Subcutaneous Adipose Tissue Topography (SAT-Top) Development in Infants, Toddlers and Children

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Optical device

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Subcutaneous Adipose Tissue Topography SAT-Top

1-front chest
2-biceps
3-upper abdomen
4-lower abdomen
5-front thigh
6-inner thigh
7-lateral chest
8-hip
9-lateral thigh
10-neck
11-triceps
12-upper back
13-lower back
14-rear thigh
15-calf
Measurements of SAT-Top Development:
Four body regions

\[
\begin{align*}
\text{SAT-arms} &= \text{triceps} + \text{biceps} \\
\text{SAT-trunk} &= \text{neck} + \text{upper back} + \text{front chest} + \text{lateral chest} \\
\text{SAT-abdomen} &= \text{upper abdomen} + \text{lower abdomen} + \text{lower back} + \text{hip} \\
\text{SAT-legs} &= \text{front thigh} + \text{lateral thigh} + \text{rear thigh} + \text{inner thigh} + \text{calf}
\end{align*}
\]
### SAT-Top development in healthy children 0-7 years

<table>
<thead>
<tr>
<th></th>
<th>Infant</th>
<th>Toddler</th>
<th>Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>36</td>
<td>54</td>
<td>38</td>
<td>128</td>
</tr>
<tr>
<td>Boys</td>
<td>44</td>
<td>66</td>
<td>37</td>
<td>147</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>120</td>
<td>75</td>
<td>275</td>
</tr>
</tbody>
</table>
Results are presented on three levels:

- Total-SAT
- 4 Body regions
- 15 Body sites
Girls -39.8% (p<0.001)
Boys -43.8% (p<0.001)
Decrease of subcutaneous adipose tissue in boys

<table>
<thead>
<tr>
<th>Body regions</th>
<th>Medians of SAT layer thickness in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT-arms</td>
<td>n.s.</td>
</tr>
<tr>
<td>SAT-trunk</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>SAT-abdomen</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>SAT-legs</td>
<td>p&lt;0.001</td>
</tr>
</tbody>
</table>

- infant
- toddler
- child
### Sex differences:

<table>
<thead>
<tr>
<th></th>
<th>Infant</th>
<th>Toddler</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT-arms</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>SAT-trunk</td>
<td>p=0.033</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>SAT-abdomen</td>
<td>n.s.</td>
<td>n.s.</td>
<td>p=0.015</td>
</tr>
<tr>
<td>SAT-legs</td>
<td>n.s.</td>
<td>n.s.</td>
<td>p=0.010</td>
</tr>
<tr>
<td>Total-SAT</td>
<td>p=0.037</td>
<td>n.s.</td>
<td>p=0.008</td>
</tr>
</tbody>
</table>
Thank you for your attention!

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