POEMs

Hand Washing Children's Dishes Associated with Fewer Allergies

Clinical Question

Can the way dishes are washed affect the development of allergies in children?

Bottom Line

These results add further credence to the idea that the gastrointestinal system plays a big role in the development of our immune system (i.e., the hygiene hypothesis). Washing children's bottles and eating utensils by hand instead of using an automatic dishwasher was associated with a lower risk of developing an allergic disorder. The authors stop short of recommending low hygienic standards, but they suggest that fastidiousness might not allow the immune system to learn how to self-modulate. (Level of Evidence = 2b)

Synopsis

The goal of this wide-ranging study was to see whether exposure to microbes early in life affected the development of allergies. The Swedish investigators sent questionnaires to parents of 1,029 children, seven to eight years of age, in a single city, asking about each child's history of allergy, including any diagnosis of eczema, asthma, or allergic rhinoconjunctivitis, as well as asking about eating habits. To test for dietary microbes, the researchers asked parents about how they washed their dishes (using a dishwasher or by hand); their use of farm-purchased milk, eggs, or unpasteurized milk; whether their diet included fermented foods (e.g., sauerkraut) or home-cooked foods; and the duration of their breastfeeding.

Most of the children attended day care and one-third had a pet, but only 6% lived in a household in which a parent reported smoking inside. After analyzing all these factors to look for associations, hand dishwashing, which occurred in only 12% of households, was associated with the greatest reduced risk of allergic disease development (odds ratio = 0.57; 95% confidence interval, 0.37 to 0.85). The risk was further reduced in a dose-response pattern if the children were also served fermented food and if the family bought food directly from farms. The associations remained after adjusting for socioeconomic factors.

Study design: Cross-sectional

Funding source: Foundation

Setting: Population-based

Reference: *Hesselmar B, Hicke-Roberts A, Wennergren G. Allergy in children in hand versus machine dishwashing.* Pediatrics. *2015;135(3):e590-e597.*

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Two-Hour Algorithm to Rule In or Rule Out Acute MI

Clinical Question

Can acute myocardial infarction (MI) be ruled in or ruled out within two hours of presentation using high-sensitivity troponin levels?

Bottom Line

A simple rule (see synopsis) using high-sensitivity cardiac troponin levels measured on presentation and two hours later is an effective way to identify patients with or without MI. This rule was developed in one group of patients and validated in a second group. At a prevalence of 9%, this rule correctly ruled out MI 99.5% of the time. (Level of Evidence = 1a)

Synopsis

Swiss investigators developed this rule by enrolling 1,148 unselected patients who presented to an emergency department with suspected MI. High-sensitivity cardiac troponin level was measured at presentation. The final ▶

diagnosis of MI, which occurred in 16% of these patients, was made by two cardiologists not involved in the study based on patient data collected over 60 days from the time of presentation. The rule was then validated on a separate set of 517 patients who presented to an emergency department at a hospital on a different continent (Australia), 9.1% of whom had MI. The rule identified 22% of the patients as definitely or possibly having MI and 78% of the patients were ruled out of having MI. Of the ruled-out patients, 100% were alive 30 days later. The resulting sensitivity for the rule-in algorithm was 96% and the specificity was 99% (positive predictive value = 85%; negative predictive value = 99.5%).

The rule (based on high-sensitivity troponin level obtained at presentation and at two hours):

- Rule out MI if the maximum troponin level is less than 14 ng per L (0.014 mcg per L) and the absolute change over two hours is less than 4 ng per L (0.004 mcg per L).
- Rule in MI if the maximum troponin level is greater than 52 ng per L (0.052 mcg per L) or the absolute change over two hours is greater than 9 ng per L (0.009 mcg per L).
- Further observe patients who are not in either of these categories.

Study design: Decision rule (validation)

Funding source: Industry plus government

Setting: Emergency department

Reference: *Reichlin T, Cullen L, Parsonage WA, et al. Two-hour algorithm for triage toward rule-out and rule-in of acute myocardial infarction using high-sensitivity cardiac troponin T.* Am J Med. *2015;128(4):369-379.*

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Walking Program Effective for Chronic Low Back Pain

Clinical Question

For adults with chronic low back pain, is a prescribed walking program as effective as physical therapy?

Bottom Line

Giving patients a pedometer, a walking diary, and instructions to walk at least four days per week, then gradually increase the walk's duration and intensity (see synopsis) results in improvement in pain and disability similar to usual physical therapy or a group exercise program. Patient satisfaction scores and days lost from work are similar, and patients are more likely to continue treatment for at least one year. In our office, many clinicians wear a pedometer and we have a box of inexpensive ($1) ones available to give to patients with low back pain and other problems that would benefit from some get-up-and-go. (Level of Evidence = 1b)

Synopsis

Irish researchers enrolled 246 patients referred for physical therapy for the treatment of low back pain that was chronic (at least three months) or recurrent (three or more episodes in the past year). Patients also reported low levels of physical activity, and 76% were overweight or obese. The patients were randomized, using concealed allocation, to receive one of three interventions for up to eight weeks: (1) standard tailored physical therapy; (2) a weekly exercise class specifically aimed at patients with back pain; or (3) a tailored graduated program of walking. The patients in the walking program were given a walking diary and a pedometer and asked to walk at least four days per week. Patients started with at least a 10-minute walk (1,200 steps daily) with the goal of achieving 30 minutes of moderate-intensity physical activity (such as a brisk walk) five days per week. They were supported by weekly telephone calls. All patients also were given a booklet that explains back pain.

Using intention-to-treat analysis, pain and function as measured by the Oswestry Disability Index similarly improved an average of six points in all groups (from an average 35 points of a possible 100). Significantly more walkers, though, achieved a clinically important difference in the score. Scores were higher in all three groups in the patients who adhered to treatment. Patient satisfaction with treatment was similar among the groups. Cost was lowest for the walking program, and sustained adherence with treatment was highest. Time lost from work was similar among the three groups. These were likely highly motivated patients.

Study design: Randomized controlled trial (nonblinded)

Funding source: Foundation

Allocation: Concealed

Setting: Outpatient (specialty)

Reference: *Hurley DA, Tully MA, Lonsdale C, et al. Supervised walking in comparison with fitness training for chronic back pain in physiotherapy: results of the SWIFT single-blinded randomized controlled trial (ISRCTN17592092).* Pain. *2015;156(1):131-147.*

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