**ANEMIA IN THE TURKS AND CAICOS ISLANDS: EXPLORING THE DIETARY LINK**

**Objective:** To conduct the first national dietary survey and examine inter-island differences in and relationships between iron consumption and reports of anemia.

**Design and Methods:** A total of 144 households, randomly selected from electoral lists for Grand Turk (n=48), Providenciales (n=46), and Middle Caicos (n=50), participated in the survey. Food consumption (via food frequency questionnaire), self-reported health history, and sociodemographic data were collected from female household-heads during home interviews. Data on frequency of consumption and tabulated iron score for each “normal” food portion size were used to calculate each household’s iron-intake-score. Chi-squared analyses were used to compare inter-island intake score categories.

**Results:** Households were assigned to low (<100), medium (100–160), or high (>160) iron-intake-score categories. The proportion of households with low scores was lower on Grand Turk (<5%) and Providenciales (0%) compared to Middle Caicos (20%), the least developed island.

**Conclusion:** Suboptimal iron intakes, especially on Middle Caicos, support the prevailing view that anemia in vulnerable groups could be of dietary origin. Findings highlight the need for additional research to determine how various factors (eg, diet, supplement use, physiology, and environment) impact iron status. In the short term, we must identify and treat cases and provide culturally appropriate nutrition education to increase dietary iron intake and promote safe use of multivitamin/mineral supplements. National dependence on imported foods makes this the most viable public health intervention option until the etiology of anemia is fully determined. (Ethn Dis. 2007;17:313–319)

**Key Words:** Anemia, Caribbean, Diet, Health, Iron, Turks and Caicos Islands

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**INTRODUCTION**

Iron deficiency anemia (IDA) is a long-standing public health concern in the Turks and Caicos Islands (TCI), a Caribbean self-governing overseas territory of the United Kingdom with a predominantly (>90%) Black population.1–3 Iron deficiency anemia (IDA)1 is the only reported public health nutrient deficiency threat2 to vulnerable groups, namely women and children. Concerns, however, exist over diet’s role as a modifiable risk factor for chronic diseases such as heart disease and diabetes. One of every four deaths (27.3%) between 1990 and 1995 was due to diseases of the circulatory system, mainly strokes and heart attacks.2 Diet-related health concerns are extremely significant in the TCI, with: 1) a growing economy (4.9% in 2000)4; and 2) no food insecurity or undernutrition concerns.2

Reports show that the anemia threat in TCI persisted >20 years after medical practitioners first published, in 1974, the high prevalence of anemia (hemoglobin [Hb] <10 g/dL) in school-aged children and attributed it to iron deficiency.1,2 Using World Health Organization (WHO) standards,5 during the 1980s other investigators reported the prevalence of anemia (Hb <12 g/dL) in school-aged children at 69%, 35%, and 97% on Grand Turk (GDT), Providenciales (Provo) and Middle Caicos (MC), respectively.3 When Hb <10 g/dL was the cutoff, the corresponding values were 9%, 4%, and 49%.3 More recent data report prevalence rates among pregnant women from Provo and GDT in 1996 as 17% and 24%, respectively.2 The present study is the first and only national dietary survey conducted to date in TCI to assess food habits and dietary iron consumption.

Iron deficiency, the most prevalent nutritional deficiency worldwide, is believed to affect 4–5 billion people.6 Reportedly, 30% of the world’s population is anemic, and impaired iron status accounts for >50% of the anemia.6–8 In developing countries, as much as 50% of pregnant women and preschool-aged children have IDA.9

The decision as to which reference standard to use in defining anemia is not unanimous, and the application of a uniform standard may be questioned as data show that hemoglobin distribution varies across racial and ethnic groups.10–12 Even so, WHO’s standards are the most commonly used.5 Data from the National Health and Nutrition Examination Survey (NHANES) II showed that Black Americans had hemoglobin concentrations that were, on average, lower than those of White Americans, even after adjusting for iron intake.12

A diet’s iron content is one nutrition-related factor that affects bioavailability and nutritional adequacy.13 Other factors include the type of iron (heme vs nonheme),7 composition of meals (presence of absorption enhancers and inhibitors),14 and other undefined physiologic factors.15 In many developing countries, inadequate iron absorption from the largely vegetarian diets (nonheme iron) is the primary cause of anemia.16

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