Cochrane for Clinicians

Putting Evidence into Practice

Interventions for Treatment of Overweight and Obese Children

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Clinical Question

Are diet, physical activity, and behavioral interventions effective in helping overweight and obese children lose weight?

Evidence-Based Answer

Interventions that include combinations of diet, physical activity, and behavior changes may reduce weight, body mass index (BMI), and BMI *z*-score (equivalent to BMI-for-age percentile) in overweight and obese children six to 11 years of age. These reductions are small and short term, however, and further studies are needed to determine the sustainability of these effects.[1] (Strength of Recommendation: C, based on consensus, disease-oriented evidence, usual practice, expert opinion, or case series.)

Practice Pointers

In the United States, 16% of children and adolescents two to 19 years of age are overweight (defined as age- and sex-specific BMI in the 85th to 94th percentile), whereas 17% are obese (BMI in the 95th percentile or greater).[2] Childhood obesity leads to adult obesity and is associated with a higher risk of respiratory, metabolic, and psychosocial conditions throughout the life span.[3-6] The purpose of this Cochrane review was to identify effective behavioral interventions to help at-risk children lose weight.[1]

This updated systematic review included 70 randomized controlled trials with 8,461 participants, all of whom were six to 11 years of age. Most of the studies were conducted in high-income countries, with nearly one-half in the United States. Settings included subspecialist, primary care, and community-based interventions, and ranged from six months to three years. Thirty-two studies included children who were overweight or obese at baseline, 26 studies included only children who were obese, and five studies included only children who were overweight.

Study interventions included combinations of behavioral therapy, diet, and physical activity, and were provided or recommended by registered dietitians, therapists, or psychologists. Primary outcomes included changes in measured weight, BMI, and BMI *z*-score. Only a limited number of trials reported health-related quality of life or behavior change outcomes, and no trials reported all-cause mortality, morbidity, or socioeconomic effects.

Compared with no treatment or usual care, behavioral interventions reduced participants' body weight by 3.2 lb (1.45 kg; $P < .00001$; 95% confidence interval [CI], –1.88 to –1.02; 17 trials), BMI by 0.53 kg per m^2 ($P < .00001$; 95% CI, –0.82 to –0.24; 24 trials), and BMI *z*-score by 0.06 units ($P = .001$; 95% CI, –0.10 to –0.02; 37 trials). Effects persisted at the end of the interventions and up to six months postintervention.

The U.S. Preventive Services Task Force currently recommends that clinicians screen for obesity in children six years and older and offer comprehensive, intensive behavioral interventions to assist with weight loss (B recommendation).[4] This Cochrane review supports those recommendations and provides limited evidence that interventions incorporating diet, physical activity, and behavior change may assist with short-term weight loss in children six to 11 years of age. Further studies are needed to determine long-term benefits and generalizability to diverse populations, as well as to inform public policy to increase access to such multicomponent interventions.

The practice recommendations in this activity are available at http://www.cochrane.org/CD012651.

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These are summaries of reviews from the Cochrane Library.

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The Role of Proton Pump Inhibitor Therapy in Patients with Functional Dyspepsia

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Clinical Question

Are proton pump inhibitors (PPIs) effective in reducing the symptoms of functional dyspepsia?

Evidence-Based Answer

There is moderate-quality evidence that PPIs are more effective than placebo at relieving overall symptoms in patients with functional dyspepsia (number needed to treat [NNT] = 11). Low-quality evidence suggests a small benefit of PPI therapy compared with prokinetics, and little to no benefit of PPI therapy vs. histamine H_2 antagonists. Treatment effect was independent of dose or duration of therapy, and the combination of a PPI plus a prokinetic agent did not provide additional benefit.[1] (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Functional dyspepsia is a highly prevalent but poorly understood condition, affecting 10% to 15% of the U.S. population and accounting for 3% to 5% of North American primary care visits.[2] The definition of functional dyspepsia has evolved over time, most recently characterized in the Rome IV criteria as having one or more of the following: postprandial fullness, early satiety, epigastric pain, or epigastric burning without evidence of structural disease.[3] Gastric acid suppression is the most common treatment option, with PPIs being the most widely used agents. Despite their widespread use, the underlying therapeutic mechanism of PPIs in functional dyspepsia remains unclear.[4] Given the developing concerns about long-term use of PPIs, including *Clostridium difficile* infection, pneumonia, and fracture risk,[5] the authors of this review sought evidence supporting their clinical application.

