

Cholesterol

CHILDREN AND CHOLESTEROL

Q: Is the current U.S. diet among children responsible for adult cardiovascular disease?

A: In American children there is a lack of correlation between diet and cardiovascular disease risk factor variables. In childhood and adolescence, other factors such as obesity, aerobic capacity, blood pressure and cigarette smoking are important determinants of the likelihood of cardiovascular risk factors being present.

A high fat diet is one of the contributors to elevate serum cholesterol; and elevated serum cholesterol is just one of the risk factors for heart disease. Other risk factors include smoking, high blood pressure, a family history of heart disease, obesity, diabetes and being male. Experts suggest that counseling on the maintenance of ideal body weight and a regular exercise program should be emphasized. Teenagers should also be counseled on the dangers of smoking.

Guidelines for desirable height, weight and blood pressure which can permit the early recognition and treatment of obesity and hypertension are available. Health care providers are encouraged to help children establish healthy lifestyle patterns for adult life, with particular attention to the factors over which the individual has control - i.e. cigarette smoking, activity patterns, healthful diet and avoidance of obesity - and which are largely established during the first two decades of life.

Q: Should my child have a blood cholesterol test?

A: Universal testing of blood cholesterol of children is controversial. Children at high risk due to positive family history of CHD should be screened. It is not yet practical to screen all children for hyperlipidemia. Children with high familial risk, children with diabetes, obese children, those on special high protein athletic diets, and those with certain other childhood diseases are candidates for screening.

More American adults are receiving a routine Cholesterol screening. Its goal is to detect those people who need professional counseling and dispel the unfounded fears of others who do not. Serum cholesterol levels of below 200 mg/dl are recommended by the National Cholesterol Education Program (NCEP) as desirable for adults.

However, the establishment of comparable guidelines for children is an ongoing process and is not without controversy. Mean serum cholesterol values among healthy children, shown in the chart below, can provide a useful frame of reference.

The current mean serum cholesterol level for all U.S. children is 160 mg/dl. There is no evidence to indicate that this value is deleterious to long-term health. Similarly, there are no studies showing that lower levels would be beneficial in the

prevention of future cardiovascular disease. The committee on Nutrition of the American Academy of Pediatrics has judged that "the value of routine testing appears outweighed by the disadvantage..."

The American Academy of Pediatrics recommends:

- Elective testing of children greater than 2 years of age who have a family history (parent, sibling, grandparent, uncle, aunt) of hyperlipidemia or early myocardial infarction. (less than 50 years of age in men, less than 60 years in women)
- Secondary hyperlipidemia resulting from drug use or renal, endocrine and hepatic disease should be excluded before embarking on any regimen. The values that may predict future coronary disease are not yet established in children, but children with values persistently exceeding the 75th percentile (176 mg/dl) for plasma cholesterol should be considered for dietary counseling, which is the level recommended for adult dietary intervention.
- Dietary intervention often requires nutritional counseling by and experienced registered dietitian over many months. Since the long-term efficacy of drugs to treat hypercholesterolemia has not been evaluated in children, pharmacotherapy should be undertaken with caution. It should be considered for those children with extremely high cholesterol levels (greater than 95th percentile, 200 mg/dl) and only after dietary intervention alone has been unsuccessful.

Q: Should I limit the fat and cholesterol in my child's diet?

A: Most experts recommend a varied diet that includes items from each of the major food groups for children greater than 2 years of age. Moderate intake of fat, saturated fats cholesterol and salt, consistent with the dietary recommendations for U.S. adults, are deemed sensible if followed with moderation.

The physiology and nutritional needs of growing children are different from those of adults. If adult diets designed to lower blood cholesterol are overzealously or strictly applied to children, there may be unnecessary restrictions in nutrient dense foods such as eggs, meat and dairy products, which can jeopardize the child's nutritional status, or worse, impair growth and development.

There have been several reports over the past few years of failure to thrive among children whose diets were restricted by overzealous parents. In some cases severe limitation of dietary fat in children's diets resulted in growth retardation and underdevelopment.

Recently in the American Journal of Diseases of Children, pediatricians at the North Shore University Hospital in Manhasset, NY, reported on 40 cases of

young children who were placed on low-fat diets to lower their serum cholesterol levels. The doctors found that eight children were not eating enough to grow properly; five were significantly underweight and three suffered from nutritional dwarfing. Extreme care and counseling is needed to insure nutrient adequacy when these diets are used to treat elevated blood cholesterol in children. Without supervision and without a necessary reason, parents may apply dietary restrictions too strictly.

The protein-rich and dairy food groups are the predominant sources of protein, as well as essential vitamins and minerals needed for proper growth and development. Iron deficiency is the leading cause of anemia among children, and iron is still a problem nutrient among target segments of the populations including children to age 5, boys aged 11-14, and females aged 15-50. Calcium intakes are less than 70% of the 1980 recommended daily allowance (RDA) among 25% of children aged 1-8 and 49% of teenage girls aged 9-18. Now that the RDA for calcium has been increased for females under age 25 in the interest of preventing future osteoporosis, the percentages of those with low intakes are even higher.

Not only overzealous application, but also misunderstanding of dietary recommendations by parents is a potential danger. As consumers who primarily receive their nutrition information from advertisements, newspaper and magazine articles and food labels, parents lack the sophisticated knowledge of food, nutrition and health issues necessary to engineer delicate manipulations of the diet.

In light of these considerations, and lacking any evidence that dietary restrictions would be safe and/or beneficial for children, many experts agree that restrictions of wholesome foods such as meat, eggs and dairy products during the first two decades of life should be undertaken with caution. An average of 30% of calories from fat is judged to be sensible for adequate growth and development.

The role of Eggs in Children's Diets

Eggs are a unique food in that they provide all vitamins and minerals essential for human life except vitamin C. At only 70 calories and five grams of fat (only two of which are saturated), they are a lean and economical source of high quality protein as well. Moreover, today's large egg contains significantly less cholesterol than previously thought. Today's egg contains 213 mg of cholesterol 22 percent less - rather than 274 mg.

Eggs make an important contribution to the nutritional health of growing children and should be included, along with all nutritious foods, in healthy and balanced diets.

*Modified from the Egg Nutrition Center
Available in brochure form*