Recommendations to screen cholesterol levels in children

A consensus panel sponsored by the National Institutes of Health has recommended that physicians screen children as young as 9 years old for elevated cholesterol levels. This recommendation has significant public health considerations and make strike some as governmental guideline overreaching. These recommendations are just that, recommendations, with no mandatory or punitive aspects to the guidelines.

The American Academy of Pediatrics has endorsed these recommendations. That an influential clinical group supports these evidence-based guidelines should add weight to the impact of these guidelines in the actual practice of medicine.

So why have these august bodies made these suggestions and why should parents and public health officials support them?

First, we need to recognize that cardiovascular disease has been and remains the leading cause of death in America. Second, the physiologic changes that occur in the blood vessels that result in the damage that contribute to cardiovascular disease have been elucidated and validated in the last several decades. Third, lifestyle and pharmacologic interventions have been proven to alter the course of those changes and have reduced cardiovascular events, such as heart attacks and strokes, as well as improved survival. And fourth, the processes that create this disease process begin in childhood.

During the Korean and Vietnam conflicts, autopsies of young soldiers killed in action revealed that the “abnormal” deposition of blood fats, or lipids, that was the harbinger of the disease seen in the elderly actually was noted in these young men in their late teens and early twenties. As startling as that observation was, it has become clear that the earliest changes of lipid deposition could be seen microscopically in the arteries of far younger individuals, and that the biologic processes that caused the disease in the elderly were active in the young.

Although abnormally elevated levels of “bad” cholesterol (low-density lipoprotein, or LDL, cholesterol) is just one of many cardiovascular risk factors, it remains one of the most important ones, and often has a genetic or hereditary component. Indeed, the worse form, homozygous hypercholesterolemia, can be detected by measuring the cholesterol level of umbilical cord blood, i.e., before the infant has ever taken any food by mouth. Fortunately, that condition is relatively uncommon, but other less severe genetic forms of abnormal lipid values can create premature disease in younger patients, especially if life-styles, e.g., bad diet and being overweight, are contributing factors to the genetic predisposition. Indeed, the U.S. Centers for Disease Control and Prevention, has pointed out that childhood obesity in America is now at 17% of children, three times the rate from 1980.

Detecting elevated cholesterol levels in children is the warning bell that this combination of genetic predisposition and perhaps suboptimal lifestyle may be active in that child, and that appropriate interventions should be considered. This does not necessarily mean medications, but may certainly mean changes in diet and other modifiable risk factors that add to that child’s future cardiovascular risk.

Children whose genetic family profile include elevated LDL-cholesterol, low “good” (HDL) cholesterol, diabetes, high blood pressure, but also bystander risk factors like second hand smoke or bad dietary habits or physical inactivity that may lead to obesity can also be advised on modifications that may reduce future cardiovascular risk. The decision on when to intervene with medications needs to be individualized and left to the family and their health care provider.

In my estimation, the requirement for medications like statins in children is and should remain very limited. Efforts to keep their weights normal, eat their fruits and vegetables, and get exercise remain the cornerstone of management in children. But having their elevated cholesterol levels known will give impetus to the recommendations and redouble the efforts of those who care for these children, both family and health care providers, to implement healthful changes.

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