

## Should Family Physicians Routinely Screen for Hypercholesterolemia in Children?

For a summary of the NHLBI guidelines on cardiovascular risk reduction in children, see Practice Guidelines on page 776.

### No: Universal Screening Has Uncertain Benefits and a High Risk of Harms

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Atherosclerosis can be demonstrated in young arteries, and its development over time correlates with the presence of risk factors for the disease, including higher lipid levels. But the presence of this association should not prompt screening just because it is available. We should screen only when the results of the test lead to an action that improves health. An improvement in health that results from lipid screening in children can only accrue from a sustained impact on behavioral risk factors or an increase in the use of cholesterol-lowering medications.

The National Heart, Lung, and Blood Institute (NHLBI) recommends universal lipid screening in children before puberty,<sup>1</sup> yet there is no consensus that lipid screening should be universal in young adults.<sup>2</sup> Although statins can reduce the risk of a first major coronary event over a five- to 10-year period in high-risk adults 45 years or older,<sup>2</sup> it is not known whether statin use beginning in childhood or early adulthood will increase this observed benefit. Surrogate markers of outcomes, particularly those that simply show a change in the value of the risk factor itself from the use of medication, are notoriously poor at predicting impact on morbidity and mortality. Attempts to increase high-density lipoprotein cholesterol levels to improve cardiovascular outcomes provide a good example—medications that raise high-density lipoprotein cholesterol levels have not lowered rates of coronary heart disease events.<sup>3</sup>

Because the benefit we hope to achieve with screening and treatment in children may not become apparent for many decades, some



This is one in a series of pro/con editorials discussing controversial issues in family medicine.

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would argue that studies that could clarify the benefits and harms of screening in children cannot be done. However, randomized controlled trials often look at outcomes over 10 to 15 years; is it asking too much to seek evidence of the impact of screening on lipid levels, behavioral risk factors, and markers of atherosclerosis development over 10 years? Statins are not harmless. In adults, there are known risks of liver toxicity and myopathy, and the U.S. Food and Drug Administration warns about possible cognitive changes and an increased risk of diabetes mellitus.<sup>4</sup> What might we expect from decades of treatment that begins in childhood? At a minimum, we need large trials of treatment in children that are of at least the same duration as adult trials demonstrating safety and effectiveness before recommending a screening program that will increase the lifetime use of statins in children.

What should physicians who care for children do with a seemingly authoritative recommendation for universal lipid screening in children?<sup>1</sup> There are conflicting viewpoints on the subject,<sup>5-7</sup> and the different processes by which evidence is reviewed and recommendations are made clearly result in different conclusions. Those who believe that the primary goal of lipid screening is identifying children who need to initiate a lifelong pattern of behavior modification to counter a risk profile that *may* result in shortened life expectancy will forge ahead with the hope of sustained benefit and absence of harm. However, the behavior modifications that

would be recommended are already part of the anticipatory guidance provided at routine well-child visits. This guidance can be based on body mass index measurement and family history, without cholesterol screening. Those who look for objective evidence of benefit from screening, and fear the harms associated with labeling children based on screening results and the increased use of medications with unclear intermediate and long-term benefits and harms will be reluctant to adopt universal screening simply because a panel of “experts” recommends it.

The evidence bar should be higher for preventive services. Even for the best preventive services with a strong evidence base, only a small fraction of those for whom the service is provided will live longer or have a better quality of life as a result of that service. Epidemiology assures us that it will take decades to achieve any benefits from lipid screening in childhood, and adult studies show a high likelihood of some harms. Physicians and parents should question the wisdom of universal screening in children.

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