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Since publication of his article, the author reports no further potential conflict of interest.

1. Skeff KM, Stratos GA, Bergen MR, et al. The Stanford faculty development program for medical teachers: a dissemination

approach to faculty development for medical teachers. *Teach Learn Med* 1992;4:180-7.

2. Heath C, Heath D. *Switch: how to change things when change is hard*. New York: Broadway, 2010.

3. Wolfe RA. Organizational innovation: review, critique and suggested research directions. *J Manage Stud* 1994;31:405-31.

4. Khan Academy home page (<http://www.khanacademy.org/about>).

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Case 15-2012: Diplopia, Headaches, and Papilledema

TO THE EDITOR: Neurocysticercosis is endemic in most of the world, and it accounts for 2% of seizure cases in some areas of the United States.¹ Extraparenchymal neurocysticercosis, discussed in the Case Record involving a patient with this disease (May 17 issue),² is a slowly progressive disease that frequently involves the subarachnoid spinal space³ and can be fatal. It should be treated with surgery or antiparasitic agents until there are no remaining lesions.

Although it is more sensitive than computed tomography, magnetic resonance imaging may not show all lesions. Monoclonal antibody-based antigen detection, briefly mentioned in the discussion of management of subarachnoid cysticercosis, is highly specific for human cysticercosis. The use of antigen assays for immunodiagnosis is limited by their low sensitivity in cases with parenchymal cysts only. In extraparenchymal disease, however, serum antigen levels are usually much higher and become an excellent proxy for the presence and extension of live parasites: they correlate with the severity of infection,⁴ drop after successful therapy,⁵ and are rarely positive in calcified infections. We have also found a strong correlation between antigen level and lesion volume. Unfortunately, these assays currently have limited commercial availability and are restricted to research groups or reference diagnostic facilities.

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for the Cysticercosis Working Group in Peru

Dr. Dorny, through the Prince Leopold Institute of Tropical Medicine in Antwerp, Belgium, reports discussing and coordinating marketing of an enzyme-linked immunosorbent assay kit for cysticercosis antigen detection through a private company. No other potential conflict of interest relevant to this letter was reported.

1. Coyle CM, Mahanty S, Zunt JR, et al. Neurocysticercosis: neglected but not forgotten. *PLoS Negl Trop Dis* 2012;6(5):e1500.

2. Case Records of the Massachusetts General Hospital (Case 15-2012). *N Engl J Med* 2012;366:1924-34.

3. Callacondo D, Garcia HH, Gonzales I, et al. High frequency of spinal involvement in patients with basal subarachnoid neurocysticercosis. *Neurology* 2012;78:1394-400.

4. Garcia HH, Parkhouse RM, Gilman RH, et al. Serum antigen detection in the diagnosis, treatment, and follow-up of neurocysticercosis patients. *Trans R Soc Trop Med Hyg* 2000;94:673-6.

5. Garcia HH, Dorny P, Castillo Y, et al. Circulating antigen levels follow post-treatment evolution of subarachnoid neurocysticercosis. *J Neuroparasitol* 2010;1:N100804.

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THE DISCUSSANTS REPLY: Garcia and colleagues suggest that quantitative analysis of the cerebrospinal fluid or serum *Taenia solium* antigen level or both may be useful to help determine the length of treatment. Two monoclonal antibody-based tests are available in reference laboratories, including the Parasitic Diseases Branch of the Centers for Disease Control and Prevention.¹⁻³ It is believed that the detection of circulating parasite antigen reflects the presence of viable parasites and may permit assessment of the response to treatment.^{2,4,5} The assays are not standardized, so results vary among laboratories. However, high antigen levels are associated with subarachnoid disease,⁵ and a decrease in the amount of antigen over time appears to correlate with a change from active to inactive disease.⁴ We agree with Garcia and colleagues that antigen detection with the use of an enzyme-linked immunosorbent assay is a promising adjunctive tool to help guide therapy in patients with some forms of neurocysticercosis, but further studies involving patients with subarachnoid disease are needed.

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Since publication of their article, the authors report no further potential conflict of interest.

1. Dorny P, Brandt J, Zoli A, Geerts S. Immunodiagnostic tools for human and porcine cysticercosis. *Acta Trop* 2003;87:79-86.