This Cochrane review included 25 randomized controlled trials and 8,453 adult patients who met criteria for a diagnosis of functional dyspepsia. Included trials compared treatment with an orally administered PPI of any type to treatment with placebo, H_2 antagonists (e.g., cimetidine [Tagamet]), or prokinetics (e.g., metoclopramide [Reglan]). Treatment duration was two to eight weeks, and both low-dose PPIs (equivalent to 10 mg of omeprazole [Prilosec]) and standard-dose PPIs (equivalent to 20 mg of omeprazole) were evaluated. Combination therapies involving PPIs were also considered. The primary outcome of the review was absence of global symptoms of dyspepsia or epigastric pain/discomfort.

Moderate-quality evidence demonstrated that PPI therapy was more effective than placebo in reducing global symptoms of dyspepsia, with 31% of the PPI group reporting no or minimal symptoms compared with 26% of the placebo group (relative risk [RR] = 0.88; 95% confidence interval [CI], 0.82 to 0.94; NNT = 11 [95% CI, 8 to 23]). PPI therapy may be only slightly more beneficial than prokinetic therapy at relieving global dyspepsia symptoms (RR = 0.89; 95% CI, 0.81 to 0.99; NNT = 16 [95% CI, 11 to 202]), although the quality of evidence was low because of imprecision and bias risk concerns. When PPIs were compared with H_2 antagonists, there was no difference in the primary outcome. Low-dose PPI therapy had similar effectiveness to standard-dose therapy, and the combination of a PPI plus a prokinetic agent showed no additional benefit over PPI monotherapy.

Despite the demonstrated reduction in dyspepsia symptoms, data from six placebo-controlled studies investigating the effect of PPI therapy on

quality-of-life metrics did not demonstrate a consistent difference. The review noted marked heterogeneity between studies in defining functional dyspepsia, reflecting its poorly understood pathophysiology and the evolution of guideline criteria. Despite this, subgroup analysis looking at reduction of dyspepsia symptoms based on *Helicobacter pylori* status, country of origin, presence of reflux, or Rome criteria did not show any significant deviation from the overall comparison. PPIs were well tolerated without an increase in short-term adverse effects when compared with placebo or other treatments.

The 2017 joint American College of Gastroenterology (ACG) and Canadian Association of Gastroenterology (CAG) guideline recommends standard-dose PPIs as first-line treatment in patients with *H. pylori*–negative functional dyspepsia. In patients who are *H. pylori*–positive, the ACG/CAG guideline also recommends PPI therapy if eradication is unsuccessful at eliminating symptoms.[6] The findings of this review support the recommended use of PPIs in functional dyspepsia, although evidence suggests low-dose therapy is as effective as standard-dose therapy.

The practice recommendations in this activity are available at http://www.cochrane.org/CD011194.

Editor's Note: Some of the 95% confidence intervals in this Cochrane for Clinicians were calculated by the author based on raw data provided in the original Cochrane.

The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Department of Defense, the U.S. Army, the U.S. Air Force, or the Uniformed Services University of the Health Sciences.

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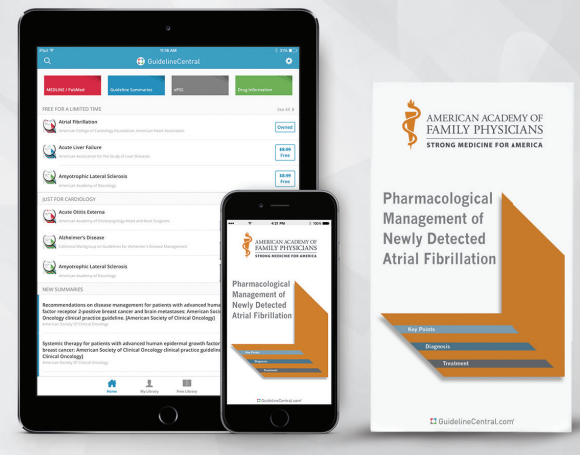

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