Three RCTs have evaluated the impact of weight loss. One 18-month RCT examined the effectiveness of 4 weight loss strategies (either alone or in combination) on physical function and pain in overweight and obese adults (defined as BMI ≥28 kg/m²) with OA. The study randomized 316 participants into 4 groups that achieved weight loss through healthy lifestyle (control), diet only, exercise only (180 min/wk), or a combination of diet and exercise. Weight loss led to significant improvements in knee pain and function compared with control (TABLE).

A second RCT examined weight change and pain scores in 96 obese patients (BMI ≥28 kg/m²) with OA. Participants were randomized into a low-calorie diet (1,200 kcal/d) group and a control group. At 12 months, patients in the low-calorie group experienced a weight loss of 11% compared with 4% in the control group (P<.05). Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain scores (5 questions, each scored 0–4, measuring the degree of pain with activity, total of 20 points) were significantly improved in the low-calorie group compared with placebo (mean difference [MD] 7.2; 95% CI, 1.0–13; P=.022).

A third RCT examined diet and improvement in knee function in 80 obese participants (BMI ≥28 kg/m²) with knee OA who were randomized into low-calorie and control diets. Function was measured through questions addressing severity of joint pain, stiffness, and limitation of physical function (using 24 different 100-point visual analog scales for a worst possible score of 2,400). The low-calorie group participants lost more weight than the control group (−11.0 and −4.4 kg, respectively; MD −6.6 kg; 95% CI, −7.9 to −5.3; P<.0001). This greater weight loss was associated with lower composite disability scores in the low-calorie group compared with control (MD −219; 95% CI, −369 to −69; P=.005).

### Evidence-Based Answer

**What treatments are effective for childhood obesity?**

**Evidence-Based Answer**

Medium- to high-intensity weight loss interventions that include a combination of nutritional counseling, physical activity counseling, and behavioral management can reduce the body mass index (BMI) in obese children (SOR: A, systematic review). Behavioral counseling alone may also be successful to some degree (SOR: B, meta-analysis of lower quality RCTs). Orlistat is effective in reducing BMI in obese children and is FDA-approved for obese adolescents aged 12–16 years, although the effect is small (SOR: A, systematic review).

A 2010 US Preventive Services Task Force systematic review examined 11 fair or good-quality studies of 13 comprehensive weight loss interventions in 1,513 overweight and obese children and adolescents. Comprehensive interventions included 3 components: dietary counseling, physical activity, and behavioral management. Interventions were categorized into very low (<10 contact hours during the course of the study), low- (10–25 hours), moderate- (25–75 hours), or high-intensity (>75 hours) interventions. Moderate- or high-intensity interventions resulted in a decrease in BMI at 6 to 12 months, ranging from 1.9 to 3.3 kg/m² compared with controls.

### TABLE

Comparison of measurements of knee pain and function at 18 months in patients with OA of the knee who lost weight

<table>
<thead>
<tr>
<th>Study group (at 18 months)</th>
<th>Weight loss (kilograms)</th>
<th>6-minute walk (meters)</th>
<th>Stair climb time (seconds)</th>
<th>Pain score (WOMAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy lifestyle (control)</td>
<td>1.1</td>
<td>430</td>
<td>9.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Diet + exercise</td>
<td>5.2</td>
<td>478</td>
<td>8.5</td>
<td>5.1</td>
</tr>
</tbody>
</table>

*P<.05 vs healthy lifestyle.

*Score shown is for the 5 questions that evaluated the degree of pain with activities of daily living (each question rated from 0 to 4, total of 20 points).

