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Parental Advice to Diet Is Counterproductive for Overweight Adolescents



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See next page

Overweight teens whose parents recommended dieting were less likely to lose weight than overweight teens whose parents did not recommend dieting.

Do parents of overweight teenagers perceive their child as overweight, and, if they do, what kind of weight-management behavior do they promote? To find out, investigators examined data from a longitudinal study (Project EAT) of dietary intake and weight status among middle- and high-school children in Minneapolis. Cross-sectional analysis represented survey responses of 314 overweight adolescents (mean age, 14 years) and their parents. Longitudinal analysis represented 5-year follow-up of 170 adolescents.

Overall, 54% of parents of girls and 40% of parents of boys correctly identified their child as overweight. Among parents who perceived their child as overweight, nearly 60% encouraged dieting, 50% indicated that their families often watched television during meals, and 40% always kept soda at home. Regarding more-positive behaviors, about 50% always served fruits and vegetables, and 70% encouraged physical activity. Girls whose parents encouraged them to diet were almost three times more likely to be overweight 5 years later than girls whose parents did not encourage dieting (odds ratio, 2.98). A similar trend for boys was marginally significant (OR, 3.54). At the 5-year follow-up, 66% of girls whose parents encouraged them to diet remained overweight compared with 44% of those who did not receive such advice.

Comment: I have no doubt that all the parents were trying to do the right thing for their sons and daughters, but research consistently has shown that frequent dieting is associated with increased risk for overweight in girls. This study demonstrates that dieting advice from parents — however well intentioned — leads to the same result. As pediatricians, we should help refocus parents' attention from getting children to diet to adopting proven weight-management strategies: eating meals together as a family, limiting fast food, reducing availability of sweetened beverages, increasing the availability of fruits and vegetables, and keeping kids physically active. Turning the TV off during meals might also help. Use of BMI tables rather than plotting height and weight yields a better assessment of an adolescent's weight status.

— Alain Joffe, MD, MPH, FAAP

CITATION(S):

Neumark-Sztainer D et al. Accurate parental classification of overweight adolescents' weight status: Does it matter? *Pediatrics* 2008 Jun; 121:e1495. (<http://dx.doi.org/10.1542/peds.2007-2642>)

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Lipid Screening in Childhood — New Recommendations from the AAP

Controversial new recommendations advocate wider screening and use of statins in children.

The AAP has released a new clinical report on lipid screening in children that replaces its 1998 policy statement. Much of the background information is not new: (1) autopsy data indicate that the atherosclerotic process begins in childhood and that elevated cholesterol levels in childhood are associated with increased risk for cardiovascular disease (CVD) in adulthood; (2) lipid and lipoprotein levels rise rapidly early in life and stabilize by age 5 to levels similar to those of adolescents; and (3) currently, 35% to 45% of children are screened because of positive family history of CVD.

So, what is new since the 1998 report was published? First, the average weight of U.S. children is rising as the obesity epidemic continues. Second, the metabolic syndrome (which includes measurement of waist circumference, lipid levels, blood pressure, and fasting glucose level) is well defined and is known to be associated with CVD in adults. Third, statins are extremely useful in lowering CVD incidence in adults and have excellent safety profiles.

Besides the standard advice — that all children should follow recommended dietary guidelines, including the restriction of dietary cholesterol and saturated fats (and use of low-fat dairy products) — the new guideline calls for wider screening and recommends that cholesterol-lowering drugs should be considered in children. Highlights include:

- Screening is recommended every 3 to 5 years, optimally beginning at age 2 years and certainly no later than age 10 for children with positive family histories of dyslipidemia or premature CVD (i.e., CVD diagnosed before age 55 for men and 65 for women); unknown family history; or other CVD risk factors (overweight or obesity, hypertension, cigarette smoking, or diabetes).
- A fasting lipid profile is the recommended screening approach, and interpretation should be based on reference charts provided in the report.
- Weight management is the primary treatment strategy for overweight or obese children with high triglyceride levels or low high-density lipoprotein levels.
- «For patients 8 years and older with an LDL concentration of 190 mg/dL (or 160 mg/dL with a family history of early heart disease or 2 additional risk factors present or 130 mg/dL if diabetes mellitus is present), pharmacologic intervention should be considered. The initial goal is to lower LDL concentration to <160 mg/dL. However, targets as low as 130 mg/dL or even 110 mg/dL may be warranted when there is a strong family history of CVD, especially with other risk factors including obesity, diabetes mellitus, the metabolic syndrome and other higher-risk situations.»

