



# Lipid Screening in Children and Adolescents



**NATIONWIDE  
CHILDREN'S**

*When your child needs a hospital, everything matters.<sup>SM</sup>*

## Lipid Screening in Children and Adolescents

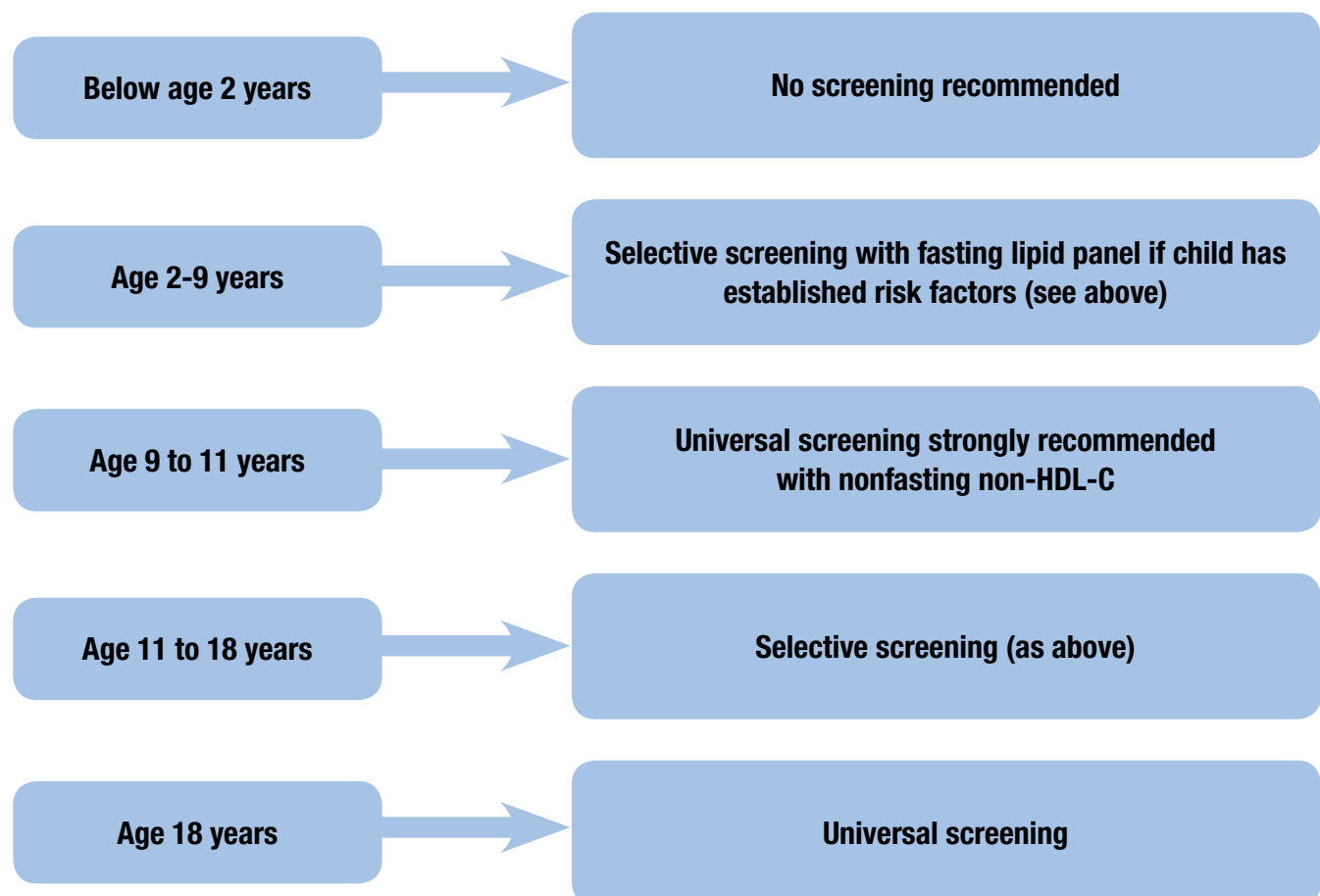
Ischemic cardiovascular disease (CVD), including coronary heart disease and stroke, is characterized by reduced blood flow to the heart. It is the most common cause of mortality in the world. With rising rates of obesity, type 2 diabetes, atherosclerosis and other known risk factors for CVD, it is increasingly important to identify at-risk populations to prevent the development of future CVD events with effective management.

