

Center for Better Health and Nutrition Family Information Booklet



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Welcome

Welcome to the Center for Better Health and Nutrition (CBHN). Our mission is to address the health needs of overweight and obese children and teenagers through comprehensive, family based treatment. We serve overweight and obese youth ages 2 to 19.

CBHN strives to help each patient achieve his or her optimum health. Together, a team of experts focuses on the medical, nutritional, exercise, nursing, psychological, and social needs of each patient. The medical provider looks for any underlying cause of obesity as well as medical complications that result from obesity. One way we do this is through lab work. In addition, it may be necessary that your child see a subspecialist to further manage significant medical complications of obesity. These complications are discussed in depth later in this booklet.

A Registered Dietitian will work with each patient and family to provide individual nutritional counseling. Our philosophy is to establish a healthy way of eating that is good for the entire family. This is done in a step-by-step manner to create healthy eating habits in a supportive environment. In addition, we offer hands-on, group educational sessions including: food tastings, menu planning, recipe rehab, cooking, and grocery store tours.

Exercise is an important part of living a healthy life. Our exercise physiologists evaluate and guide patients in creating an exercise plan. Here at CBHN, we have created fun, non-competitive group exercise classes in which children look forward to participating. Additionally, we have programs in the community at several YMCAs to make exercise as convenient as possible for our families.

Patients also have the opportunity to see a psychologist to address mental health concerns. Our psychologist can also work with families to help them stay motivated on this journey to healthy living. A social worker is available to help support families and link them to resources as needed.



What You Can Do

Starting on the path to living a healthy lifestyle can sometimes be scary for a child. Change can often cause fear and anxiety in a child. You can help make this a fun and exciting adventure rather than a punishment or something to dread. Here are some tips for you:

- Stay positive.
- Encourage your child.
- Praise your child when he tries a new fruit or vegetable, makes a healthy choice, or joins in active play.
- Do not dwell on perceived failure. If a child makes an unhealthy choice, focus on moving forward and making a better choice next time. Lead by example.

The nutrition advice from the Center for Better Health and Nutrition is great for the entire family, no matter what you weigh. Ideally, the entire family will go on this journey together. If everyone in the family is trying to be the healthiest they can be your child will not feel alone.

- Get rid of unhealthy snacks and sugar-containing drinks in your home.
- Enjoy healthy meals at home together at the table.
- Support your child by eating healthy and exercising together.

All of these things will give your child the best chance of success!

What We Will Do

We know that talking about weight and the medical problems that come with being overweight can be hard. We will treat you and your child with respect and dignity at all times. We want you to feel like our partner in your child's weight loss journey. Here is what you can expect when you come to the Center for Better Health and Nutrition.



Labs (Blood Work)

Labs are used as a screening tool for uncovering some of the medical conditions we will talk about in this booklet. Even though your child or teen may not have any symptoms, there may still be a hidden medical condition. Finding and treating any problems early may prevent long-term complications of obesity in the future.

Your child cannot eat or drink anything, except water, for 12 hours before having lab work done. Your healthcare provider will let you know if this will not be needed for your child’s blood work.

The lab work will tell us if your child has any of the following problems:

- diabetes
- fatty liver disease
- thyroid disorders
- cholesterol problems

We also test for other problems but these are the most common issues seen in children who are overweight. Here is a list of some of the lab tests and what they tell us.

Name of Blood Test	What it Tells Us	Acceptable Level
Blood Sugar (fasting glucose)	Used as a screening for diabetes	Less than 100 mg/dL
Fasting Insulin	Tells us if there is too much insulin in the blood (this could lead to diabetes)	Varies with age, but in general, should be less than 30 mIU/mL
Hemoglobin A1C	Tells us what your average blood sugar has been over the past 2-3 months	Less than 5.8%
TSH (thyroid stimulating hormone)	Used as a screening for thyroid problems	Between 0.4 – 4.0 mIU/mL
AST,ALT, GGT	Three different liver enzymes that tell us if there is any damage to the liver cells	AST – less than 40 units/L ALT – less than 40 units/L GGT – less than 40 units/L
Lipid Panel - includes total cholesterol, HDL (good cholesterol), LDL (bad cholesterol) and triglycerides	<p>All of these tests will tell us about cholesterol.</p> <ul style="list-style-type: none"> • HDL is good cholesterol that helps take out the bad cholesterol from of the body • LDL – this bad cholesterol can stick to your blood vessels and cause them to become blocked • Triglycerides – type of fat that is carried in your blood 	<p>Total cholesterol – less than 200, but less than 170 mg/dl is ideal</p> <p>HDL – for boys: higher than 40 mg/dl. For girls, higher than 50 mg/dl.</p> <p>LDL – less than 100 mg/dl</p> <p>Triglycerides – less than 150 mg/dl</p>

Once your child has been examined by the health care team, other lab tests may be needed.

Diagnostic Tests

Your child may need other kinds of tests, too. Most of these are painless and do not require a needle stick.

Name of Test	Purpose of Test	What's Involved
Body Composition	To see how much water, fat mass and lean muscle mass your child's body has	<ul style="list-style-type: none"> - Stand barefoot on a special scale and grip handles. <i>If patient is pregnant or has an implanted electrical device, the test can NOT be done.</i> Test takes less than 3 minutes
Oral Glucose Tolerance Test	To screen for Diabetes	<ul style="list-style-type: none"> - Test takes about 3 hours - An IV (thin tube) is put in the arm or back of the hand - Your child will drink a sweet drink at the beginning of the test and then blood is taken out of the IV - You will get the results in 1-2 weeks after the test
Echocardiogram, or "echo"	To see your child's heart by using ultrasound (like an x-ray)	<ul style="list-style-type: none"> - No needles - Gel is put on the chest and a special wand is used to see the heart - Takes about 45 – 60 minutes - Results are known within 1 week
EKG, or electrocardiogram	To look at the electrical activity of the heart	<ul style="list-style-type: none"> - Painless and quick, less than 10 minutes - Small stickers are placed on the chest and wires are connected to a monitor which records the electrical rhythm of the heart.
Graded Exercise Test	To see how your child's body reacts during exercise	<ul style="list-style-type: none"> - Painless - Usually done using a treadmill - Looks at how your body reacts to exercise that gradually gets more intense - Time on treadmill is about 10 minutes but entire procedure is about 30-60 minutes
Abdominal Ultrasound	To look at the liver, gallbladder and other organs in the belly	<ul style="list-style-type: none"> - Painless - Will have to have no food or drink for 8 hours before the test - Takes about 30 minutes or less

We will try to call you and share the results of these tests and lab work within 2 weeks. If you have not heard from us, please call our office at (513) 636-4305. Do not assume that your child's tests are okay because you have not heard from us. We may not have the right phone number and/or address for your family. Please make sure to update your child's information at our office



Specialty Referrals

Based on the findings from your child's exam, we may need to do more tests or have your child see a specialist. We may ask you to see one or more of these specialists.