Comment: This guideline is quite controversial. Some critics believe that the recommendations are too aggressive for the few data that exist (and none are presented in the report) about either long-term benefits or risks of statin use in children. Others believe that prolonged elevation of cholesterol, beginning in childhood,



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1. Sarker et al., Lactobacillus Paracasei Strain ST11 has no effect on Rotavirus but ameliorates the outcome of Nonrotavirus Diarrhea in Children from Bangladesh. *Pediatrics* 2005; 116 e221-e228
 2. Brunser O et al. Effect of a milk formula with Prebiotics on the intestinal microbiota of infants after an antibiotic treatment. *Pediatric research* 2005; 59(3): 451-456
 3. Committee on Nutrition, American Academy of Pediatrics, *Pediatric Nutrition Handbook*, 4th ed, Kleinman RE (ed), Elk Grove village, Ill: American Academy of Pediatrics, 1998
 4. Shersten Killip et al, Iron Deficiency Anemia, *Am fam Physician* 2007; 75: 651-8
 5. Idjardani P, Pollitt E. reversal of developmental delays in iron deficient anemic infants treated with iron. *Lancet*. 1993 Jan 2; 341(8836): 1-4
 6. World Health Organization (WHO), *Guidelines for the control of Iron Deficiency in Countries of the Eastern Mediterranean Middle East and North Africa*; 1996

could warrant drug treatment, based on encouraging data in adults and selected children with the homozygous form of familial hypercholesterolemia. With the new recommendations, I estimate that about 75% of U.S. children will qualify for screening because of weight, family history, or other CVD risk factors.

When considering statins for children, I worry about the possibility of unexpected consequences of aggressive cholesterol lowering and am reminded of a recent trial in adults with type 2 diabetes in which aggressive lowering of glycosylated hemoglobin (HbA1c) was associated with increased mortality. In addition, because health insurers can deny coverage for preexisting conditions, I am concerned about the possible long-term implications of «labeling» a child as having elevated cholesterol. Whether to use cholesterol drugs in children epitomizes the art of medicine in my view: Each physician must understand the data, his or her own biases, and the concerns and preferences of patients and families when making recommendations about the use of statins in children.

— Howard Bauchner, MD

CITATION(S):

Daniels SR et al. Lipid screening and cardiovascular health in childhood. *Pediatrics* 2008 Jul; 122:198.

Monkey bars cause the most playground injuries.

Given the risk for obesity in U.S. children, they need to stay active, but they also need to be protected from injury. The author of this study used the National Electronic Injury Surveillance System (NEISS) database of emergency department (ED) visits in 2002 through 2004 to investigate injuries associated with playground equipment in children younger than 18 years.

Of 22,278 ED visits for playground injuries by 17,700 children (54% boys; mean age, 6.5 years), 45% of visits involved monkey bars, 30% involved swings, and 25% involved slides. The most frequent injuries were fractures (44%), followed by contusions-abrasions (22%), lacerations (15%), strains and sprains (10%), and traumatic brain injuries (TBIs; 9%). Monkey bars were the most common cause of fractures, and swings were the most common cause of TBIs. Nearly 40% of injuries occurred at school, 35% occurred at recreation-sporting facilities, and 25% occurred at home. Most children (94%) who were seen in the ED were treated and released. The overall incidence of playground equipment injuries peaked in the summer, and the incidence of such injuries at school peaked in the spring and fall. Based on NEISS data since 1991, the frequency of injuries associated with swings and slides has decreased, but the frequency of injuries caused by monkey bars has not. Children with fractures were nearly 10 times more likely and children with TBIs were 5 times more likely to be admitted than children with contusions.

Comment: I don't think we can make active play risk free, but we can certainly use data such as these to identify ways to reduce risk. Supervised play at school along with height limitations and soft landing surfaces for monkey bars might reduce both the number and the severity of injuries, but we certainly should not use these data to reduce children's opportunities to play.

Playground Injuries: Children Need to Play . . . Safely

Retesting Adopted Children for Tuberculosis

— William P. Kanto, Jr., MD

CITATION(S):

Loder RT. *The demographics of playground equipment injuries in children. J Pediatr Surg* 2008 Apr; 43:691.

Repeat TB testing is necessary for internationally adopted children.

For internationally adopted children who come to the U.S., is retesting necessary for those whose initial tuberculin skin tests (TSTs) are negative? To find out, investigators evaluated 527 such children (mean age, 23 months); most were adopted from Russia, China, or Guatemala.

On initial testing within 2 months of arrival, 416 children (79%) had negative TSTs, and 111 children (21%) had positive TSTs (10 mm induration). None of the children with positive tests had evidence of active tuberculosis (TB) infection. Of 204 children with initial negative results who were retested at least 3 months after their initial tests, 191 were read within 48 to 72 hours, and 38 were positive; again, none had active TB infections. Presence of a bacille Calmette-Guérin (BCG) immunization scar and better nutritional status (assessed by weight for age) were related significantly to a positive TST result on initial testing. Improved nutritional status also was associated with a positive TST result on repeat testing.

Comment: Even if we assume negative results for all children who were not retested and for those whose tests were not read within 48 to 72 hours, the positive rate at retesting would be 9% (38 of 416). The authors speculate that improved nutrition after coming to the U.S., with reversal of anergy, might account for some of the positive retest results. Although some positive tests might represent reactions to BCG, these data indicate clearly that repeat testing for TB is necessary in internationally adopted children.