In 2011, the National Heart, Lung, and Blood Institute (NHLBI) Expert Panel published updated guidelines for cardiovascular health and CVD risk reduction in youth. One of the main points of these guidelines is the strong recommendation for universal lipid screening for patients who are between 9 and 11 years of age and a second universal screening is performed between 17 and 21 years of age.

However, targeted (selective) screening should be done starting at age 2 years old if the patient has established risk factors, including:

- Parent with known dyslipidemia
- Family history of early CVD
- Hypertension
- Obesity
- Tobacco use
- Diabetes (type 1 and type 2)
- Kidney disease
- Heart transplant
- Kawasaki disease
- Chronic inflammatory disease
- HIV
- Nephrotic syndrome

### Screening Recommendations



## Interpreting Lipid Values

Nonfasting and fasting lipid panels are used to measure the amount of LDL, HDL and total cholesterol in the blood. Nonfasting panels are typically used for universal screening because the patient does not have to do any preparation for the test. However, if the nonfasting panel is abnormal or borderline, a fasting lipid panel should be done for more accurate assessment.

**Nonfasting:** Non-HDL cholesterol should be less than 145, and HDL should be above 40.

### Interpreting Lipid Values (in mg/dL) for Children and Adolescents

	Acceptable	Borderline	Abnormal
Total cholesterol	<170	170-199	≥ 200
Non-HDL	< 120	120-144	≥ 145
LDL	<110	110-129	≥ 130
HDL	>45	40-45	< 40
Triglycerides (age 0 to 9 years)	<75	75-99	≥ 100
Triglycerides (age 10-19 years)	<90	90-129	≥ 130

## How to Treat Dyslipidemia in the Pediatric Patient

The NHLBI guidelines focus on lifestyle modification for the first six months after diagnosis in nearly all patients. Much of the initial management of identified CVD risk factors can be done in the primary care setting if nutrition support and other lifestyle counseling are available. When lifestyle modifications fail to reduce the lipids to the desired level in patients with extreme lipid disorders, pharmacotherapy is recommended.

The back panel of this practice tool provides sample diet and exercise recommendations to help you get started. For more information about diet and exercise in children with borderline-to-high cholesterol, please call our Physician Direct Connect Line to speak with a specialist: (614) 355-0221.

### When to Refer to a Pediatric Cardiologist\*

At The Heart Center, we will see any patient with abnormal fasting lab results. If non-fasting lab results are abnormal, the referring physician should order a fasting lipid panel before the specialist visit.

Urgent referrals are recommended for LDL greater than 190 and triglycerides greater than 500.