- **Pulmonary** – For loud snoring, sleep apnea, trouble sleeping or asthma
- **Endocrine** – For pre- diabetes, diabetes, thyroid disorders, growth issues, weight gain caused by medications, polycystic ovary syndrome, or menstrual problems
- **Gastroenterology** – For fatty liver disease, belly pain, constipation, or severe GERD (gastro esophageal reflux disease).
- **Cardiology** (including Lipid Clinic & Hypertension Clinic) – For high blood pressure, very abnormal cholesterol levels, enlarged heart, fainting during exercise, or any other heart issues
- **Ear, Nose, and Throat** – For enlarged tonsils, snoring, repeated throat or sinus infections
- **Orthopedic** – For scoliosis, back, hip, knee, or other joint pain, bowing of the lower legs
- **Psychology** – For emotional issues related to excess weight, teasing, bullying, depression, teen issues, family disruption or stress, trouble with school
- **Adolescent Medicine /Teen Health** – For irregular periods, birth control, general teen health
- **Urology / Healthy Bladder** – For bedwetting
- **Headache Clinic** – For headaches or migraines
- **Ophthalmology** – For trouble seeing, headaches, or yearly eye exam
- **OT (Occupational Therapy)** – For trouble swallowing, trouble tolerating certain textures of food, or food aversions or avoidances
- **Surgical Weight Loss Program for Teens** – To see if surgical weight loss is an option for your child



What is “BMI,” “BMI percentile” and why is it important?

First, let’s explain BMI – “**Body Mass Index**”.

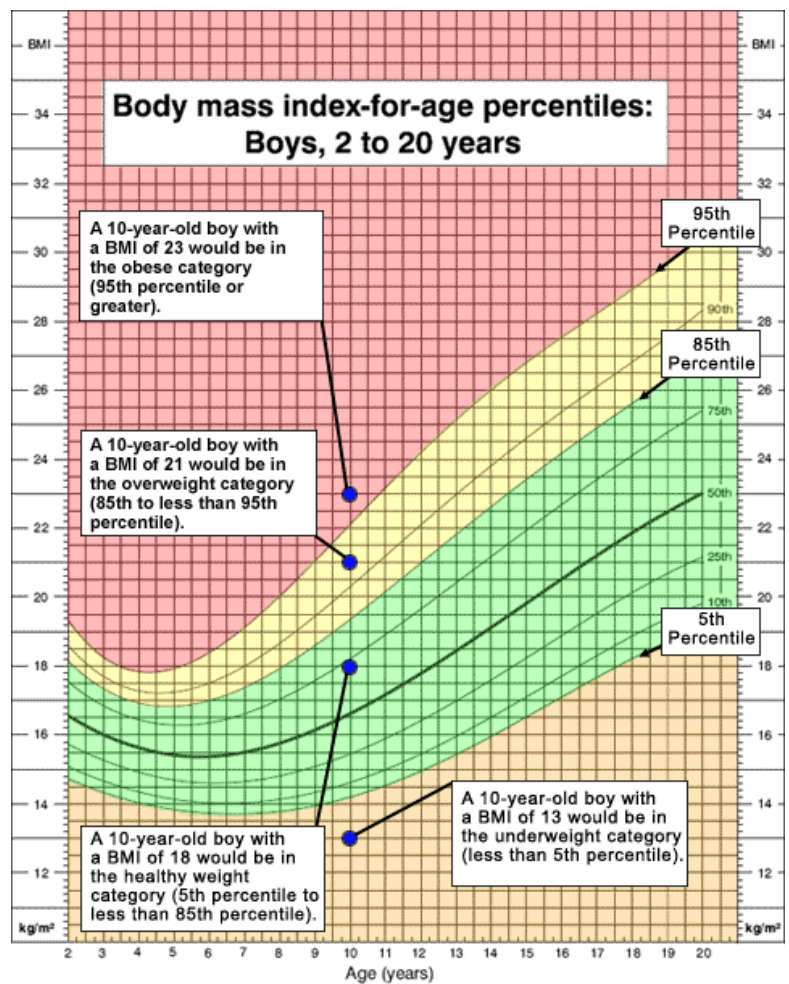
Body Mass Index is simply a number that gives us an idea of how much body fat you have. To get a person’s body mass index, you need to know their height and weight. BMI lets us see who may be at risk of having health problems due to their weight.

BMI is only a screening tool. It is not a perfect measure. For example, very muscular athletes may have a *high* BMI simply because they have more lean muscle mass than “fat” mass. It works the opposite way too. Just because a person’s BMI falls in the normal range *doesn’t* mean he or she doesn’t have excess body fat. This is another reason why it’s important to discuss your child’s medical history with the health care provider.

- The **BMI number is just part of the story**. The BMI number is plotted on a chart that looks at a child’s age and gender and gives us a number as a percent. This percent number for BMI tells us which group your child falls into:
 - underweight
 - healthy weight
 - overweight
 - obese

Take a look at this BMI percentile chart for boys. It shows how different BMI numbers for a 10 year old puts him in a different group.

The Higher the BMI number, the higher the BMI percentile. The lower the BMI number, the lower the percentile.



Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

So why does this matter?

A large amount of research has been done on childhood obesity. Research has shown that about 16.9% of children and teens aged 2-19 years are obese. It shows that a BMI greater than the 85th percentile increases a child's risk for medical problems (like diabetes and heart disease) due to their weight. This can impact your child's overall health and well-being now and in the future.

How does Obesity Affect Puberty?

- Obese children tend to be taller than their normal weight classmates when they are young.
- They are also more likely to begin puberty at an early age. Since children stop growing as they go through puberty, obese children often stop growing before other children of normal weight.

Medical providers get concerned when puberty starts too early. This can be a warning sign that an endocrine disorder exists. We will check your child's stage of puberty during his/her exam. Your child might need further testing if puberty begins before 6 or 7 years old in girls and before 9 years old in boys.



