Infantile obesity remains an ongoing serious international health concern threatening adult health and longevity. Screening for comorbidities of obesity should be applied in a hierarchical, logical manner for early identification before more serious complications result.

**INTRODUCTION**

- Pediatric obesity remains an ongoing serious international health concern threatening adult health and longevity.
- Screening for comorbidities of obesity should be applied in a hierarchical, logical manner for early identification before more serious complications result.

**AIM**

Compare HOMA-IR between obese and normal weight children.

**METHOD**

- 292 children (156 females), BMI (≥SDS), Tanner stage 1-2: 163/129, divided in four groups
  - Group 1: BMI≤2SDS,
  - Group 2: 2SDS≤BMI≤2.25SD,
  - Group 3: 2.25SD≤BMI<2.5SD,
  - Group 4: BMI≥2.5SD
- Mean age was 9.5 yrs (SD, 3.07)
- BMI: 2.28 (SD, 0.59)
- HOMA-IR: 3.88 (SD, 3.6)
- Fasting glucose: 87.3 (SD, 8.3) mg/dl
- Fasting insulin: 17.9 (SD, 16) mIU/l
- HOMA-IR was significantly higher in group 4 only as opposed to group 1 (p: 0.02) but not group 2 or 3.
- Prepubertal boys in groups 2, 3, 4 and overall had higher HOMA-IR as opposed to girls (4.1/3.5, boys/girls), but in puberty this finding was reversed (3.6/4.4 boys/girls).
- However, there was no statistically significant difference among groups in relation to sex or puberty.

**RESULTS**

**CONCLUSIONS**

Obese children with BMI ≥2.5SDS, but not BMI-2.5SDS, present significantly higher HOMA-IR as opposed to normal weight children, irrespectively of sex or Tanner stage.

**REFERENCES**

1. Morales Camacho W. et al., Childhood obesity: Aetiology, comorbidities, and treatment Diabetes/Metabolism Research and Reviews 2019
2. Junoala et al., Childhood Adiposity, Adult Adiposity, and Cardiovascular Risk Factors NEJM 2011

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**CONTACT INFORMATION**

Sofia LEKA-EMIRI, MD, MSc, PhD, DIU
Division of Endocrinology-Growth and Development, “P&A KYRIAKOU” Children’s Hospital, Athens, Greece
sofialeighemiris@gmail.com

**Table 1. Clinical and laboratory characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (n=55)</th>
<th>Group 2 (n=78)</th>
<th>Group 3 (n=70)</th>
<th>Group 4 (n=89)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>10.9 (2.4)</td>
<td>9.7 (2.2)</td>
<td>9.5 (2.8)</td>
<td>7.6 (3.6)</td>
<td>*</td>
</tr>
<tr>
<td>Sex (boys/girls)</td>
<td>20/35</td>
<td>37/41</td>
<td>32/38</td>
<td>47/42</td>
<td>NS</td>
</tr>
<tr>
<td>Tanner stage I/II-IV</td>
<td>20/35</td>
<td>47/31</td>
<td>36/34</td>
<td>60/29</td>
<td>*</td>
</tr>
<tr>
<td>BMI z-score</td>
<td>1.7 (0.27)</td>
<td>2.1 (0.06)</td>
<td>2.4 (0.08)</td>
<td>2.9 (0.65)</td>
<td>*</td>
</tr>
<tr>
<td>HOMA IR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3.4</td>
<td>3.1 (1.0)</td>
<td>3.6 (3.0)</td>
<td>3.9 (2.7)</td>
<td>4.6 (5.1)</td>
<td>*</td>
</tr>
<tr>
<td>≥ 3.4</td>
<td>69%</td>
<td>62%</td>
<td>52%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>Fasting Glucose (mg/dl)</td>
<td>89 (8.6)</td>
<td>87 (8.3)</td>
<td>87 (7.8)</td>
<td>86 (8.2)</td>
<td>*</td>
</tr>
<tr>
<td>Fasting Insulin (mIU/l)</td>
<td>14 (8)</td>
<td>17 (14)</td>
<td>18 (11)</td>
<td>21 (23)</td>
<td>*</td>
</tr>
</tbody>
</table>

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**Topic:** Obesity and lipids

**1st author:** Sofia LEKA-EMIRI