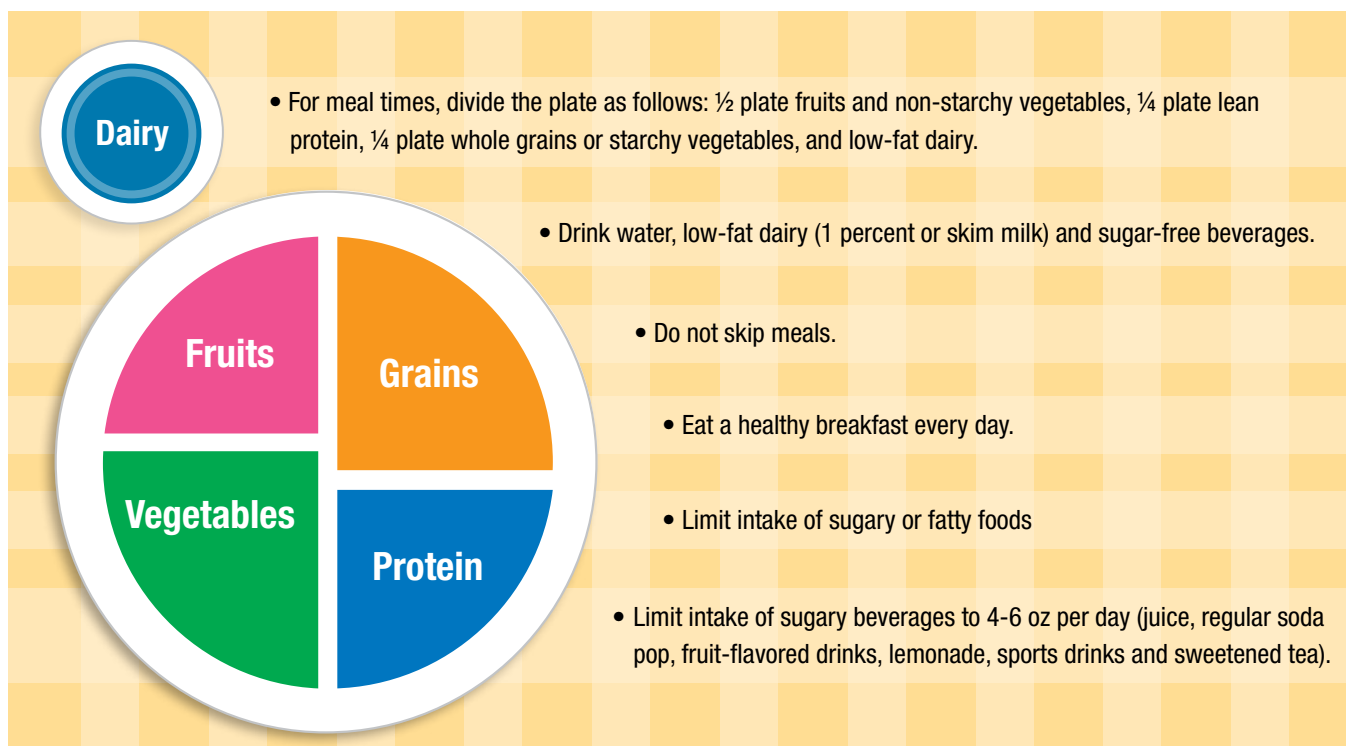
*\*For late adolescent and young adult patients who have no underlying congenital heart disease, you may consider referral to an adult cardiologist.*

## Family Guide to Diet and Exercise Recommendations

The following recommendations are good for everyone but are of particular importance for people who are at risk for cardiovascular disease. Making healthy choices now is the foundation for a healthy heart into adulthood.

**Exercise guidelines:** Exercise 60 min everyday divided among aerobic, bone loading and muscle strengthening physical activity. If currently inactive, start with 10 min/day or 10 min most days and add an additional 5 min every week or every 2 weeks, depending on your ability. It is important to work with your physician on an exercise plan that is accessible and safe.

**Nutrition guidelines:** Follow MyPlate recommendations. More information about MyPlate is available at [ChooseMyPlate.gov](http://ChooseMyPlate.gov).



Source: [ChooseMyPlate.gov](http://ChooseMyPlate.gov)

## Referrals and Consultations

Online: [NationwideChildrens.org/Heart](http://NationwideChildrens.org/Heart)

Phone: (614) 722-0494

Physician Direct Connect Line for 24-hour urgent physician consultations:

(614) 355-0221 or (877) 355-0221

## Laboratory Testing and Pathology Consultations

Online: [NationwideChildrens.org/Lab](http://NationwideChildrens.org/Lab)

Phone: (614) 722-5477 or (800) 934-7575