— Howard Bauchner, MD

CITATION(S):

Trehan I et al. *Tuberculosis screening in internationally adopted children: The need for initial and repeat testing. Pediatrics* 2008 Jul; 122:e7. (<http://dx.doi.org/10.1542/peds.2007-1338>)

Adolescent endurance athletes with amenorrhea had significantly lower BMD z scores than did either eumenorrheic athletes or eumenorrheic nonathletes.

Although one benefit of exercise is increased bone-mineral density (BMD), female adult athletes with amenorrhea have low BMD. To examine whether the same is true for female adolescent athletes (age range, 12–18 years), researchers in Boston compared BMD, body composition, and insulin-like growth factor 1 (IGF-1) levels in 21 adolescent athletes with amenorrhea, 18 athletes with normal menstruation, and 18 controls who were not athletes and did not have amenorrhea.

Athletes reported one of the following: at least 4 hours per week of aerobic weight training of the legs, more than 30 miles per week of running, or more than 4

Exercise plus Amenorrhea Equals Thinner Bones

hours per week of endurance training for at least 6 months. Athletes with amenorrhea had missed at least three consecutive cycles following at least 6 months of regular cycles or did not reach menarche by age 15.3 years.

Athletes with amenorrhea had significantly lower BMD z scores (measured by dual-energy radiograph absorptiometry) at the spine and whole body than either eumenorrheic athletes or controls and significantly lower hip BMD z scores than eumenorrheic athletes. Lean mass did not differ among the three groups, but athletes with amenorrhea had lower BMI z scores than eumenorrheic athletes and lower IGF-1 levels than controls. Markers of bone turnover were significantly lower in amenorrheic athletes than in controls. Activity scores were greater for athletes with and without amenorrhea than for controls.

Comment: This study underscores the risk associated with amenorrhea in adolescent athletes and the importance of maintaining regular menses. Unfortunately, the activity questionnaire did not measure energy expenditure so the authors could not determine whether low BMI, increased energy drain, or both lead to amenorrhea. Until this is clarified, athletes must be advised to increase their caloric intake until menses are restored, even if that means an increase in BMI. Although oral contraceptives will restore menses, whether contraceptives enhance bone density is uncertain; therefore, contraceptive use might falsely reassure athletes.

— *Alain Joffe, MD, MPH, FAAP*

CITATION(S):

Christo K et al. Bone metabolism in adolescent athletes with amenorrhea, athletes with eumenorrhea, and control subjects. Pediatrics 2008 Jun; 121:1127.

Management of Adolescents with Type 2 Diabetes

A summary of recommendations from the U.K. relevant to adolescents

The obesity epidemic has led to an increase in the number of children and adolescents who are diagnosed with type 2 diabetes. After an exhaustive systematic review of the literature, the U.K. National Institute for Health and Clinical Excellence has released a practice guideline. Highlights relevant to adolescents are as follows:

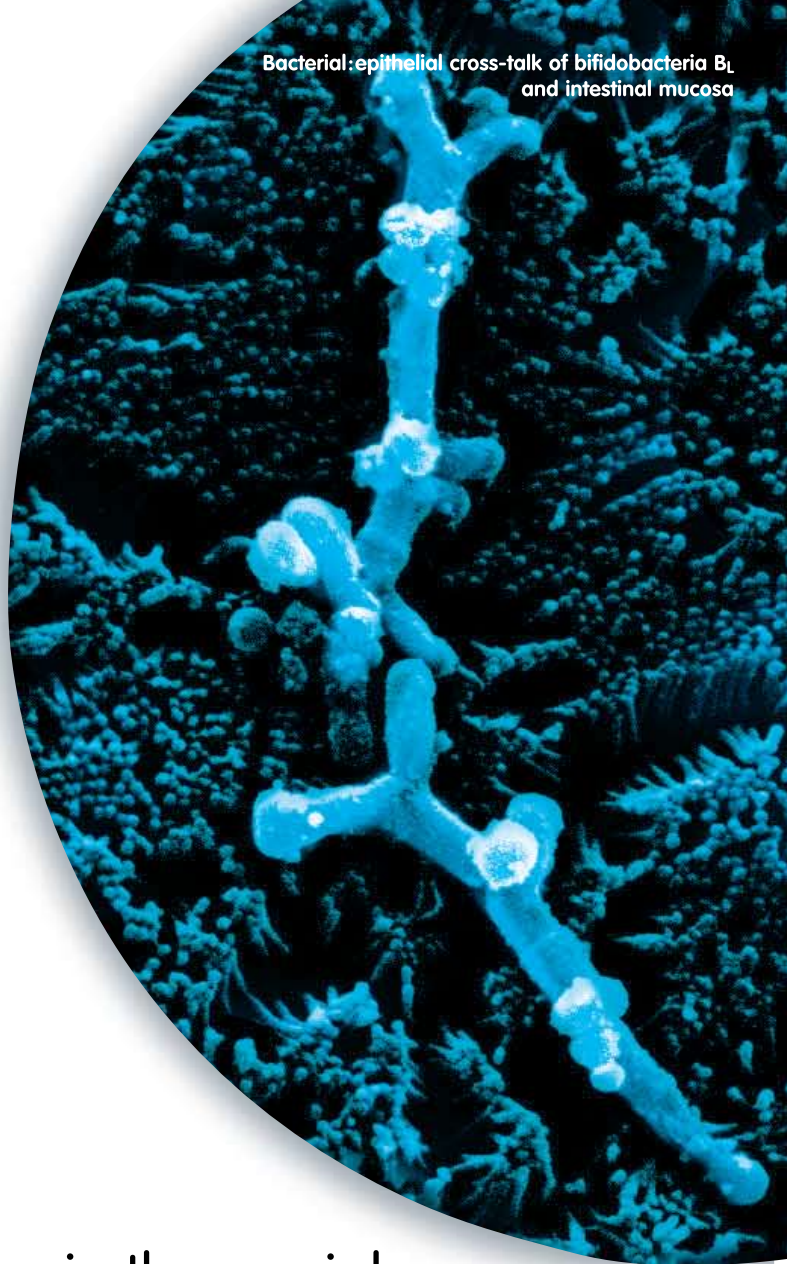
- A newly diagnosed patient should be offered self-monitoring of plasma glucose only as part of a comprehensive management plan that includes nutritional advice.
- Glycosylated hemoglobin (HbA1c) target levels should be selected with each patient and can be above 6.5%.
- HbA1c levels should be checked every 2 to 6 months during therapy until blood glucose levels are stable.
- Monitoring blood pressure and controlling hypertension should be considered critical components of care.
- Initial weight loss in overweight patients should be 5% to 10% of body weight.
- Metformin should be started in overweight or obese patients whose blood glucose is inadequately controlled by nutrition and exercise alone.
- Sulfonylurea should be considered in patients who are not overweight, who do not tolerate metformin, or whose blood glucose control is inadequate with metformin or other oral agents.
- Cardiovascular risk, including a full lipid profile, should be assessed annually.

