FRENCH GROWTH REFERENCE CHARTS SHOULD BE UPDATED

Athanasia Stoupa1*, Alexandre Goischke1,2*, Camille Garcin3, Caroline Elie4, Magali Viau5, Anne Théry6, Geneviève Richard7, Michel Polak1,2,8


*AS et AG contributed equally to this work and should be considered as co-first authors.

Background

- Growth charts constitute an important tool for monitoring a child’s growth and development, and thus detect growth anomalies
- Growth assessment allows early referral and optimal management of treatable disorders
- In France, questions are raised about the use of growth reference charts of Sempé derived at the end of 70s and based on children born on 50s in Paris area.

Subjects and Methods

2736 schoolchildren in 3rd grade during school period 2008-2009 in Paris were included after stratification of 75 among 345 primary schools

The majority of children had at least 2 medical school visits:
- 1st visit: entry at the primary school at 6 years,
- 2nd visit: 3rd grade, at age of 8-9 years

Prospective analysis of:
- birth data (weight, length, head circumference, gestational age), data on any presence of chronic disease and life conditions (adoption) for every child
- growth data: weight, height, BMI during medical school visits

Objectives

1) Study the prevalence of growth disorders and overweight/obesity in schoolchildren attending 3rd grade in primary schools during 2008-2009
2) Determine if school medical visits are an effective screening tool for growth anomalies and obesity

Results

Table 1: Height of children expressed in SD for different age groups during the follow-up

<table>
<thead>
<tr>
<th>Age Group</th>
<th>[5-6]</th>
<th>[6-7]</th>
<th>[7-8]</th>
<th>[8-9]</th>
<th>[9-10]</th>
<th>[10-11]</th>
<th>[11-12]</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>-2SD &lt;= height &lt;= 2SD</td>
<td>1469</td>
<td>83.3</td>
<td>498</td>
<td>83.4</td>
<td>166</td>
<td>83</td>
<td>1273</td>
</tr>
<tr>
<td>height &lt; -2 SD</td>
<td>6</td>
<td>0.3</td>
<td>2</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>height &gt; +2 SD</td>
<td>289</td>
<td>16.4</td>
<td>97</td>
<td>16.2</td>
<td>34</td>
<td>17</td>
<td>262</td>
</tr>
<tr>
<td>height &lt; -1.5 SD</td>
<td>21</td>
<td>1.2</td>
<td>10</td>
<td>1.7</td>
<td>1</td>
<td>0.5</td>
<td>22</td>
</tr>
<tr>
<td>height &lt; -1 SD</td>
<td>74</td>
<td>4.2</td>
<td>25</td>
<td>4.2</td>
<td>5</td>
<td>2.5</td>
<td>73</td>
</tr>
</tbody>
</table>

Figures 1-3: Height, Weight and Body Mass Index (BMI) of schoolchildren expressed in SD and observed for different age groups

Height (+0.9 ± 1.2DS), weight (+1 ± 1.7DS) and BMI (+0.4 ± 1.4DS) were higher compared to French reference growth charts

Conclusions

- School medical visits are a useful screening tool for growth disorders and overweight/obesity in schoolchildren.
- French reference charts are no longer appropriate to assess growth during childhood and need to be updated
- The close collaboration between school doctors and paediatricians is indispensable in order to optimize the number of children screened and referred to specialists

The prevalence of overweight and obesity (BMI>p97) was 20% for girls and 15.3% for boys aged of 8-9 years.

This prevalence remained stable during last years in France.

Can school health check-ups serve as screening tool for growth anomalies and obesity in children?

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