

Article

Nutrient Composition Comparison between the Low Saturated Fat Swank Diet for Multiple Sclerosis and Healthy U.S.-Style Eating Pattern

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Abstract: Multiple sclerosis (MS) is an incurable degenerative disease that attacks the central nervous system. Ray Swank proposed a low saturated fat diet to treat MS around 1950 and showed delayed disease progression in his patients. However, there is insufficient evidence to recommend this diet for MS and dietary intake recommendations are the Dietary Guidelines for Americans (DGA). This study assessed the nutritional adequacy of seven-day menus developed by Swank and their compliance with the DGA. Menus were modeled for comparison with the DGA Healthy US-Style Eating Pattern (HEP) for males and females 31–50 years. Swank recommended dietary supplements corrected menu shortfalls in vitamins D, E, calcium, fiber and iron but not dietary fiber, potassium and choline. Healthy Eating Index-2015 score for Swank menus (57.2/100) indicated good compliance with the DGA. Nutritional adequacy of the Swank modeled diet was similar to HEP for 17 vitamins and minerals (Mean Adequacy Ratio = 74%) with similar shortfall nutrients except magnesium (HEP model and dietary fiber (Swank model). Alternate Healthy Eating Index-2015 scores for Swank male (56.1/100) and female (56.1/100) model diets were similar to HEP. Swank menus have similar nutritional adequacy as HEP in terms of foods high in dietary fiber, potassium and choline may be added as well as selection of foods to reduce sodium below the Threshold Upper Intake Level.

Keywords: low saturated fat diet; exemplary menus; nutritional adequacy; nutrient density; HEI-2015; AHEI-2015; multiple sclerosis; Swank diet

1. Introduction

Multiple sclerosis (MS) is an incurable immune-mediated, inflammatory disease that attacks the central nervous system. Persons with MS (or MS) may experience visual disturbances, cognitive and emotional changes, movement and balance difficulties, bowel and bladder dysfunction, pain and fatigue. The symptoms can wax and wane over time as myelin and axons are damaged and then partially repaired. As the disease progresses, the accumulated damage may lead to greater disability, but the disease course is unpredictable [1,2]. Symptoms consistent with MS were reported as early as the 1300s or 1400s but it was not until the pathology was associated with the symptoms in the 1800s [3,4] that MS as a distinct condition, separate from diseases such as Pott's disease, emerged [5,6]. Eventually diagnostic methods and scores to detect neurologists improved [7]. By 1950 MS was the most common neurological disease in the United States (US) [8] but there were no effective treatments [9].

Beginning in 1940 neurologist Ray Swank, MD, PhD began investigating the epidemiology of MS and proposed a low saturated fat dietary treatment [10] based on data suggesting that a higher