APPENDIX—Subset of the Questionnaire: Questions Pertaining to Premenstrual Symptoms

5. Do you experience *premenstrual* syndrome? (Premenstrual syndrome is an array of symptoms beginning approximately one week *prior* to *each* menstrual period and usually ending a couple of days *prior to your period*. Premenstrual syndrome is different from menstrual symptoms, which occur at the time of your period. Many of the most common symptoms of premenstrual syndrome are listed in question 6.)

6. If you do experience *premenstrual* syndrome, circle the severity of each of the following questions you experience. (If you do not experience premenstrual symptoms on a regular basis each month, skip to question 11.)

Depression:	Mild	Moderate	Severe
Tiredness:	Mild	Moderate	Severe
Irritability:	Mild	Moderate	Severe
Anxiety:	Mild	Moderate	Severe
Headaches:	Mild	Moderate	Severe
Breast swelling, tenderness:	Mild	Moderate	Severe
Craving for sweet foods:	Mild	Moderate	Severe
Craving for salty foods:	Mild	Moderate	Severe
Binge eating:	Mild	Moderate	Severe
Skin acne:	Mild	Moderate	Severe
Other: (please specify): _____	Mild	Moderate	Severe

(r = 0.33), binge eating and craving for sweet foods (r = 0.35), and binge eating and craving for salty foods (r = 0.33). With respect to Leviton's interest in whether there is one premenstrual syndrome or whether there are multiple such syndromes, we would like to point out that we did conduct a preliminary analysis of whether the consumption of caffeine-containing beverages was differentially related to particular premenstrual symptoms. The largest effect observed was for headaches, although each of the symptoms appeared to be related to caffeine-containing beverages. However, the difficulty with these analyses was that we were not able to isolate individual symptoms for analysis. Leviton asks whether we looked for the presence of several distinct patterns of premenstrual symptoms in our data. Our answer is yes. However, we were not able to identify such distinct patterns.

Leviton's third comment pertains to the possibility of uncontrolled confounding. He asks whether we considered socioeconomic status, presence of a psychiatric disorder, stress, exercise, time, or any other potential confounders. We are not as convinced as Leviton that each of these variables is causally related to premenstrual syndrome. In our judgment, the literature does not support this interpretation of the available data. Many of the reported studies are of poor quality, having design problems (for example, no comparison group, or the opportunity for selection bias because of the use of subjects seeking care from specialty clinics) and data analysis problems. Good, although somewhat dated reviews of several of the methodologic difficulties in PMS studies have been presented by Gannon[1] and Rubinow and Roy-Byrne.[2]

With respect to the presence of confounding in our study, it is relevant to note that we studied a relatively homogeneous group of women. Most were between 18 and 22 years old; over 90% attended high school in Oregon; all lived in a university residential dormitory with common dining areas. Apart from interpersonal relationships, stress levels in this group of women tended to vary with academic commitments and especially with exam periods, and so were roughly comparable between the case and comparison subjects. We found no effect of recent oral contraceptive use (use during the previous 3 months) or of weekly alcoholic beverage use on the reported associations. The potential confounder we were most concerned about was exercise because there are good data to support a preventive effect of exercise on premenstrual symptoms. Although we did not ask for information about exercise habits on the original questionnaire, we did conduct a follow-up study the following year with all women who had participated in the original study and who were still enrolled in the university. On the follow-up questionnaire, we asked questions about exercise habits, tobacco use, and certain dietary factors. Based on the approximately 300 responses to the questionnaire (response rate, 65%), we found that tobacco use could not have been a confounder (only 5% of the women used tobacco). Exercise habit (weekly minutes of exercise) was only minimally associated with the consumption of caffeine-containing beverages; if the lack of association between the consumption of caffeine-containing beverages and exercise habit was generalizable to the entire subject population, exercise habit could not have been a confounder in the original study. □

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Outbreak of Coxsackievirus A16 Hand, Foot, and Mouth Disease in a Child Day-Care Center

Epidemic hand, food, and mouth disease (HFMD) is most often caused by coxsackievirus A16.[1] Descriptions of epidemics have shown a high attack rate among young children, transmission between siblings, and an increased risk of spread in crowded living accommodation.[2,3] Although child day-care centers clearly fulfill these conditions for the transmission of HFMD, there are few published reports of HFMD outbreaks in these institutions.[4,5] We wish to report the investigation and management of an outbreak of HFMD in a day care center in Sydney, Australia.