Comment: Normalizing HbA1c always has been thought to be the cornerstone

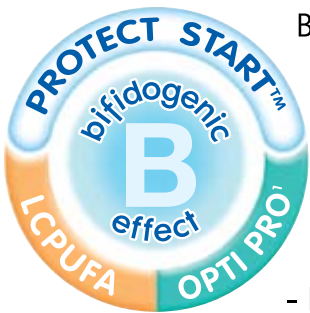
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Bacterial:epithelial cross-talk of bifidobacteria B_L and intestinal mucosa



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- Protective immuno-nutrients (Zn, Se, nucleotides) support intestinal immune cells

IMPORTANT NOTICE

The World Health Organisation (WHO)* has recommended that pregnant women and new mothers be informed of the benefits and superiority of breastfeeding - in particular the fact that it provides the best nutrition and protection from illness for babies. The Global Strategy for Infant and Young Child Feeding adopted by the 2002 World Health Assembly states that "as a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health." Mothers should be given guidance on the preparation for, and maintenance of, lactation, with special emphasis on the importance of a well-balanced diet both during pregnancy and after delivery. Unnecessary introduction of partial bottle-feeding or other foods and drinks should be discouraged since it will have a negative effect on breastfeeding. Similarly, mothers should be warned of the difficulty of reversing a decision not to breastfeed. Before advising a mother to use an infant formula, she should be advised of the social and financial implications of her decision: for example, if a baby is exclusively bottle-fed, more than one can (400g) per week will be needed, so the family circumstances and costs should be kept in mind. Mothers should be reminded that breast milk is not only the best, but also the most economical food for babies. If a decision to use an infant formula is taken, it is important to give instructions on correct preparation methods, emphasising that un-boiled water, unsterilised bottles or incorrect dilution can all lead to illness.

* See: International Code of Marketing of Breast Milk Substitutes, adopted by the World Health Assembly in Resolution WHA 34.22, May 1981.

INFORMATION FOR THE MEDICAL PROFESSION ONLY.



Sensorineural Hearing Loss in Children with Congenital CMV Infections

of good diabetic care. However, in a recent randomized clinical trial in adults with type 2 diabetes, lower HbA1c levels (median HbA1c, 6.4% with intensive therapy vs. 7.5% with standard therapy) led to increased mortality. Whether this paradoxical finding applies to adolescents is unclear. Nonetheless, management of children and adolescents with type 2 diabetes should not focus on HbA1c alone. The guideline reviews other drugs, including insulin secretagogues, acarbose, human insulin, and exenatide; use of statins in patients older than 40; and management of patients with kidney, eye, nerve, and foot damage. Primary care physicians might want to seek help from pediatric endocrinologists if drug therapies other than metformin or sulfonylurea are needed.

— Howard Bauchner, MD

CITATION(S):

National Institute for Health and Clinical Excellence. *Type 2 diabetes: The management of type 2 diabetes (update)*. May 2008. (<http://www.nice.org.uk/nicemedia/pdf/CG66NICE-Guideline.pdf>)

Sensorineural hearing loss is common and variable in children with either asymptomatic or symptomatic congenital CMV infections.