Medical Problems Related to Being Overweight or Obese

When a child, teen or adult is overweight, they have a higher risk of having other medical issues. You may not be able to “see” some of the problems, like high blood pressure, fatty liver disease, and high cholesterol. Other problems are very visible, such as Blount’s disease, where the lower part of the leg bows out. People also have trouble coping with the feelings they have about their excess weight. They may have feelings of sadness, anger, depression, isolation, or anxiety.

We have listed some of the common problems that are seen in people with excess weight. They are not listed in any type of order. They *all* can greatly impact your child’s health.

Disclaimer: This information is a *brief* overview. It is not intended to diagnose your child. Some of these conditions may apply to your child now, some may not. Some children and teens may be *at risk of developing* these conditions in the future. We urge you to speak with your healthcare provider(s) for more detailed information regarding *your child’s* specific medical history and risk.



Endocrine Disorders

Insulin Resistance & Pre-Diabetes

What is Insulin Resistance?

Insulin resistance happens when the body's insulin is not working well.

- Insulin moves sugar, or glucose, from the blood stream into body cells. The cells use sugar for energy. This process keeps blood sugar levels in a normal range.
- When the body's insulin is not working well due to a person's excess weight, the pancreas must make more insulin to keep the blood glucose in a normal range.
- Over time, the pancreas may not be able to keep up with making extra insulin. This is when diabetes may develop

Are There Any Signs to Watch For?

The skin around the neck, armpits, and other areas of the body may get dark and thick when someone has insulin resistance. You may just think your child has a “dirty neck”.



How Do You Test for Insulin Resistance?

You can test for insulin resistance by doing a simple blood test. We may also suggest getting a test that involves your child drinking a sweet drink and then drawing their blood over a 2 hour period

What Does This Mean for My Child?

Insulin Resistance can be a sign of “pre-diabetes.” It is our body's way of sending us a “red flag” warning. If you notice any dark or thick skin on your child, talk with your healthcare provider. The good news is that once your child's weight is in a healthy range and the insulin levels move closer to normal, the skin may lose the dark color and thickness. The risk of developing type 2 diabetes decreases, too. The bad news is that, in the long run, insulin resistance could lead to Type 2 diabetes. There's no way to predict exactly when or if someone who is insulin resistant will go on to develop diabetes. We do know that the risk of developing diabetes increases each year if the weight continues to rise and you continue to have high insulin levels.



Type 2 Diabetes

What is Type 2 Diabetes?

Type 2 diabetes often *begins* with insulin resistance. Over time, the body requires more insulin to control blood glucose (sugar) levels. The pancreas has to work harder and harder to make the extra insulin. Over time, the pancreas cannot keep up with the demand. Once this happens, the blood sugar levels start to rise and you end up with Type 2 diabetes.

Type 2 diabetes used to be seen as an “adult” disease found in those who were overweight and over 40 years of age. As more and more children and teens become overweight and obese, the number of children with type 2 diabetes is increasing. Type 2 diabetes is more common in certain racial and ethnic groups such as African Americans, American Indians, Hispanic/Latino Americans, and some Asian and Pacific Islander Americans.

Are There Any Signs to Watch For?

Type 2 diabetes develops slowly over time. Some people may have no symptoms at all. Others may have these symptoms:

- feeling thirsty a lot
- feeling tired
- having belly pain,
- feeling sick to the stomach (nausea)
- feeling the need to pee a lot - may get up often through the night to drink something or pee
- losing weight
- blurry vision
- frequent infections
- vaginal yeast infections
- having wounds that take longer to heal

Some children may have a very high blood glucose level along with severe dehydration and coma. That is why it is important for health care providers to identify and test children or teens who are at high risk for the disease.

Things that may increase your risk of getting diabetes include:

- being overweight
- having high insulin levels
- having a family member who has type 2 diabetes
- being a member of a high risk racial or ethnic group.



Type 2 Diabetes *continued...*

How Do You Test for Type 2 Diabetes?

You test for type 2 diabetes the same way you test for insulin resistance – with a blood test.

What Does this Mean for My Child?

Type 2 diabetes puts a person at high risk for complications. Diabetes affects just about every part of your body. It affects the kidneys, nerves, feet, and eyes. Having diabetes also puts you at higher risk for heart disease.

Diabetes has very harmful consequences. Since excess weight is one of the major risk factors for developing diabetes, it is important to work hard to reach a healthy body weight.

Thyroid Disease

What is Thyroid Disease?

Families are often worried about their child's "thyroid" and think it may be the reason why their child is overweight or obese. In some children, a thyroid disorder can cause weight gain. But the thyroid is normal in **most** children who have a weight issue. We do a routine blood test to check the thyroid during your child's first medical appointment. If this thyroid test is abnormal, we may need to do more testing.

The thyroid gland is located in the front of the neck just below the voice box (larynx). It is a small, "butterfly" shaped gland that has 2 lobes which are wrapped around each side of the windpipe. The gland makes hormones that affect just about every organ, tissue, and cell in the body. These hormones control our heart rate, body weight, body temperature, energy level, and menstrual regularity.

Are There Any Signs to Watch For?

Hyperthyroidism makes the reactions inside our body go faster. Some of the symptoms of hyperthyroidism are:

- losing weight without trying
- fast or irregular heartbeat
- nervousness
- moodiness
- increased sweating
- warm body temperature
- loose bowels
- decreased menstrual flow



Hypothyroidism causes the body to function at a lower or slower rate. Some of the symptoms of hypothyroidism are:

- low energy
- trouble in school
- weight gain
- dry skin, hair, and nails
- constipation
- depression
- memory problems
- menstrual abnormalities
- cold intolerance

How Do You Test for Thyroid Disease?

TSH (Thyroid Stimulating Hormone) is the initial lab test used to screen for a thyroid disorder. This test will tell us if there is too much thyroid hormone being made (*hyperthyroidism*) or not enough of the hormone being made (*hypothyroidism*).

Polycystic Ovary Syndrome (PCOS)

What is Polycystic Ovary Syndrome (also called PCOS)?

Females normally produce some male hormones known as “androgens”. But with PCOS, females make too much male hormones. Females with PCOS typically make too much insulin too. (*See section on insulin resistance.*)

Girls with PCOS may also develop many small cysts on their ovaries. We don’t know why some females get PCOS. It is known that being overweight or obese can contribute to this condition.

