Health

We read the recent article by Maria, *et al*. [1] and appreciate them for highlighting this underreported/underdiagnosed condition. Dr Jacob John, in an accompanying editorial [2], has highlighted the public health importance and need for urgent action. We would like to highlight certain points, which might bring more clarity on this issue:.

1. Authors did not mention the gestational age of the study subjects. It is important to ascertain gestation before diagnosing neonatal encephalopathy as the recently proposed definition [3] is applicable for neonates born at or above 35 weeks. Also, the case definition of neonatal encephalopathy is not clearly stated in this paper.
2. The authors did not provide any reference for defining hypoglycorrhachia, increased protein and pleo-cytosis in cerebrospinal fluid. The cut-offs used are quite different from those proposed by National Neonatology Forum [4], and again are dependent upon the gestational age of the neonate. These arbitrary cut-offs may lead to bias in diagnosing meningitis..
3. This study highlights the neurotropism of