Estimates vary on the incidence of sensorineural hearing loss (SNHL) in infants with asymptomatic or symptomatic congenital cytomegalovirus (CMV) infections. In this large prospective study, investigators evaluated SNHL incidence among 14,021 infants born at one Brussels, Belgium, hospital while a screening program was in place (between June 1996 and November 2006) for detection of congenitally infected neonates. Pregnant women underwent serologic testing during pregnancy. Urine samples were collected from infants during the first week of life; infants diagnosed with congenital CMV infections underwent audiologic testing at birth, 6 months, 1 year, and annually thereafter.

Of 74 newborns (0.53%) diagnosed with congenital CMV infections, only 4 (5.4%) were symptomatic. Twenty-two percent of infected infants developed SNHL (ranging from mild to profound); only one had symptomatic infection. Three infants (5%) developed SNHL after age 6 months (1 infant also contracted bacterial meningitis). Among 44 infants who underwent multiple hearing tests, 16% exhibited fluctuating hearing thresholds, 11% had progressive hearing loss, and 18% showed improving hearing thresholds. SNHL developed in 4 of 26 neonates (15%) born to mothers with primary infections, and most hearing losses were severe. One infant whose mother had a recurrent CMV infection developed severe and bilateral loss. SNHL developed in 8 of 20 neonates (40%) born to mothers whose times of infection were unknown.

Comment: All newborns with CMV infections — not just those with symptomatic infections — should be monitored for hearing loss. These data do not help predict which infants will develop SNHL or the severity and timing of hearing loss; however, serial audiologic testing for all CMV-positive infants is important, regardless of maternal antibody status. The frequency and duration of audiologic testing are also difficult to determine, given the reported fluctuating hearing status. The schedule of audiologic testing used in this study — at birth, 6 months, 1 year, and annually thereafter — seems reasonable.

Prehypertension and Hypertension in Adolescents

— Robin Drucker, MD

CITATION(S):

Foulon I et al. A 10-year prospective study of sensorineural hearing loss in children with congenital cytomegalovirus infection. *J Pediatr* 2008 Jul; 153:84.

An estimated 7% of prehypertensive adolescents develop hypertension annually.

Hypertension often goes undiagnosed in children. An important question is the extent to which sporadically elevated blood pressure (BP) persists in adolescents. In this study, investigators examined the persistence of hypertension (systolic or diastolic BP 95th percentile) or prehypertension (systolic or diastolic BP 90th percentile or 120/80 mm Hg but lower than the threshold for hypertension) in 8533 adolescents whose BP was measured at age 13, 14, or 15 and repeated 2 and 4 years later. Initially, 67% of boys and 77% of girls were normotensive; most remained normotensive at 2 years, but 31% and 12% were prehypertensive at 2 years, and 5% and 4% had developed hypertension. Among boys and girls initially classified as prehypertensive (21% and 13%, respectively), 50% and 24% remained prehypertensive at 2 years, and 14% and 12% had developed hypertension. Among those who were initially hypertensive (11% of boys and 10% of girls), 31% and 26% remained hypertensive at 2 years and 47% and 26% were prehypertensive. Among both boys and girls, changes at 4 years were similar to those at 2 years and systolic BP was associated significantly with weight gain.

Comment: Although these data were based on single BP measurements and probably overestimate the prevalence of elevated BP in adolescents, analysis of follow-up measurements suggests that about 7% of prehypertensive adolescents become hypertensive annually. The message is that BP should be measured in adolescents at every healthcare visit.

— Howard Bauchner, MD

CITATION(S):

Falkner B et al. Blood pressure variability and classification of prehypertension and hypertension in adolescence. *Pediatrics* 2008 Aug; 122:238.

Findings of a small study suggest that left ventricular mass index is higher in children with white-coat hypertension than in those with normal blood pressure.