Are There Any Signs to Watch For?

PCOS is often discovered when a female has problems with her menstrual cycle. PCOS may cause a female to have:

- no menstrual periods
- irregular periods
- acne
- thinning hair or balding
- infertility issues
- excess hair growth on her upper lip, chin, “sideburn” area, lower abdomen and/or back



How Do You Test for PCOS?

PCOS can be diagnosed by doing blood work and/or an ultrasound of the ovaries. This test is painless.

What Does this Mean for My Child?

Proper nutrition, weight management and/or weight loss, and exercise can help manage PCOS symptoms. There are certain medicines that may help your child's specific condition and may include hormones such as birth control or medicine to lower the insulin level.

As with most other weight related problems, PCOS can raise your risk of developing diabetes, heart disease, and/or high blood pressure.

Note: *Not all menstrual abnormalities are due to PCOS.* There are many other reasons and you are strongly encouraged to speak to your healthcare provider about your child's specific condition.

Cushing Syndrome

What is Cushing Syndrome?

Cushing Syndrome is a rare condition where there are increased levels of the hormone, cortisol. This hormone level may be high due to certain medicines your child is taking and/or problems with the pituitary gland.

Are There Any Signs to Watch For?

Some of the physical changes you may see with Cushing Syndrome include:

- short height
- increased fat accumulation on the face and in the stomach area but not as much on the arms and legs
- a round, full face
- fatty hump on the back of the neck, between the shoulder



Cardiovascular Disorders

Hypertension (High Blood Pressure)

What is hypertension?

Hypertension is when blood pressure (BP) is higher than normal based on a person's age, gender, and height. Even very young babies and children can have high blood pressure. Children who are overweight usually have higher blood pressure than those who aren't overweight.

Blood pressure (BP) tells us how hard the heart is working to push blood through the blood vessels.

- When your heart beats, it pushes blood out of the heart and into your blood vessels. Your blood pressure is highest during this time. This is called the systolic (si-**stol**-ik) pressure.
- When your heart is at rest, your blood pressure falls. This is called the diastolic (dahy-uh-**stol**-ik) pressure.
- When you are given your blood pressure reading, the top number is the systolic pressure (heart pushing blood out to your body) and the bottom number is the diastolic pressure (heart at rest).
- An example of a blood pressure reading may be “120 over 80”. It is written as:

<u>120</u>	(systolic pressure)
80	(diastolic pressure)

Types of High Blood Pressure

When high blood pressure is caused by other conditions or diseases, such as heart or kidney disease, pregnancy, or medications, this is called secondary hypertension. If the other condition or disease is successfully treated, blood pressure usually returns to normal.

Primary, or “essential”, hypertension occurs when you cannot pinpoint one condition that is causing the high blood pressure. Most people with high blood pressure of this type are often not aware they have it. Primary hypertension happens gradually over time and, at first, causes no symptoms. It is only after an organ in the body is irritated or damaged, that the consequences of high blood pressure are recognized. Because of this, high blood pressure is often referred to as a silent killer. Nearly every body organ is affected by prolonged exposure to high blood pressure and it is a major risk factor for heart disease and stroke in adulthood.



What Causes High Blood Pressure?

Known risk factors for developing high blood pressure include:

- family history of high blood pressure or heart disease
- obesity
- smoking
- poor dietary habits
- diabetes
- high cholesterol
- physical inactivity
- Certain ethnic groups are more susceptible to hypertension including African Americans

A single, elevated blood pressure reading in the doctor's office does not mean your child has high blood pressure. The increase may be due to being nervous when the blood pressure is taken. This is commonly referred to as “White Coat” high blood pressure. If this is thought to be the case, it will be discussed and evaluated further at your appointment.

Left Ventricular Hypertrophy (LVH)

What is Left Ventricular Hypertrophy?

In someone who is obese and has high blood pressure, the lower left chamber of the heart must work harder to do its job resulting in a “thickened” heart muscle. The thickened muscle makes the heart chamber (the space for blood) *smaller*.

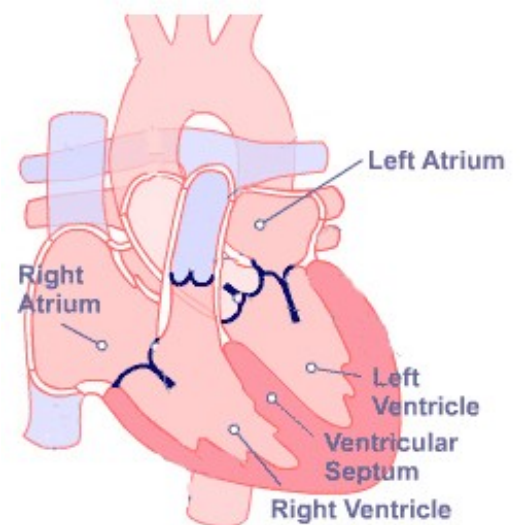
How Do You Test for LVH?

If there is a concern that your child has LVH, an **Echocardiogram** (heart ultrasound) may be recommended.

What Does That Mean for My Child?

Obesity is not the only condition that can cause LVH, although it is fairly common. If LVH is caused by the obesity, the good news is that this condition *may* resolve once your child gets to a normal weight.

Children may need a referral to a Cardiologist if they have LVH, obesity, elevated blood pressure, and/or a strong family history of early cardiovascular events, such as heart attacks or strokes occurring in a family member during their 50's or younger.



Dyslipidemia

What is dyslipidemia?

Our bodies need and make a certain amount of cholesterol to function correctly. Cholesterol is a soft, waxy like substance found in all parts of our body. “Dyslipidemia” refers to abnormal blood levels of cholesterol and/or fats (lipids) in your blood.

High cholesterol levels may lead to atherosclerosis (waxy plaque build-up in our arteries) and cardiovascular disease (CVD). High cholesterol is a major cause of heart attacks and/or strokes.

There are several reasons why your cholesterol levels may be high:

- Excess weight
- Physical inactivity
- Smoking or being exposed to secondhand smoke
- Eating a high fat diet
- Family history of cholesterol problems

A child can begin having high cholesterol levels in the first few years of life. To look at each specific component of your child’s “cholesterol panel”, also known as the “lipid profile”, please refer to the “Lab” section.