2. Deckers N, Dorny P. Immunodiagnosis of *Taenia solium* taeniosis/cysticercosis. *Trends Parasitol* 2010;26:137-44.

3. Fleury A, Hernández M, Avila M, et al. Detection of HP10 antigen in serum for diagnosis and follow-up of subarachnoidal and intraventricular human neurocysticercosis. *J Neurol Neurosurg Psychiatry* 2007;78:970-4.

4. Garcia HH, Parkhouse RM, Gilman RH, et al. Serum antigen detection in the diagnosis, treatment, and follow-up of neurocysticercosis patients. *Trans R Soc Trop Med Hyg* 2000;94:673-6.

5. Rodriguez S, Dorny P, Tsang VC, et al. Detection of *Taenia solium* antigens and anti-*T. solium* antibodies in paired serum and cerebrospinal fluid samples from patients with intraparenchymal or extraparenchymal neurocysticercosis. *J Infect Dis* 2009; 199:1345-52.

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Potential Effect of the New York City Policy Regarding Sugared Beverages

TO THE EDITOR: New York City recently proposed a policy that would prohibit the sale of most sugar-sweetened beverages in quantities of more than 16 oz at all restaurants, including fast-food restaurants.¹ These beverages have been implicated as a contributor to obesity. We evaluated the potential effect of this policy on the consumption of calories from beverages at fast-food restaurants.

We combined data from two separate studies in which receipts were collected from consumers at fast-food restaurants, including 1624 receipts that listed a beverage (excluding milk shakes) from three different fast-food restaurants in four

separate cities (New York City; Newark, New Jersey; Philadelphia; and Baltimore) from 2008 through 2010.²⁻⁴ With these receipts, the corresponding survey from both studies, and data from the website of each restaurant, we were able to ascertain the number of calories in each beverage that was purchased.

If this policy were implemented, the maximum size for all sugar-sweetened beverages available for purchase would be 16 oz. We calculated the change in the number of calories from sugar-sweetened beverages per transaction if various proportions of randomly selected consumers who purchased a beverage subject to the policy bought the 16-oz size rather than a larger size; all other consumers were assumed to purchase two 16-oz beverages (32 oz in total) (Fig. 1). For each possible proportional change examined, 1000 bootstrapped simulations were performed to generate 95% confidence intervals. We performed these simulations for all beverages in the transaction and again for just sugar-sweetened beverages that were subject to the policy.

Of all the beverages purchased, 62% would be subject to the policy. Without the policy, the mean (\pm SD) calories from sugar-sweetened beverages per consumer was 197 ± 113 kcal. If 100% of consumers switched to 16 oz and 0% of consumers purchased 32 oz, the resulting change would be -63 kcal (95% confidence interval [CI], -61 to -66) per consumer. If 30% of consumers switched to 16 oz, the decrease would not be statistically distinguishable from zero. Only if 80% or more of consumers purchased 32 oz

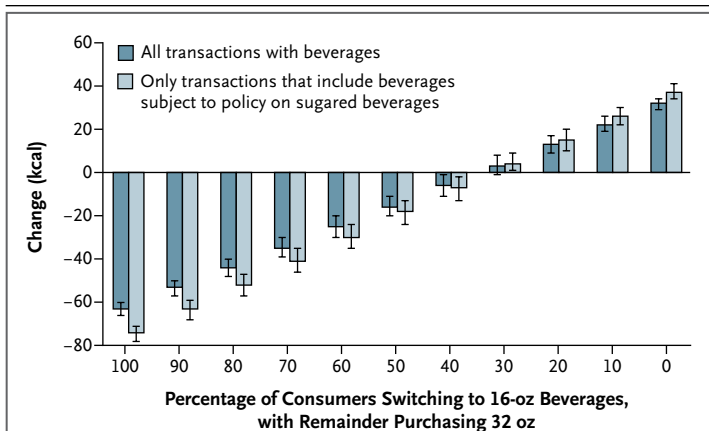


Figure 1. Changes in Calories from Sugar-Sweetened Beverages, According to Transaction.

The changes in calories from sugar-sweetened beverages purchased at fast-food restaurants are shown when consumers switch to a 16-oz beverage, with the remainder assumed to purchase 32-oz, or two 16-oz beverages. Vertical bars indicate 95% confidence intervals.