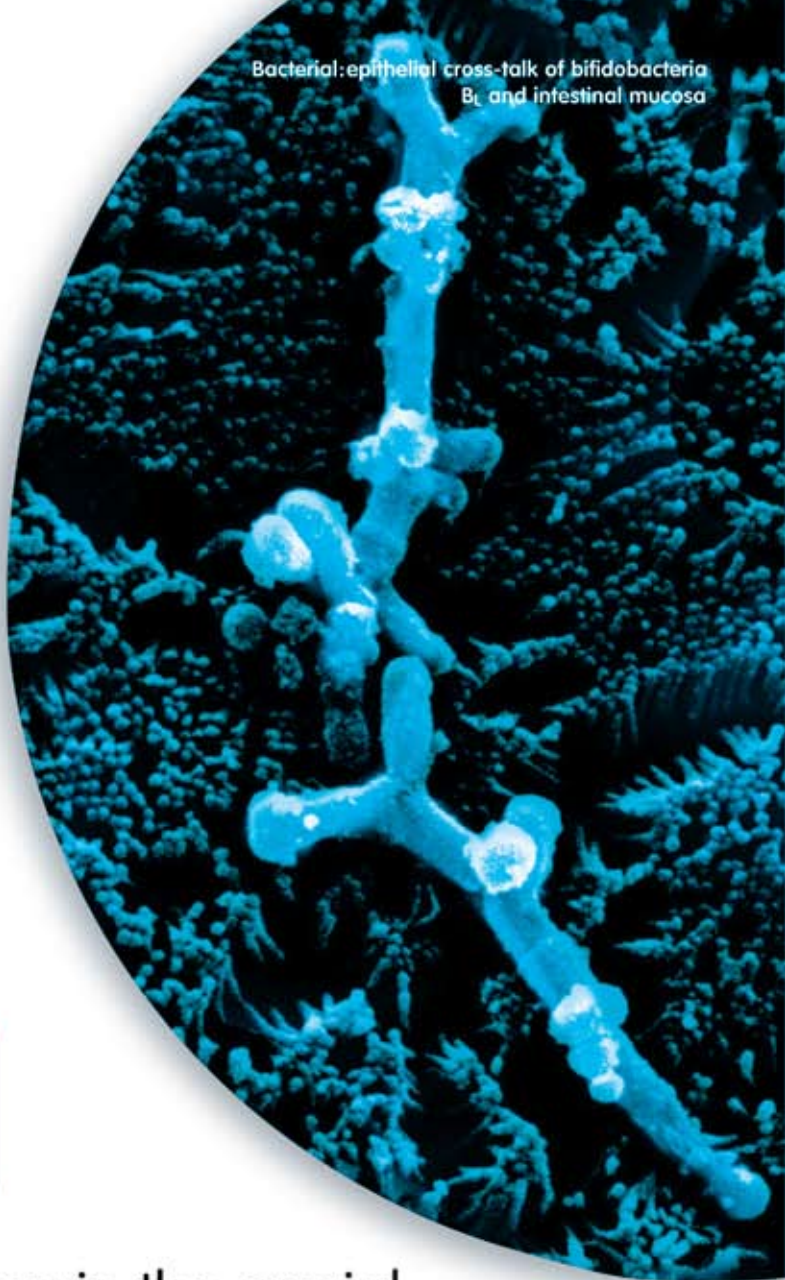
The long-term implications of white-coat hypertension (WCH) in children remains controversial. In a retrospective study, investigators assessed potential end-organ damage from WCH by comparing left ventricular mass index (LVMI; left ventricular mass indexed to height to correct for effect of body size) in 27 children (mean age, 15 years; 89% boys) with WCH versus that in 27 normotensive patients and 27 hypertensive patients who were matched for BMI, age, and sex. Mean LVMI was 29.2 g/m² in normotensive patients, 32.3 g/m² in patients with WCH, and 35.1 g/m² in hypertensive patients. LVMI did not differ significantly between the WCH and hypertensive groups but was significantly greater in the WCH

White-Coat Hypertension: A Caution

NEW



Bacterial: epithelial cross-talk of bifidobacteria B₁ and intestinal mucosa



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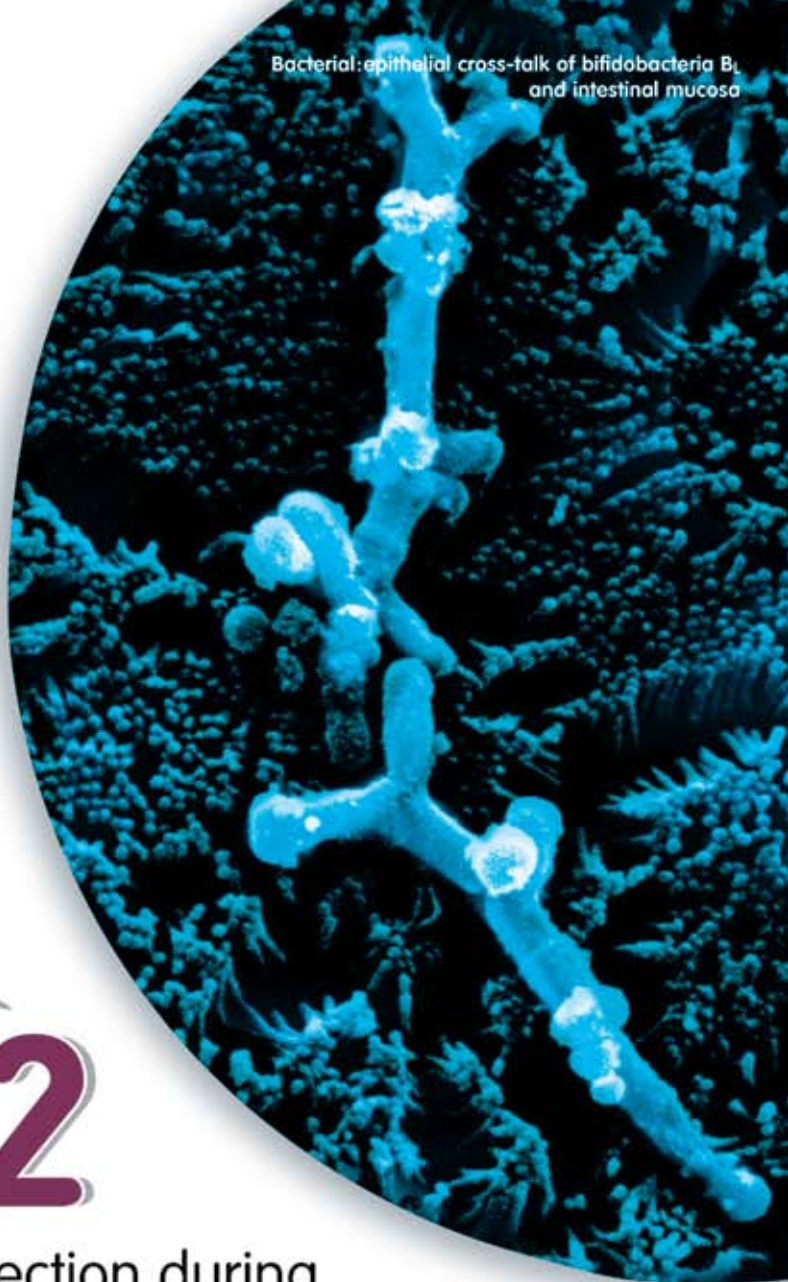
* See: International Code of Marketing of Breast Milk Substitutes, adopted by the World Health Assembly in Resolution WHA 34.22, May 1981.

