Routine Cholesterol Tests and Subsequent Change in BMI among Overweight and Obese Children

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In 2011 the NHLBI and AAP concluded that both familial and obesity associated dyslipidemias increase cardiovascular risk and recommended universal cholesterol testing at ages 9 - 11. It remains unknown whether testing influences body mass index (BMI) trajectory, a key modifiable cardiovascular outcome. This quasi-experimental matched cohort includes children aged 9 - 11 years completing well visits in a diverse primary care network from 2012 - 2014. Participants had baseline BMI >= 85th% and no prior cholesterol testing. Propensity score matching identified untested children similar to tested children on weight measures, practice site, sex, age, race, ethnicity, insurance, and well visit frequency. Change in BMI z-score was assessed over 18 months. Regression adjusted for residual confounding following matching. Data was analyzed in 2018. Matching improved balance between tested and untested children for all characteristics. The matched cohort of 1,808 children was predominantly non-Latino black (48%) or non-Latino white (33%), and Medicaid insured (39%). Baseline BMI z-score was 1.88 for tested and 1.84 for untested children. Of tested children, 25% had cholesterol levels above the 2011 guideline's "acceptable" range. Two children received cholesterol lowering medications. Adjusted analysis found no difference in change in BMI z-score between tested and untested children (0.02, 95% CI -0.01, 0.04). Individual risk assessment in the form of cholesterol testing is not associated with change in BMI trajectory among overweight and obese children. Though testing may identify familial hypercholesterolemia, results suggest testing does not change BMI trajectory, a key strategy to reduce cardiovascular risk.

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