What screening should immigrants have during their first medical visit in the United States?

Evidence-Based Answer
Screening for tuberculosis (TB) with a purified protein derivative (PPD) is probably indicated for all immigrants over 6 months of age. Screening for hepatitis B and anemia may also be indicated depending on region of origin. HIV and syphilis screening should be done if not carried out prior to immigration. (SOR C, extrapolation from cohort studies.) Immigrants should also receive routine health screening appropriate for their age and sex. (SOR A, based on guidelines from the US Preventive Services Task Force.)

Potential immigrants to the United States must undergo a medical examination by a physician certified by the Centers for Disease Control and Prevention as part of the immigration application process. For immigrants aged 15 years and older, this examination includes screening for TB with a chest x-ray, serology tests for syphilis and HIV, and review of routine vaccination status. It also includes a complete history and physical, including screening questions for chancroid, gonorrhea, granuloma inguinale, lymphogranuloma venereum, Hansen’s disease, mental disorders, and substance abuse.

Screening for TB using a PPD may be indicated for every immigrant older than 6 months regardless of bacille Calmette-Guérin (BCG) vaccine status. In 2003, 14,874 cases of active TB infection were recorded in the United States, 6,903 (41%) of which were in people born outside the United States.1 DNA fingerprinting of 546 TB strains isolated in New York City between 1990 and 1998 suggested that patients born outside the United States had an odds ratio (OR) of 0.31 (95% confidence interval [CI], 0.14–0.66) for a newly transmitted infection, compared with having a reactivation of a latent infection.2 This finding suggests foreign-born patients with active TB have more reactivation of the disease than new infections.

A large study from the Netherlands compared cases of latent TB discovered through screening with those discovered passively in immigrants. Cases discovered through screening were less likely to have positive sputum cytology (OR 0.5; 95% CI, 0.3–0.8) and less likely to require hospitalization (OR 0.2; 95% CI, 0.1–0.2).3 This study also found that 302 of 454 (66%) of new TB cases found through screening were discovered during the first 6 months that the immigrant resided in the Netherlands, compared with 114/368 (31%) of cases discovered passively. The authors estimated that screening decreased the total infectious time by 30%.

Screening for hepatitis B is another consideration for high-risk patients. Hepatitis B is endemic in many parts of the world, including Asia (8%–10% chronic infection rate), Eastern Europe, the Middle East, the Amazon basin, and the Indian subcontinent (2%–5% chronic infection rate). Because there is a vaccine for this disease, screening will allow the physician to identify and vaccinate household contacts of infected persons, thereby preventing transmission.4

Testing stool for ova and parasites is indicated if height or weight is less than the fifth percentile or if anemia or gastrointestinal symptoms are present. Prevalence of parasites in refugees of all ages in Minnesota was found to be 22%.5 The highest prevalence is found in Southeast Asian and Latin American populations. One study of Southeast Asian refugees in Canada found that screening and treatment of clinically significant intestinal parasitic infections decreased the prevalence from 70% to 31% (P<.01) over 6 months.6

A higher prevalence of anemia is often found in immigrants secondary to iron deficiency, hemoglobinopathies, infection with hookworm, and malaria. A study from Denmark comparing pregnant women from eastern Mediterranean and Asian regions with pregnant ethnic Danish women found a higher prevalence of anemia in the immigrant group (20.0%) compared with the Danish group (4.9%) (P<.0001).7 Most of the anemic immigrant women were found to have iron deficiency anemia. Women found to have hemoglobinopathies were excluded from this study.
Besides the tests that are indicated based on the patient’s country of origin, all patients should receive screening examinations and preventive care appropriate for their age and sex.

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What are the benefits of treating subclinical hypothyroidism?

Evidence-Based Answer

While subclinical hypothyroidism (SCH) has been associated with increased cardiovascular morbidity, no clear evidence exists to suggest that treatment improves patient-oriented outcomes. In the short term, treating SCH improves diastolic function and cardiac relaxation time, but the clinical significance of these changes is uncertain. (SOR A, based on a systematic review.)

A recent Cochrane review evaluated the effects of thyroid hormone replacement for SCH. This review included 12 randomized controlled trials involving 350 patients. The results were as follows:

- Three trials assessed cardiac function and found significant improvement in diastolic function in isovolumic relaxation time (weighted mean difference –8.5 ms, 95% confidence interval [CI], –15 to –1.1) and left ventricular relaxation time with thyroid hormone replacement. However, these studies included individuals with high serum thyroid-stimulating hormone (TSH) levels and previous thyroid disease. The clinical significance of these cardiac changes was not described.

The Cochrane review also summarized 2 large cohort studies that evaluated cardiovascular morbidity and mortality. One was a 12-year cohort study of 3,233 people older than 65 years. This study did not find any difference in the risk of coronary heart disease, cerebrovascular disease, or cardiovascular death between euthyroid and SCH patients. In another cohort study of 2,730 men aged 70 to 79 years, over a 4-year period, the rate of congestive heart failure was increased among patients whose TSH was higher than 7 mU/L (hazard ratio 2.49; 95% CI, 1.2–5.18); the rate of coronary heart disease events, strokes, and mortality did not differ among TSH levels.

A recent meta-analysis published since the Cochrane review identified 15 studies (2,531 SCH patients and 26,491 euthyroid patients) investigating whether age and sex influence ischemic heart disease (IHD) prevalence and mortality in people with SCH. Among patients younger than 65 years, patients with SCH had a higher prevalence of IHD (odds ratio [OR] 1.57; 95% CI, 1.19–2.06) and a slightly increased risk of cardiovascular mortality (OR 1.37; 95% CI, 1.04–1.79) compared with euthyroid patients in the same age group. For patients older than 65, the presence or absence of SCH did not affect the incidence of IHD (OR 1.01; 95% CI, 0.87–1.18) or cardiovascular mortality (OR 0.85; 95% CI, 0.56–1.29). However, this review did not evaluate if treatment decreases this risk, or which vascular risk factors would benefit from treating SCH.

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1. Villar HC, Saconoato H, Valente O, Atallah AN. Thyroid hormone replacement for subclinical hypothyroidism. Cochrane Database Syst Rev. 2007; (3):CD003419. (LOE 1a)