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INFORMATION FOR THE MEDICAL PROFESSION ONLY.



Postnatal Depression in Fathers Has Adverse Effects on Their Children's Mental Health

group than in the normotensive group. Left ventricular hypertrophy was present in 26% of hypertensive patients but in no patients with either normal blood pressure or WCH.

Comment: This small, well-designed study offers both comfort and concern: Children with WCH did not have left ventricular hypertrophy, but they had higher LVMI than did well-matched normotensive controls. When WCH is found in a child, greater-than-usual vigilance must be paid to controlling overweight and avoiding obesity, the major risk factor for long-term adverse cardiovascular events.

— F. Bruder Stapleton, MD

CITATION(S):

Lande MB et al. Left ventricular mass index in children with white coat hypertension. *J Pediatr* 2008 Jul; 153:50.

Paternal depressive symptoms increase the vulnerability of their children to psychiatric disorders.

Many studies have established a link between postpartum depression in women and adverse effects on maternal health and subsequent child development. Does depression in fathers during the postnatal period have similar effects on a child's mental health? In a population-based cohort study from England, researchers followed 10,975 fathers and their children for 7 years. The Edinburgh Postnatal Depression Scale (EPDS) was used to assess paternal depressive symptoms at several time points, and a standardized instrument was used to assess psychiatric disorders in the children at age 7 years.

Eight weeks after children were born, 3% of the fathers had depressive-symptom scores considered significant on the EPDS. Children were significantly more likely to have psychiatric disorders at age 7 years if their fathers had high depressive-symptom scores at 8 weeks after birth than if their fathers did not have depressive symptoms (rates of child psychiatric disorders, 12% vs. 6%). Paternal depressive symptoms at 8 weeks were most strongly associated with oppositional defiant and conduct disorders. Analyses controlled for maternal postpartum depression, fathers' education levels, and fathers' depressive symptoms at 21 months.

Comment: These findings suggest an association between depressive symptoms in fathers during the postnatal period and externalizing disorders (oppositional defiant and conduct disorders) in their school-age children. The study should be interpreted cautiously because evaluation of depressive symptoms was based on a screening test only and not on diagnostic interviews for major depression. Pending further studies, this report reminds us to be sensitive to the mental health of fathers during a time of transition and vulnerability following the birth of a child.

— Martin T. Stein, MD

CITATION(S):

Ramchandani PG et al. Depression in men in the postnatal period and later child psychopathology: A population cohort study. *J Am Acad Child Adolesc Psychiatry* 2008 Apr; 47:390

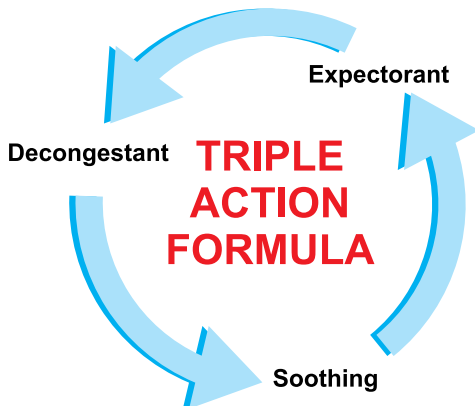
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Short Sleep Duration and Risk for Childhood Obesity

Each 1-hour reduction in sleep was associated with a 40% increase in the risk for obesity.

Although genetics is the major contributing factor to childhood obesity, environmental factors offer opportunities for clinical or public health prevention. Previous studies have linked shorter sleep duration with obesity in children and adolescents, but most of these studies did not assess psychological factors that might confound the association. In a cross-sectional study of 819 children (age range, 8–11 years; 17% obese), investigators examined the influence of parent and child psychological and behavioral factors on the relation between sleep duration and obesity.