The center provides day care for 75 children aged 3 months to 5 years, divided by age into four classes; overnight care is provided for up to 15 children at a time. On Friday, September 15, the Public Health Unit was informed that HFMD had been diagnosed in a child in the under-2-year-old class. An exanthem had been noted by day care staff 2 days before, after which the child was kept at home. Three days later, on September 18, six more children in the same class were reported to have maculopapular or vesicular rashes, and of these, five also had mouth lesions. One further case from the same class was reported on September 21. Swabs for viral culture were taken of mouth ulcers and skin vesicle fluid from the two most se-

verely affected children. To prevent the spread of the infection to the children or staff of the other classes, the affected class was closed, and the parents of these children were instructed to also keep at home any siblings who attended other classes at the center. The class was reopened on September 25, after 7 days' closure (the maximum incubation period after the latest time of possible contact). During this time all surfaces, furnishings and toys in the affected classrooms were cleaned. No further cases occurred in staff or children in this class or in the other four classes at the center. Coxsackievirus A16 was isolated from the oral swab of one child after 14 days of incubation in primary monkey kidney cells.

The clinical attack rate in this outbreak, which affected children between 3 months and 2 years old, was 8 out of 19 (42%). Similar attack rates of 37% and 38% were found in the two previously reported day care outbreaks[4,5] Although HFMD is generally a mild disorder, in young children mouth ulceration frequently leads to difficulty with feeding.[6,7] Serious complications, which include myocarditis, are rare.[8,9] Pregnant women among carers or parents may also be placed at risk by an outbreak of HFMD since it has been suggested that maternal Coxsackievirus A16 infection may be associated with spontaneous miscarriage.[10,11]

Virus has been recovered from the stools of patients with HFMD for some weeks after resolution of the exanthem.[12] If faecal excretion is a significant factor in the transmission of this disease, this would suggest that exclusion restricted to the duration of the rash would not be an effective control measure because affected children may remain infectious for prolonged periods. However, as no further cases occurred in the reported outbreak once the class was reopened, the present study demonstrated that children with HFMD are not likely to transmit infection to their contacts after the acute phase of the illness. Because of the significant public health implications of this infection in child day care, in particular its ready communicability and potential for causing fetal loss in infected pregnant women, further studies are required to establish the place of exclusion in the management of HFMD in child day care. □

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Liquid Scintillation versus Gamma Ray Counting in Radon Measurements with Charcoal

The article "Field Comparison of Several Commercially Available Radon Detectors" by R. W. Field and B. C. Kross (*Am J Public Health.* 1990;80:926–930) draws rather sweeping conclusions, including, in the abstract, "charcoal adsorption detectors . . . [canisters measured by gamma ray counting, hereafter referred to as "cans," explanation mine] performed very well. . . . Alternatively, charcoal liquid scintillation detectors [hereafter "LS," note mine] exhibited acceptable accuracy but poor precision." The purpose of this letter is to show that the conclusion about this difference between LS and cans is not correct.

Field and Kross drew this conclusion from 15 measurements with LS detectors from the Radon Project. They reported that, whereas 13 of these gave results close to the true value, 2 of the 15 yielded results of only about 40% of the true value.

As the quality control (QC) officer for the Radon Project, I have continually submitted QC samples mixed in among the other detectors so they would not be recognizable to the technicians. These detectors are normally exposed in groups of 4 cans + 4 or 8 LS in a 4m^3 radon chamber for 7 days (although some of these exposed detectors are used in auxiliary experiments). The chamber operates at 10–15 pCi/L and is continuously monitored by two independent flow-through Lucas cell systems, whose calibration is checked 4 to 10 times per week as air samples are withdrawn and measured in well-standardized systems.

Reports on these QC samples are submitted each month to the state of New Jersey. Table 1 summarizes the data in those reports. The first column identifies month and year of the report to the state of New Jersey. Columns 2 to 4 provide the number of sets of detectors exposed simultaneously and the total number of cans and LS in these sets. The "% SD" column represents the percentage standard deviation derived from the set of 4 or 8 detectors exposed simultaneously, and the figures in columns 5 and 6 are the average of these for all sets exposed during the month.

Columns 9 and 10 list the number of outliers for the LS samples; they were not included in calculating averages and percentage standard deviation. Column 9 gives the number of these between 50%–75% of the true value, and column 10 gives the number of those with less than 50% of the true value. We see that there were only 5 out of over 1600 results in the latter category. This contrasts sharply with the finding by Field and Kross that 2 out of 15 were less than 50%. Four of the 5 in our data occurred in the period from February to March 1989 when new technicians were being trained, but even then these major failures were only 4 out of over 300. Failures were usually traced to a particle of charcoal preventing the cap from sealing tightly. After measures were instituted to