Tibetan adults are now iodine sufficient


Background
Tibet, a region in central Asia with average altitudes >4000 m, historically had severe iodine deficiency and a high prevalence of thyroid diseases, especially among those living in the territory’s eastern and southern areas. The region remained one of seven provinces in China that did not meet the goal of eliminating IDD by the year 2000 [1,2]. An annual iodine supplementation program was implemented in Tibet from 2000 to 2004, especially targeting pregnant and lactating women. Individuals were provided with capsules containing iodized oil annually, and the program achieved a coverage of almost 95% of the target population [3]. However, a multicenter study published in 2008 found that Tibet was the only province in China in which <90% of the population were using iodized salt [4]. By 2018, the total population of Tibet had increased to 3.44 million, but previous studies that reported iodine deficiency in Tibet [1,2] were conducted >10 y ago. Thus, there is a lack of recent province-wide data on the iodine status of the Tibetan population.

Methods
From September 2016 to August 2018, participants were recruited from the general Tibetan population in four cities whose locations spanned a wide region of western China and were found at three altitude levels: Group A (Ali, altitude: ~4300 m) had 238 men and 264 women, Group B (Shigatse and Lhasa, altitude: ~3700 m) consisted of 250 men and 311 women, and Group C (Nyingchi, altitude: ~2900m) included 142 men and 294 women. Participants were required to have lived in Tibet for >1 y. Urine iodine concentrations (UICs) were measured. In all, 1499 healthy adults (all >19 years-old; mean age 40 years) were enrolled in the study.

Results
The median (m) UIC was 137.9 mg/L. About 30% had UICs <100 µg/L, and 9.6% had UICs >300 µg/L. Divided into four age groups: 19 to 29, 30 to 39, 40 to 49, and 50 to 64 years, the mUICs decreased with age (152.1, 152.1, 139, and 121.8 µg/L).

There was a low prevalence of thyroid disorders: the prevalence of clinical hyperthyroidism, clinical hypothyroidism, subclinical hyperthyroidism and subclinical hypothyroidism were 0.5%, 1.3%, 1.7% and 17.9%, respectively. The prevalence of almost all thyroid disorders was higher in women than in men.

Conclusions
This multicenter cross-sectional study found that the iodine status of adults in Tibet is adequate, and most adults have normal thyroid function. The results of the present study suggested that the iodine fortification and supplementation programs have yielded population-wide benefits in the Tibetan region. However, the median UIC (137.9 µg/L) was lower than that of the Chinese population in other lower altitude regions (5). The authors suggested that one contributing factor in the Tibetan population could be the method of food preparation. Tibetans eat a lot of stewed food and stewing may lead to a loss of iodine in the food and salt.

However, the present study did not include some important subgroups of the population, such as pregnant women and children, who should be included in future studies.

References