Gastroenterology Disorders

Non-Alcoholic Fatty Liver Disease (NAFLD)

The liver is the second largest organ in your body and is located under your rib cage on the right side. It weighs about three pounds and is shaped like a football that is flat on one side.

The liver has many jobs:

- turns what you eat and drink into energy and nutrients so your body can use it
- gets rid of harmful substances from your blood (you can read more about the liver at

<http://www.liverfoundation.org/abouttheliver/info/nafld/>

What is Non-Alcoholic Fatty Liver Disease?

Fatty liver disease is where your body stores fat in the liver cells. It is beyond the normal amount of fat we have in our liver. It is often linked with:

- obesity
- high triglycerides
- high cholesterol
- diabetes
- also seen with rapid weight loss, malnutrition, and poor eating habits

Fatty liver may not cause problems right away. But over time, the excess fat can lead to swelling in the liver which causes permanent damage (called steatohepatitis, pronounced stee-ā-toe-hep-uh-**tahy**-tis). The more severe form of NAFLD is called non-alcoholic steatohepatitis (NASH).

Once the liver is inflamed, it may become hardened and scarred over time. This serious condition is called cirrhosis. A healthy liver will have the texture of a soft, flexible, “Nerf”-type football. An “unhealthy” liver will have the tight texture of a fully inflated leather football. Once the liver becomes ‘hard’, it does not work well at all. In fact, this condition may lead to liver failure or liver cancer. NASH is also one of the leading causes of liver transplants.



Are There Any Signs to Watch For?

Since there are no symptoms when fatty liver disease first develops, you may not even know you have it. It is often first suspected on blood tests or your child's liver may feel enlarged during a routine checkup.

When symptoms do occur, they may include:

- Fatigue
- Weight loss
- Nausea
- Spider-like blood vessels
- Itching
- Fluid buildup and swelling of the legs (edema) and abdomen (Ascites)
- Weakness
- Loss of appetite
- Belly pain
- Yellowing of the skin and eyes (jaundice_
- Mental confusion

Do You Test for NAFLD?

If your child has elevated liver enzymes or symptoms on exam, he or she may need more lab work to rule out other causes of liver disease. An ultrasound may also be ordered.

However, a liver biopsy is the only sure way to diagnose fatty liver disease. You can find out more information on this website: <http://www.liverfoundation.org/abouttheliver/info/nafld/>

What Does This Mean for My Child?

There is no “magic pill”, quick fix, or procedure to get rid of fatty liver. Instead, the best way *to reverse the course* of this disease is to **treat it early** through proper nutrition, weight management, and plenty of exercise.

There is some research showing possible benefits of certain vitamins or medicines that may work, along with good nutrition and exercise to help manage fatty liver. But since this research is ongoing, we are unable to go into further detail at this point.



Gallstones

The gallbladder is a sac–like, muscular structure on the underside of the liver on the right side of the belly. The gallbladder stores bile that is produced in the liver. Bile is a substance secreted into the intestines to help digest fats.

Sometimes, hard pebble-like deposits form in the gallbladders. These deposits are called gallstones. They can be very small or as large as a golf ball.

Are There Any Signs to Watch For?

Sometimes gallstones do not cause symptoms. If you do have symptoms, you may:

- have attacks of pain (sharp, dull, or cramping) that come and go and occur in the upper middle or upper right abdomen.
 - The severity of the pain can range from “mild” to “unbearable”
 - This pain may spread to your back or upper shoulder area
 - This pain usually gets worse after meals, especially meals high in grease and fat
- get a feeling of fullness in your belly
- have stools that are “clay” or tan colored
- have nausea or vomiting

In extreme cases, you could experience fever or yellowing of the eyes (jaundice).

Conditions that may make you more likely to develop gallstones include:

- Obesity
- Elevated triglycerides
- Female gender
- Rapid weight loss (such as with malnutrition or obesity surgery)
- Crohn’s disease
- Pregnancy
- Birth control or hormone therapy



GERD (Gastroesophageal Reflux Disease) (“heartburn”)

What is GERD?

When you eat, food travels from your mouth, through a tube (called the esophagus) and into the stomach.

Normally after eating, a valve at the lower end of this ‘tube’ closes to keep acid *in* the stomach and *out* of the throat. If that valve does not close properly, you will get heartburn, also called GERD. The pain you feel with heartburn is from the contents in the stomach flowing back up into the tube. This “reflux” can lead to erosion of the esophagus and pain. In some rare cases, it can be a factor in esophageal cancer.

What Signs Should I Watch For?

Heartburn is fairly common in adults, but children and teens get it too. Children sometimes have trouble describing the sensation but may complain of these symptoms shortly after eating:

- belly pain or upset stomach
- chest discomfort
- heartburn
- coughing or wheezing
- nausea
- chronic sore throats
- trouble swallowing

What Does This Mean for My Child?

GERD can range from mild to serious. If left untreated, it may cause inflammation of the lining of the esophagus which can result in ulcers and scarring.



Pulmonary Disorders

Obstructive Sleep Apnea (OSA)

Did you find it odd that we ask if your child snores? Snoring can be more serious than some people think. Snoring may be due to “big tonsils” or sinus congestion but snoring can also be a sign of Obstructive Sleep Apnea (OSA). OSA is a serious condition. OSA happens when the muscles in your throat relax after you fall asleep. The soft tissue in the back of the throat collapses and blocks the airway. You may have even seen your child “gasping” or choking while they sleep or pausing in their breathing cycle. This leads to low oxygen levels in the blood. Children with OSA may sleep in unusual positions, use pillows to prop themselves up, sleep sitting up, wake frequently, and/or sleep with the neck overextended. You may also notice your child is a “mouth breather”.

OSA can be linked to other conditions as well including high blood pressure, poor school performance, irritability and aggression, behavior problems, restless sleep, daytime tiredness, headaches, bedwetting, poor growth, and delays in development.

If we feel your child may have OSA or is at risk for this condition, we will put you in contact with either a pulmonary specialist or an ENT doctor.

The pulmonary specialist visit may include a visit to the office followed by a separate overnight sleep test. Your child would need to spend the night in the hospital for the sleep study. This test includes keeping a close watch on your child’s breathing cycle and oxygen levels through the use of non-invasive monitors and “sticky” pads placed on your child’s chest and head. No needles are involved.

Your child may be seen by an ENT doctor if the tonsils are too large and may be the cause of your child’s snoring.

