study. The mean levels of maternal 25(OH)D was 23.2 ± 7.7 ng/mL with a high (up to 80%) prevalence of insufficient vitamin D status (< 30 ng/mL). A significant correlation was seen between maternal and cord blood 25 (OH)D levels (P < 0.001) and a persistent lower 25(OH)D level was found in children born to mothers with deficient 25(OH)D levels. Deficient maternal 25 (OH)D levels (< 20 ng/mL) appeared to have a higher prevalence of allergens sensitization before age 2. Higher maternal 25 (OH)D levels were significantly associated with lower risk of asthma (P = 0.006) and asthma (P = 0.032) at age 4.

Conclusions: Low maternal 25(OH)D levels appear not only to be associated with an increase in the prevalence of allergic sensitization but also the risk of eczema and asthma in early childhood.

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Educational and supporting program for pediatric atopic dermatitis improves parental treatment compliance and has positive impact on disease control
Olariu, SV; Păcură, I; Bumbacea, RS
Institute, Bucharest, Romania; "Carol Davila" University of Medicine and Pharmacy, Allergology, Bucharest, Romania

Background: Atopic dermatitis is a chronic inflammatory skin disease that is characterized by a chronic course of exacerbations and remissions. Parental understanding of the disease management is important for the treatment of atopic dermatitis in pediatric patients. Lack of information, inadequate treatment compliance, parental alternative health belief and the "corticosteroid phobia" in pediatric atopic dermatitis lead to poor control and negative outcomes. Therefore, providing an educational program for the management of pediatric atopic dermatitis can be of benefit for both the patients and their parents.

Objective: To determine the usefulness of our educational and supportive program, to understand and validate parental concerns about topical treatment safety and to implement methods for managing parental adherence to treatment, emphasizing the role of emollients.

Method: Twenty-five pediatric patients (ages 2 to 8 years old) and their parents were included in our pilot-study. Fifteen parents received informative sessions and supportive psychotherapy, while the remaining ten were the control group. The program consists of three interdisciplinary group sessions of 3 h each, covering medical and psychological issues. The parents were asked to complete a 25-item standardized questionnaire designed to assess parents' knowledge about atopic dermatitis, adherence to treatment, level of feeling of control, sleep disturbance, before the sessions and 1 month after monitored treatment.

Results: For the group receiving educational and supportive sessions, the mean scores about atopic dermatitis knowledge and the feeling of control were significantly improved (P < 0.05). Also our educational program showed enhanced compliance to treatment by increased use of emollients (by 70 g/week) and reduced use of unconventional therapies (to none). The parents' night sleep has improved with 0.4 h/night.

Conclusion: This educational and supportive program proved to be an useful tool to improve clinical outcomes in pediatric atopic dermatitis and parental adherence to treatment by offering medical information and psychological support to parents.

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Predictive equations of pulmonary function for healthy children in Portugal
Martins, C1; M Pinto,2; Silva, D3; Moreira, P3; Padrão, P3; Oliveira Fernandes, E4; Madureira, J5; Delgado, L4,5,7; Severo, M4; Moreira, A1,2

Background: There is a scarcity of data on lung function reference values for healthy children in Portugal. This study aims to develop predictive equations for spirometric reference values for children aged 8 to 12 years in North Portugal.

Method: A random sample of 352 children from 10 primary schools in Oporto were screened by a health questionnaire and physical examination and those found “normal” underwent spirometry according to the standardized procedure recommended by the ATS/ERS task force in 2005. Exclusion criteria were inability to correctly perform spirometry, premature birth (< 37 weeks), reported having wheeze in last 12 months or any history of asthma. Each subject’s weight and height were measured, and lung function was performed using a MIR Spirobank, with WinSpiroPRO software. Spirometric parameters recorded were forced vital capacity (FVC), forced expiratory volume in 1 s (FEV₁), forced expiratory flow between 25 and 75% of exhalation (FEF2575) and peak expiratory flow (PEF). All computer derived flow-volume curves were reviewed for technical acceptability and the best flow-volume curve was selected to derive the reference equations using multiple regression analysis.

Results: A total of 111 subjects, aged 8.09 (0.75) years (mean (SD)), 51 (45.9%) girls, were included in the study. Both in boys and girls, FVC, FEV₁ and PEF showed moderate to strong correlations with height (CC = 0.736, P < 0.001; CC = 0.699, P < 0.001; CC = 0.439, P < 0.001 respectively), weight (CC = 0.393, P < 0.001; CC = 0.615, P < 0.001; CC = 0.412, P < 0.001) and age (CC = 0.302, P < 0.001; CC = 0.403, P < 0.001; CC = 0.276, P = 0.003); while FEF2575 only with height (CC = 0.309, P = 0.001) and height (CC = 0.420, P < 0.001). Using Student’s T test and confirmed by linear regression, all spirometric parameters were independent of gender. For FVC, FEV₁ and PEF the predictive variables are height and weight. For FEF2575 only weight was statistically significant, but the authors opt to maintain the variable height in the model. Results are summarized in table 1.

Table 1: Predictive equations of pulmonary function

<table>
<thead>
<tr>
<th>Spirometric Function</th>
<th>Index</th>
<th>β (C.I.)</th>
<th>Height (C.I.)</th>
<th>Weight (C.I.)</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC</td>
<td>-1.929 (1.079;1.0067)</td>
<td>0.028 (0.021;0.036)</td>
<td>0.006 (0.000;0.013)</td>
<td>0.542</td>
<td></td>
</tr>
<tr>
<td>FEV₁</td>
<td>-2.373 (1.002;1.0529)</td>
<td>0.021 (0.015;0.027)</td>
<td>0.008 (0.002;0.013)</td>
<td>0.511</td>
<td></td>
</tr>
<tr>
<td>FEF2575</td>
<td>-1.368 (1.917;2.311)</td>
<td>0.010 (0.006;0.028)</td>
<td>0.018 (0.007;0.030)</td>
<td>0.171</td>
<td></td>
</tr>
<tr>
<td>PEF</td>
<td>-0.490 (1.884;1.858)</td>
<td>0.029 (2.962;0.004)</td>
<td>0.017 (-0.002;0.035)</td>
<td>0.229</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: In conclusion, we present newly developed predictive equations regression for spirometry variables that may be applied to calculate lung function in Portuguese children aged 8 to 12 years.