Non-Alcoholic Steatohepatitis and Obesity

Diana Moya, MD

Obesity and Non-alcoholic steatohepatitis (NASH) are fascinating entities that have become more frequent in our practice. During the past two decades, there has been a dramatic increase in obesity in children and adolescents in the United States. Data from the CDC estimates that childhood obesity has more than doubled in children and tripled in adolescents in the past 30 years, and approximates 17% (12.5 million). Parental obesity is one of the main risk factors for the development of pediatric obesity. Obese adolescents have a 50 to 77% risk of becoming adults with an increase to approximately 80% given 1 obese parent.

Obesity during childhood carries dev- astating consequences including hyper- tension, dyslipidemia, non-alcoholic fatty liver disease (NAFLD), insulin re- sistance, diabetes mellitus and metabolic syndrome. Children are at greater risk for bone and joint problems, sleep apnea, precocious puberty, polycystic ovary syndrome and social and psychological problems such as poor self-esteem and bullying.

Many families, surprisingly enough, remain unaware of the health risks of overweight or obese. This unawareness limits interventions in a timely fashion. As physicians and medical care providers, we must warn families for any concerns about overweight and obesity at any age. Body fat is measured by Body Mass Index (BMI) based on height and weight. BMI curves are calculated from the 5th to the 95th percentile and can be used to determine if a child is underweight, normal weight, overweight or obese if the BMI exceeds the 85th or 95th percentiles respectively.

Obesity can be multifactorial involving genetic and environmental factors. In overweight and obese children, excess weight or obese if the BMI exceeds the 85th or 95th percentiles, other find- ings may indicate organic etiologies of obesity. Short stature may be associated with NASH, and therefore not recommended for this population.

Some complications associated with NASH may include cirrhosis and its complications: variceal bleeding, ascites, encephalopathy, and liver failure. The prognosis in NASH depends on the histologic stage at presentation. The rate of progression worsens if more than one liver disease is present (alcoholic liver disease or chronic viral hepatitis).

At GI for Kids, we offer a weight management program, Beam Fit 4 Kids, for overweight and obese children and teenagers. Beam Fit comprises group and individual counseling sessions with 2 Registered Dietitians to discuss healthy dietary habits, an Exercise Specialist to improve physical activity habits, and a Psychologist assessing behavior modifi- cation to encourage a more healthy lifestyle journey. Our Gastroenterologists and Nurse Practitioners also participate in this program.

Non-Alcoholic Fatty Liver Disease and Nutritional Recommendations

Ashley Treadway, MS, RD, LDN

Non-alcoholic fatty liver disease (NAFLD) is characterized by the accumulation of triglycerides in the hepatocytes of patients who do not abuse alcohol. NAFLD has emerged as the leading cause of chronic liver disease in children and adolescents in the United States; it is thought to be due to the high prevalence rates of overweight and obesity. The cause of NAFLD is not clear. Certain diseases and conditions tend to increase the risk of developing FLD such as family history of NAFLD, high cholesterol, high triglycerides, obesity, metabolic syndrome, and type 2 diabetes. Approximately 90% of children with NAFLD are obese, defined as BMI greater than the 95th percentile for age and gender.

NAFLD is often silent, producing no symptoms, espe- cially in the beginning. If the disease advances over time it can cause vague problems such as fatigue, weight loss, or loss of appetite, weakness, nausea, and confusion. At this time, there is no evidence-based approved drug therapy or any alternative medicine treatments proven to cure NAFLD. Although the process of NAFLD can be stopped or reversed, if lifestyle changes are not imple- mented cirrhosis may develop. A medical team should work to treat the risk factors and underlying conditions.

Lifestyle modification through diet and exercise must be the first line therapy of any treatment plan for patients with NAFLD.