Obesity Hypoventilation Syndrome

Obesity Hypoventilation Syndrome is a rare condition seen with extreme obesity. Children with this syndrome do not breathe deeply enough while they are awake. This causes low oxygen levels and high carbon dioxide levels. Obese children are much more likely to have hypoventilation during sleep with or without obstruction. These conditions can damage the heart. If you have concerns about your child’s sleep, call your healthcare provider.

Asthma

Asthma is not caused by obesity, but obesity can worsen asthma. Obese children may have more trouble controlling their asthma. They may have attacks more often and the attacks may be more severe.



Neurologic Disorders

Idiopathic Intracranial Hypertension (pseudotumor cerebri)

Children with idiopathic intracranial hypertension (pseudotumor cerebri) have increased pressure around the brain without a tumor or other reason for the increased pressure.

One-half of children with this condition are obese. Typically, children with this condition complain of:

- headaches
- nausea or upset stomach
- vomiting
- pain behind the eyes
- vision problems

If your child has these symptoms, call your healthcare provider

Orthopedic Disorders

When a child or teen is overweight, his or her bones and muscles are put under increased stress. This can lead to short and long term musculoskeletal problems.

Blount disease (tibia vara)

Blount Disease is visible bowing of the legs. This tends to occur in children after the age of 8 years. At first, this disorder is painless. But over time, this disease may make it very hard to get around and your child may need treatment by an orthopedic surgeon.

Slipped capital femoral epiphysis (SCFE)

This is a disorder of the hip that may develop in healthy weight children but is seen more often in overweight children. This typically occurs in school age children and teenagers. Children may have hip or knee pain while walking and have decreased range of motion in the hip. This condition is diagnosed by X-ray and children are referred to an orthopedic surgeon.

Joint Pain and Broken Bones

Overweight children also have an increased rate of broken bones and musculoskeletal pain. Although overweight and obese children typically have strong bones, when they fall, they land with more force. This can lead to broken bones from an injury that would not typically lead to a break. The increased force can also cause joint and muscle pain. Knee pain is reported most frequently. If your child is having joint pain, please see your child's medical provider for evaluation. Staying active and losing weight are the best treatments for this joint and muscle pain.



SKIN DISORDERS

Obesity puts children at greater risk of some skin conditions.

Intertrigo

This is inflammation in the skin folds. This can be caused by fungus/yeast or bacteria. It typically is seen in warm, moist areas such as underneath the breasts, the underside of the belly, arm pits or the genital area. The area will look red and raw and may ooze, burn, or itch. This condition is treated with medicine and by keeping the area as dry as possible.

Furuncles

Furuncles are deep infections of a hair follicle that can extend beyond the skin into deeper tissue. These infections may improve with a warm compress and cleaning, but often a child will need antibiotics. In some cases, an incision might be needed to clean out the infection.

Hidradenitis suppurativa

This is inflammation in the sweat glands. Swollen tender nodules and cysts develop in the underarm and groin area. Flare ups can be triggered by perspiration, hormone changes, heat, and humidity. Infection can develop in these areas. Incision and drainage is often needed to treat these and relieve the pain.

Acanthosis nigricans

This condition is the darkening and thickening of skin around the neck, groin, and armpit area. It is discussed in the insulin resistance section of this booklet.



Psychological Concerns

It is hard enough being a kid and being an overweight kid can be even harder. Although not everyone deals with the same issues, there are some common emotional, psychological, and social themes that overweight kids and teens typically report.

Quality of Life

Overweight children may have worse quality of life than their non-overweight peers. Quality of life basically means how satisfied someone is with different areas of their life. Quality of life in healthcare includes physical (how healthy and able someone feels they are), emotional (how happy or content someone is), esteem (how confident or positively someone views themselves) and social (how connected someone feels to others).

Overweight kids and teens sometimes report not being able to keep up in gym class or do activities that peers are doing, including going to amusement parks or playing sports. They may feel sad or worried about things like going to school. They may have negative body image or low self-esteem. They may be bullied or they may isolate themselves, avoiding activities like swimming or parties where they feel self-conscious.

Psychological disorders

Although most overweight kids and teens don't have mood disorders like depression or anxiety, they may be more likely to report symptoms such as feeling sad or irritable. Kids who are depressed may be more likely to become overweight over time, possibly because of such things as emotional eating and decreased activity. Some overweight kids and teens report uncontrolled (binge) eating.

Bullying

Overweight kids are more likely to be the victim of bullying; sometimes they are also more likely to be a bully themselves. Bullying can be verbal (e.g., name calling, teasing), physical (e.g., pushing, shoving), and/or relational (e.g., spreading rumors, being left out). Bullying can lead to psychological disorders (see above) if untreated.

Kids and teens dealing with any of the above issues may benefit from talking with a psychologist or other mental health provider (counselor, therapist). Psychologists can help kids and teens with these and other issues by listening and helping them to process and change thoughts, behaviors, and interactions.



Healthy Habits

Consistently living a healthy lifestyle often comes down to creating healthy habits. When making healthy choices is your everyday routine, you will have less stress with each decision you face. However, trying to form many new habits at the same time can be overwhelming. Picking one goal and working on it until it becomes routine is an easier path to success.

Start your day with a healthy breakfast

Eating breakfast will help control your hunger later in the day and makes it easier for you to make good eating decisions. Starting the day off right can make a difference all day long. Breakfast eaters tend to gain less weight, eat more fiber, and eat less fat. Consider a breakfast that contains a whole grain, low-fat protein, and a fruit or vegetable. See your Healthy Eating Plan for easy and healthy breakfast ideas.



Set regular times for meals and healthy snacks

Eating three evenly spaced meals and 1 to 2 planned snacks will help your child be successful. Eating on a schedule will help their body get used to eating the right amount of food for their age and activity level.

Eat fruits and vegetables

Fruits and vegetables give your body a lot of nutrition with just a few calories... These powerhouse foods help give growing bodies what they need without empty calories. Start by including fruits and vegetables with each meal and snack. The “My Plate” reminds us that fruits and vegetables should cover half of our plate... Aim for at least 5 servings of fruits and/or vegetables a day. Here are some ideas for those who are not already eating a lot of fruits and vegetables:

- Try to eat fruits and vegetables with all of the colors of the rainbow over the course of a day or week. Using a sticker chart can make this fun.
- Play a game at the grocery store. Allow your child to choose a new fruit or vegetable for your family to try.
- Use a sticker chart to keep track of the servings of fruits and vegetables eaten during the day.
- Blend fruits (and even vegetables like raw spinach) in a blender for delicious and healthy smoothies.