Standardized validated parent questionnaires were used to measure child sleep duration, child psychological and behavioral functioning, and parent stress. In unadjusted and adjusted analyses, child sleep duration as reported by parents was significantly associated with the risk for obesity. Each 1-hour reduction in sleep duration was associated with a 41% increase in the odds of obesity (odds ratio, 1.41). As average sleep duration decreased from 10.27 hours in the highest quartile to 8.10 hours in the lowest quartile, the prevalence of obesity increased from 11.8% to 24.9% ($P=0.0004$). Child psychological functioning (i.e., internalizing symptoms) and parent stress were associated with sleep duration but not with child obesity status. Adjustment for these behavioral and parenting characteristics did not alter the relation between sleep duration and obesity. In analysis by gender, the association between mean sleep duration and obesity was significant for boys but not for girls.

Comment: This study adds to a growing body of evidence that links shorter sleep duration with childhood obesity. The authors did not find an association between child obesity and parent-reported child behavioral symptoms or parent stress. Limitations of the study include reliance on parental reports of sleep duration (rather than laboratory measures) and reports of duration rather than quality of sleep (a factor that might be critical in the development of obesity). The authors suggest that the lack of evidence linking child behaviors and parent stress with obesity points to the potential importance of biological factors (e.g., appetite regulatory and metabolic hormones) in modulating the connection between short sleep duration and childhood obesity. Although we are well aware that adequate sleep is healthy for kids, the possibility that it might protect against the development of obesity is remarkable. The study is a reminder for pediatricians to ask about sleep duration at well-child visits.

— *Martin T. Stein, MD*

CITATION(S):

Ievers-Landis CE et al. Relationship of sleep parameters, child psychological functioning, and parenting stress to obesity status among preadolescent children. J Dev Behav Pediatr 2008 Aug; 29:243.

Birth Defects and Maternal Diabetes Mellitus: All Is Not Sweetness

Pregestational DM is associated with a broader range of birth defects than is gestational DM, and the association between gestational DM and birth defects is limited mostly to overweight and obese women.

Birth defects are the leading cause of infant deaths in the U.S., and maternal diabetes mellitus (DM) is known to be a risk factor for birth defects, presumably secondary to hyperglycemia. To further examine the association between DM and birth defects, investigators conducted a case-control study among 13,030 mothers of infants with congenital anomalies and 4895 mothers of infants without birth defects.

The prevalence of pregestational DM (types 1 and 2) was significantly higher among mothers of infants with congenital anomalies than among mothers of controls (2.2% vs. 0.5%). Similarly, the prevalence of gestational DM was significantly higher among mothers of infants with congenital anomalies (5.1% vs. 3.7%). Mothers of infants with multiple defects had the highest prevalence of DM. Pregestational DM was associated positively with 7 (of 23) noncardiac defects (anencephaly and craniorachischisis, hydrocephaly, anotia and microtia, cleft lip with or without cleft palate, anorectal atresia, bilateral renal agenesis and hypoplasia, and longitudinal limb defects) and 11 (of 16) cardiac defects; these associations were stronger among mothers of infants with multiple defects. Gestational DM was associated with three noncardiac defects (cleft lip, cleft lip with or without cleft palate, and anorectal atresia) and three cardiac defects, and these associations were limited mostly to mothers with prepregnancy BMIs of 25 kg/m² or higher. The association between pregestational DM and birth defects was stronger than that between gestational DM and birth defects and was consistent, regardless of BMI. The association in women with gestational DM was limited to obese women. The authors conclude that pregestational DM is associated with a broad range of defects and gestational DM is associated with a limited group of defects, and that the gestational DM association is limited mostly to overweight and obese women.

Comment: This study provides a comprehensive description of the risk for congenital anomalies associated with both pregestational and gestational DM. The findings underscore the importance of maintaining good glycemic control in women of childbearing age with pregestational DM and of weight control among overweight adolescent and young adult women, especially since organogenesis will almost be complete by the time most women realize that they are pregnant.

— William P. Kanto, Jr., MD

CITATION(S):

Correa A et al. Diabetes mellitus and birth defects. *Am J Obstet Gynecol* 2008 Sep; 199:237.e1

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PROMIL Gold is a nutritious follow-on formula for babies aged six months or older. PROMIL Gold is not a breast-milk substitute. PROMIL Gold has been specially formulated for use as a supplement to the solid food portion of the older baby's diet.

References: 1. Alves-Rodrigues A, Shao A. The science behind lutein. *Toxicol Lett.* 2004;150:57-83. 2. Schalch W, Dayhaw-Barker P, Barker II, FM. The carotenoids of the human retina. In: Taylor A, ed. *Nutritional and Environmental Influences of the Eye.* Boca Raton, Fla: CRC-Press; 1999:1-36. 3. Canfield LM, Clandinin MT, Davies DP, et al. Multinational study of major breast milk carotenoids of healthy mothers. *Eur J Nutr.* 2003;42(3):133-141. 4. Landrum JT, Bone RA, Joa H, Kilburn MD, Moore LL, Sprague KE. A one year study of the macular pigment: the effect of 140 days of a lutein supplement. *Exp Eye Res.* 1997;65:57-62.

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