# **HELPDESK ANSWERS**

[To Your Clinical Inquiries]

# Q Are overweight children likely to become overweight adults?

## **EVIDENCE-BASED ANSWER**

A YES. Overweight children (body mass index [BMI] ≥85th to <95th percentile) are likely to become overweight or obese adults with a BMI ≥25 (strength of recommendation [SOR]: **B**, systematic review of high-quality prospective longitudinal studies).

Obese adolescents are significantly more likely to develop severe obesity than normal weight or overweight adolescents (SOR: **B**, prospective cohort study). (See "Definition of terms" below.)

## The trend to overweight and obesity in adulthood is clear

A systematic review of 20 prospective and 5 retrospective trials tracked 179,303 overweight and obese children into adulthood. Investigators included studies for evaluation if they were written in English, prospective or retrospective longitudinal in design, described at least one anthropometric measurement, and included odds ratios or risk ratios in the results. The results were not pooled because of heterogeneity among studies.

In high-quality trials, the percentages of overweight or obese children and adolescents who became overweight or obese adults varied: overweight children (76% to 83%), obese children (18% to 60%), over-

weight adolescents (22% to 58%) and obese adolescents (24% to 90%). Limitations of the review included an inadequate description of the anthropometric measurement protocol, use of self-reported weight and height, and the fact that all studies were conducted in high-income countries.

## Obesity in adolescence often progresses to severe obesity later on

A prospective cohort trial followed 8834 nonobese and obese individuals, ages 12 to 21, for 13 years to assess risk of adult obesity.<sup>2</sup> Patients were drawn from the National Longitudinal Study of Adolescent Health, which is a representative sample of United States schools from 1994 to 1995 with respect to region, urbanicity, school size, school type, and ethnicity.

Researchers observed a total of 703 incident cases of severe obesity in adulthood, indicating a total incidence rate of 7.9% (95% confidence interval [CI], 7.4%-8.5%). Obese adolescents were significantly more likely to develop severe obesity than nonobese adolescents who were normal weight or overweight (hazard ratio [HR]=16; 95% CI, 12-21).

A significant proportion of obese adolescents became severely obese by their

#### Ezinne Nwude, MD, MPH; Jonell Hudson, PharmD; Lois Coulter, PharmD

University of Arkansas for Medical Science-NWFMRP, Fayetteville

#### FDITOR

**Corey Lyon, DO** University of Colorado

Family Medicine Residency, Denver

## **Definitions of terms**

**Normal weight:** Body mass index (BMI)  $\geq$ 5th to <85th percentile for individuals <20 years old or BMI  $\geq$ 18.5 to <25 for individuals >20 years.

**Overweight:** BMI ≥85th to <95th percentile or BMI ≥25 to <30.

**Obesity:** BMI  $\geq$ 95th to <120% of 95th percentile or BMI  $\geq$ 30 to <40.

**Severe obesity:** BMI ≥120% of 95th percentile; BMI ≥40.

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early 30s, with an incidence of 37% in men (95% CI, 31%-44%) and 51% in women (95% CI, 45%-58%). Black women had the highest incidence at 52% (95% CI, 41%-64%). Fewer than 5% of patients (across sex and race) who were normal weight in adolescence became severely obese in adulthood.

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- The NS, Suchindran C, North KE, et al. Association of adolescent obesity with risk of severe obesity in adulthood. *JAMA*. 2010;304:2042-2047.

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