Keep frozen fruit and vegetables in your freezer for produce all year long with little waste. Use frozen fruit for fruit smoothies or thaw it for quick, easy snacks



Drink water, low fat milk, and/or sugar-free drinks.

This helps manage appetite, keeps your child hydrated, and limits nutritionally empty calories. Drinks containing sugar (soda, fruit drinks, juice, sports drinks) are a leading cause of obesity in America.



Exercise for at least one hour a day

Organized sport teams and group exercise classes are a fun way to do this. Make exercise part of your everyday routine: Walk to do your errands and take the stairs instead of the elevator; Park in the parking spot farthest away. We spend too much time sitting. When it is time to play and relax, get up and move! Instead of watching TV together, go to the park or on a walk. Play ball together. Go for a swim. When the weather is bad, try to find ways to keep moving inside. Have competitions to see who can do the most jumping jacks in a row or hula-hoop the longest. Have a dance party. Move some furniture and jump rope. Try an active video game in which you are standing and moving. If you are totally out of fun ideas to move, clean the house. Just keep moving!

Limit television, video games, and all screen time to a maximum of 2 hours a day

For every 30 minutes in front of a screen, do 10-15 minutes of physical activity.



Establish a regular bed time and wake time

People who get enough sleep tend to be leaner than those who don't. It is easier to make healthy choices like eating well and exercising when we are well rested. Children need more sleep than adults. Toddlers need 12 to 14 hours of sleep a night. 3 to 6 year olds need approximately 10 to 12 hours of sleep a night. 7 to 12 year olds need about 10 hours of sleep per night. 12 to 18 year olds need approximately 8 to 9 hours of sleep a night.

“5-2-1-0” – An easy way to remember the key elements of daily, healthy habits:

5 – Eat 5 or more servings of fruits and vegetables every day

2 – 2 hours or less of recreational screen time

1 – 1 hour of moderate to vigorous physical activity

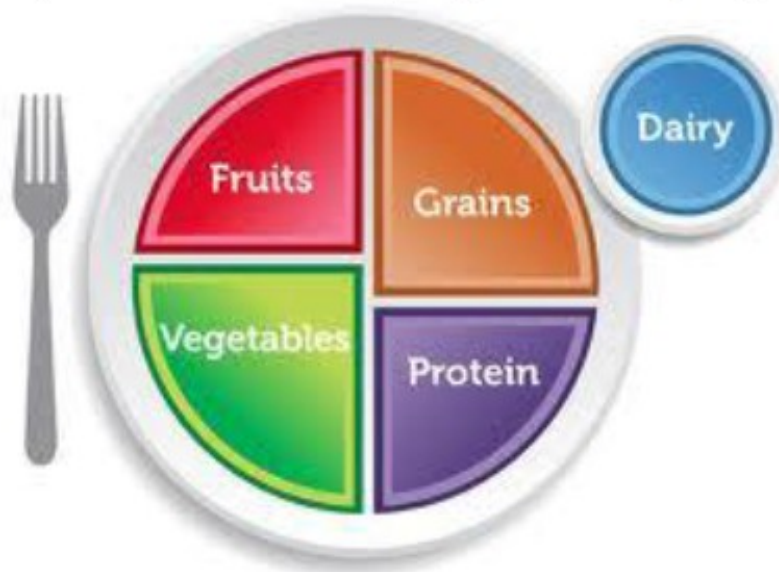
0 – 0 sugary drinks (juice, soda, sports drinks) and have more water and/or fat free/skim or 1% milk



“Right-Size” Portions

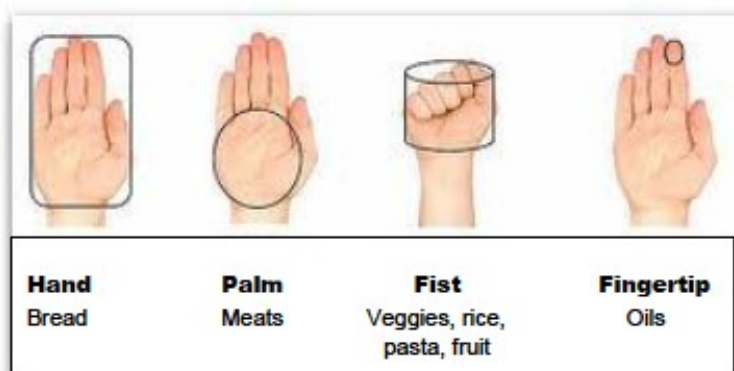
Portion Size Your Plate

- Use a plate no bigger than 8” or 9”
- Fill 1/2 the plate with a variety of colorful vegetables or vegetables & fruit
- Fill 1/4 the plate with a lean protein
- Fill 1/4 the plate with a grain or starchy food
(Remember to choose half your grains as whole grains)



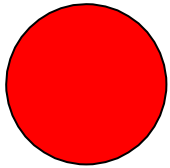
Quick & Easy

- When measuring equipment is not available you can estimate serving size
- Your child can use their hand to estimate “right-size” portions



Quick Reference for Low Glycemic Eating

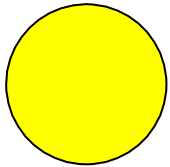
Foods low on the glycemic index (GI) are digested more slowly, helping kids feel fuller longer and promoting a healthier weight.



Red Foods: (High GI)-

Eat no more than 7 servings per week

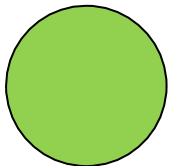
Examples: White flour bread, rice, crackers or any other cereal or grain that is not 100% whole grain; fatty meats; full fat dairy; fatty, sugary snacks; potato products



Yellow Foods:

Eat no more than 2 servings per day

Examples: White flour pasta; low fat sausage, turkey bacon; regular dairy; pizza; dried fruit



Green Foods: (Low GI)

Eat often

Examples: 100% whole grain bread, rice, cereals and pasta; lean meats and other proteins; fruits and veggies; lean dairy; nuts; low fat cheese; healthy oils.

For each meal, choose:

- At least 1 serving of “green” whole grains
- At least 1 serving of fruit and/or vegetable
- At least 1 serving of protein



Physical Activity

Tips to Make Exercise Fun!