Weight Loss

10% reduction of initial body weight over six months

Maintenance of weight loss

Nutritional Guidelines for NAFLD

<table>
<thead>
<tr>
<th>Weight Loss</th>
<th>Total Fat</th>
<th>Monounsaturated Fatty Acids</th>
<th>Polyunsaturated Fatty Acids</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>20%</td>
<td>15%</td>
<td>10%</td>
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</table>

<table>
<thead>
<tr>
<th>Snacks</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Edamame</td>
<td>Pita Chips with salsa</td>
<td>Low fat cottage cheese and fruit</td>
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</tr>
<tr>
<td>Veggies with fat free, hummus or guacamole</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Trail Mix with dried fruit, nuts and seeds</td>
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<td></td>
</tr>
<tr>
<td>Applesauce</td>
<td>Fruit with Nut Spread</td>
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</table>

Fruit with Nut Spread

Healthy Food Options

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch/Dinner</th>
<th>Snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole grain toast with peanut butter</td>
<td>Whole Grain pasta, veggies and chicken</td>
<td>Edamame</td>
</tr>
<tr>
<td>Egg whites and turkey Bacon</td>
<td>Whole wheat tortilla with veggies and hummus</td>
<td>Pita Chips with salsa</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>Lean turkey breast on whole grain bread</td>
<td>Low fat cottage cheese and fruit</td>
</tr>
<tr>
<td>Quinoa and fruit</td>
<td>Salad loaded with veggies, lean protein and low fat dressing</td>
<td>Veggies with fat free, hummus or guacamole</td>
</tr>
<tr>
<td>Low fat yogurt</td>
<td>Broth or tomato based low fat soup</td>
<td>Trail Mix with dried fruit, nuts and seeds</td>
</tr>
<tr>
<td>High fiber cereal with low fat Milk</td>
<td></td>
<td>Applesauce</td>
</tr>
</tbody>
</table>

Diana Moya, MD

Meet our New Provider

Emily Jessie, BSN, MSN, FNP-BC

Master of Science in Nursing, December 2013
Lincoln Memorial University, Harrogate, TN
Bachelor of Science in Nursing, May 2012
Lincoln Memorial University, Harrogate, TN
Associate of Science in Nursing, May 2011
Lincoln Memorial University, Harrogate, TN
Board Certification, January 2014
American Nurses Credentialing Center- Family Nurse Practitioner
PALS/BLS, April 2013
Kodak/Advance Life Support, Basic Life Support
Honor/Memberships
Sigma Theta Tau International Honor Society of Nursing

Today is the most promising day to begin eating healthy.

Body Weight Change over Six Months

Nutritional Guidelines for NAFLD
Our behavior health clinicians can help your pediatric patients with:

- GI-related disorders including recurrent abdominal pain, food allergies, celiac disease, irritable bowel syndrome & inflammatory bowel disease, constipation & encopresis
- Other disorders including adjustment to illness, family dysfunction, sleep difficulties, conduct disorder, depression, generalized anxiety, panic attacks, eating disorders, non-compliance to medical regimens, and more...

Visit our website for more details: www.GIforKids.com

Call for an appointment today!
865.546.3998

BEE FIT 4 KIDS

A one-on-one pediatric weight management program administered by a multi-disciplinary team.

The format allows Registered Dietitians to identify nutrition and fitness trouble areas immediately. This helps the staff make appropriate changes so weight management success is maximized.

Visit our website, www.BeeFit4Kids.com, for more details, or call 865.546.3998.

Now accepting insurance!

I’m sure we are all anxious for spring and warm weather. The very cold winter this year has no doubt kept many of us indoors, eating, and gaining a few pounds. While most of us may lose these few extra pounds with increased activities Spring and warmer weather bring, many adults, adolescents, and children in this country will be at risk for more weight than is healthy. Many families are unaware of their children being overweight or obese and that they may face devastating health consequences.

Obesity and non-alcoholic steatohepatitis (NASH) is becoming a more frequent condition seen in our clinic. Many children with NASH are asymptomatic. A few may complain about fatigue and upper abdominal discomfort. The only finding on a physical exam may be a BMI above what is expected for age and gender; other findings may indicate organic etiologies of obesity.

No specific treatment is available for NASH. However, since most patients with NASH are obese, lifestyle modification is something we can provide. Our medical staff is qualified to identify children who are obese, or predisposed to obesity, and alert parents of the long term health risks. We provide counseling for dietary changes; improve physical activities, and making the necessary behavior modifications to successfully lose weight. We also provide a one-on-one weight management program called Bee Fit 4 Kids.

For more information about all of our services, please visit our website at www.giforkids.com.

5th Annual Gluten Free Vendor Fair and Expo
The Knoxville Expo Center (5441 Clinton Hwy)
Saturday, May 31, 2014 • 10 a.m. – 4 p.m.

Admission includes: free gift bag to first 1,000
Speakers and cooking demonstrations
Free samples
Products for purchase

Adults - $5.00
Children 2 to 13 - $3
Children 2 & under FREE