

Abstract

Iodine Intake and Status of Mid-Life Women in Auckland, with Low Bread Intakes [†]

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Iodine concentrations are low in the New Zealand food supply and in 2009 the mandatory fortification of all commercial bread (except organic) with iodised salt was implemented. The aim of this study was to investigate if low intake of commercial bread products by mid-life women results in low iodine intake and status.

This cross-sectional study recruited women who consumed less than one slice/day of fortified commercial bread. Assessment of iodine intake and status was determined via a three-day diet diary (3DDD) and 24-h urine collection. Iodine concentration was determined in urine samples using inductively-coupled plasma mass spectrometry.

Forty-six mid-life women living in Auckland were recruited, aged 40–63 years and without diagnosed thyroid disease. The median urinary iodine concentration (UIC) was 49 (35, 78) µg/L, which indicates deficiency. The median urinary iodine excretion was 108 (74, 154) µg/day, which equated to an estimated median iodine intake of 120 (82, 171) µg/day, based on 90% excretion of iodine in urine. Median iodine intake based on 3DDD was lower at 63 (46, 82) µg/day. Median intakes were below the Recommended Dietary Intake (RDI) of 150 µg/day, with over 91% below the Estimated Average Requirement (EAR) of 100 µg/day.

This small study suggested that mid-life women living in New Zealand with low intakes of commercial bread are at risk of inadequate dietary iodine intake. Continued monitoring of iodine intakes within the whole population is required. Further research is necessary to investigate if these low intakes affect thyroid function. A much larger diet survey is required to determine the extent of low bread consumption. Alternative strategies may be required to ensure the whole New Zealand population has adequate iodine intake, such as raising awareness of the best dietary sources of iodine amongst at-risk groups or consideration of the fortification of other foods.



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