OA=osteoarthritis; WOMAC=Western Ontario and McMaster Universities Osteoarthritis Index.
A 2009 Cochrane review examined 64 fair- or good-quality RCTs studying lifestyle interventions (54 studies, N=3,806) and drug treatment (10 studies, N=1,424) for obesity. Among 301 children <12 years who participated in 4 fair- or good-quality RCTs examining lifestyle counseling, those who received behavioral counseling had a mean difference in BMI of –0.06 (95% CI, –0.12 to –0.01) over 6 months compared with those who did not receive counseling. No differences were found in 264 children from 3 trials studying diet and activity counseling (mean BMI difference 0.04; 95% CI, –0.12 to 0.04). In children >12 years, 173 adolescents in 3 trials randomized to behavioral counseling had a mean decrease in BMI of 0.14 (95% CI, 0.17–0.12).

In 2007, an expert committee of the American Medical Association recommended treatment with a comprehensive multidisciplinary intervention for obese children. This review found evidence of benefit from strategies that involve the family, increased activity, and reduced high-calorie food and beverage intake. They also recommend ongoing support from the physician to maintain weight loss.

The Cochrane review mentioned above also included 10 studies evaluating medication (metformin, orlistat, and sibutramine) and pooled data from 2 RCTs evaluating orlistat (N=579). Children who received orlistat 120 mg TID had a lower BMI than children who received placebo (mean difference –0.76; 95% CI, –1.07 to –0.44). The larger of the 2 studies (N=539 children, aged 12–16 years) found that, over 1 year, children treated with orlistat 120 mg TID decreased BMI by 0.55 whereas children who received placebo gained 0.31 in BMI (P<.001). Mild to moderate gastrointestinal side effects (fatty, oily stool and spotting, fecal urgency, abdominal pain, and flatus with discharge) occurred with orlistat.

What are the benefits and harms for chlamydia screening in asymptomatic men and women?

**Evidence-Based Answer**

Annual *Chlamydia trachomatis* screening in high-risk asymptomatic, nonpregnant women reduces the incidence of pelvic inflammatory disease (PID) (SOR: B, systematic review and inconsistent RCTs). Evidence is insufficient to suggest benefit from routine screening of asymptomatic males. Harms appear to be minimal.

An RCT of 2,607 women aged 18–34 years assessed screening high-risk women for chlamydia and its effect on PID. High risk was defined as a score of ≥3 out of the following characteristics: age <25 = 1 point, black race = 2 points, nulligravida = 1 point, douching in the previous 12 months = 1 point, and >2 sexual partners in preceding 12 months = 1 point. Patients were randomly assigned to chlamydia screening once (1,009) or to usual care (1,598). The rate of PID after 1 year was 8/10,000 woman-months in the screened group versus 18/10,000 woman-months in the usual care group (RR 0.44; 95% CI, 0.20–0.90).

A 2010 RCT utilized a single chlamydia screening of 2,529 sexually active adolescents and young women aged 16–27 years. Patients self-administered vaginal swabs and the samples were randomized to immediate testing and treatment, or analysis at 1 year. Chlamydia prevalence was 5.4% in those screened and 5.9% in controls. The overall incidence of PID in both groups was low and was not statistically different between the screened women (1.3%) and the control (1.9%), with 94% follow-up (RR 0.65; 95% CI, 0.34–1.22). Seventy-nine percent of PID cases diagnosed in 12 months were in those who tested negative for chlamydia at baseline. The authors suggested these infections were likely incident infections and that certain populations may benefit from more frequent testing.

Cost effectiveness of chlamydia screening was assessed in a study of 2,000 males and 2,000 females, aged 16–24 years and entering a job-training program. The combination of universal endocervical nucleic acid amplification testing (NAAT) in females and universal urine NAAT screening in males reduced the incidence of PID, with a total cost savings of $141,000 vs no screening and just treating the sequelae of PID. The utility of the study was limited by a small cohort, recruitment bias, and hypothetical estimations of savings.

---

**Thomas Gavagan, MD, MPH**
U of Illinois at Chicago

**Amy Swift-Johnson, MD**
U of Chicago & NorthShore University Health System

**Kate Rowland, MD**
U of Chicago and Advocate Illinois Masonic FMR

**Susan E. Meadows, MLS**
U of Missouri, Columbia