- Make it social - Invite a friend, parent, or family member to exercise with you.
- Listen to some music.
 - Turn up the volume and listen to your favorite music while exercising.
 - Music can make the time go a lot *faster*!
 - But safety is first; be careful when using headphones outside.
- Do something new and exciting.
 - Do something that you have never tried.
 - Have you ever tried rollerblading, kickboxing, dance, gymnastics, jump roping, swimming, yoga, or karate?
- Make it challenging.
 - Set some goals and reward yourself for your exercise behavior.
 - Work hard to get that reward.
 - Exercise isn't always easy, work toward getting a "Sweaty Head".
- Add some variety in your regular exercise. Spice up your exercise by doing something different each time.
 - Try home exercise videos, doing jumping jacks in the middle of your daily walk, and doing different types of exercises every week. (Keep mixing up your routines)
- Do something you enjoy!
 - So you do not like to swim, then don't do it. *Find something else you like.*
 - Exercise should be fun! Make sure it is something that you enjoy.
 - If it is something that you like odds are you will do it.



How to Get 60 Minutes of Physical Activity in Each Day

If You Only Have:	Try Doing This:
5 minutes	<ul style="list-style-type: none"> ● Get the mail ● Take out the trash ● Jump rope/hula hoop
10 minutes	<ul style="list-style-type: none"> ● Take a walk ● Toss a football/Frisbee or baseball ● Help around the house <ul style="list-style-type: none"> ○ Bring in the groceries ○ Sweep ○ Do the dishes ● Practice your best dance moves
15 minutes	<ul style="list-style-type: none"> ● Walk the dog ● Do a quick strength routine ● Wash the car ● Practice your jump shot, fast pitch, goal scoring
20 minutes	<ul style="list-style-type: none"> ● Ride your bike or rollerblade (remember to wear your helmet/safety equipment!) ● Play outside with a friend or visit a neighbor ● Exercise during every TV commercial when you watch your favorite 1 hour show
30 minutes	<ul style="list-style-type: none"> ● Do strength training ● Go swimming ● Rake the leaves, shovel the snow ● Go to the park ● Practice your sport (basketball, baseball, football, soccer, etc.) ● Take a walk/walk the dog



Choosing the right equipment

Stability Balls

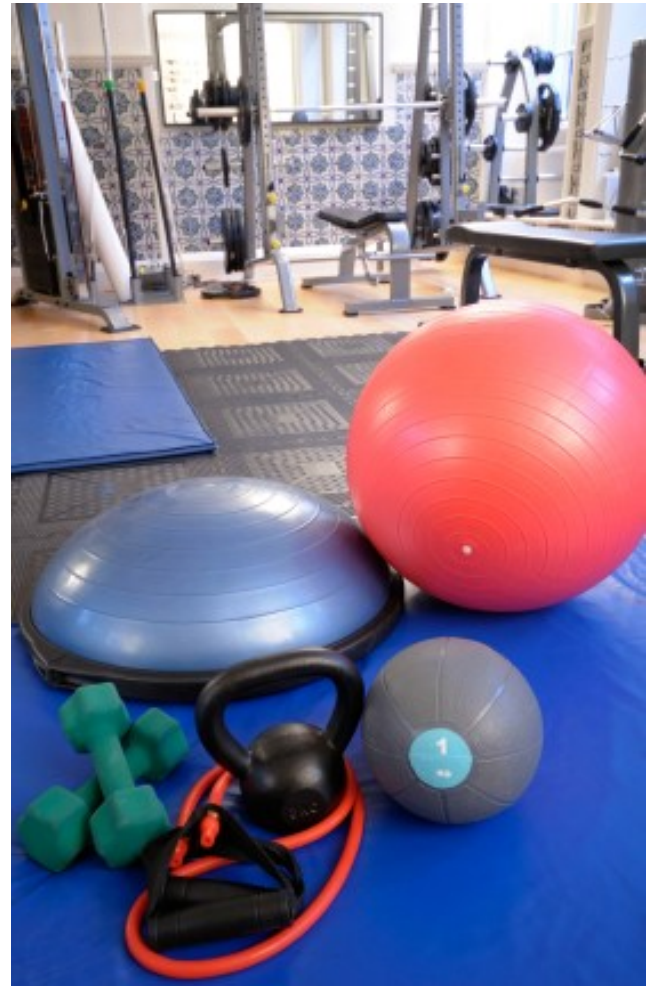
- When sitting on the ball, with feet hip-width apart and toes pointed forward, the knees should form a 90° angle.
- General recommendations based on height:
 - 4'11" or under – 45 cm ball
 - 5'0" to 5'7" – 55 cm ball
 - 5'8" to 6'2" – 65 cm ball
 - 6'3" to 6'9" – 75 cm ball

Resistance Bands

- Most resistance bands are color-coded according to resistance.
- Bands usually come in very light, light, medium, heavy, and very heavy.
- You should have at least 3 different bands, since different exercises and different muscle groups will require different levels of resistance.
- There are many different types of bands. Just start by buying a basic long tube with handles.

Dumbbells

- Start out with just several pairs of dumbbells.
- Choose weights that you can lift using proper form.
- The proper weight should tire the muscles out after 8-12 repetitions.
- For younger children, start with dumbbells around 3-5 lbs.
- Teenagers can start with dumbbells around 8-12 lbs. or higher, depending on strength.



Physical Activity Guidelines: (Children ages 5-11)

Minimum

- Do at least 60 minutes of age appropriate physical activity every day, or most days of the week.

Ideal

- Do more than 60 minutes, and up to several hours per day, or age and developmentally appropriate activity.
- Some periods lasting 10-15 min. or more should include Moderate to Vigorous activity with brief periods of rest and recovery.

Physical Activity Guidelines: (Adolescents ages 12-19)

- Daily physical activity as part of play, games, sport, work, transportation, recreation, physical education, or planned exercise, with the family, in school, or through the community for 30-60 minutes/ day.
- Part of this activity should be vigorous in nature at least 3 times per week for at least 20 minutes in duration.

Extended periods of inactivity are inappropriate for children and adolescents!

If, at any time, you have concerns, comments, or questions about your child's medical condition or the Center for Better Health and Nutrition, please call our staff.

It is our hope and goal to help your child achieve and maintain an optimal weight and good health through proper nutrition and physical activity. We value your efforts as you support and encourage your child every step of the way.

Eat Well, Be Active!

Center for Better Health and Nutrition 513-636-4305

