Top Ten Things To Know
Progress and Challenges in Metabolic Syndrome in Children and Adolescents

1. Metabolic syndrome (MetS) in adults is defined as the clustering of interrelated cardiovascular (CV) risk factors including obesity, insulin resistance, inflammation and others. In children and adolescents, there is no universally accepted definition of the MetS.

2. Several definitions for MetS in children and youth have been proposed, however, and the criteria used in pediatric studies have been adapted from adult standards using gender and age-dependent normal values.

3. The International Diabetes Federation (IDF) recommends the following criteria for defining MeS. According to these criteria the prevalence of MetS in children varies widely.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>6-10 years old</td>
<td>waist circumference =/&gt; 90th %tile of waist circumference, followed by further measurements as indicated by family history</td>
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<tr>
<td>10-16 years old</td>
<td>waist circumference =/&gt; 90th %tile, followed by the adult criteria for triglycerides, HDL- cholesterol, blood pressure and glucose</td>
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<td>youth 16 years and older</td>
<td>existing IDF criteria for adults</td>
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4. Given the increase in prevalence of childhood obesity, it is thought that the risk of atherosclerotic CV and type 2 diabetes mellitus (T2DM) is heightened in children today.

5. When T2DM begins in childhood, the risk for accelerated atherosclerosis is increased beyond that seen in those who develop this diagnosis as adults.

6. It is accepted that the MetS and insulin resistance are closely related and that insulin resistance may be a variable for expression of the MetS in children and youth.

7. Obesity, especially abdominal obesity, and insulin resistance are directly related both clinically and epidemiologically to the development of the MetS and CV risk in children and youth.

8. In addition to obesity, other metabolic and pathologic factors (inflammatory factors, adipocytokines, cortisol, oxidative stress, vascular factors, heredity, and lifestyle factors) are operative in this process.

9. There is a need to study the tracking and interactions of pediatric cardiometabolic risk factors in longitudinal studies from childhood to adulthood in order to determine the specific components that should be included in a future definition of MetS in youth.

10. Due to limited data that track individuals from childhood to adulthood, little is known about how well pediatric MetS predicts adult disease.

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