

## **Clinical Outcome and Social Parameters Impact on Sport Activity in Children With CF: A Prospective Survey**

A. Vital-Foucher\*, I. Zaccaria<sup>+</sup>, D. Marteil\*, A. Gaudalet<sup>+</sup>, M. Gérardin, B. Delaisi, MN. Lebras and A. Munck

\* Physiotherapy department, <sup>+</sup> INSERM CIES Unit of Clinical Epidemiology Cystic Fibrosis Center  
University Hospital Robert Debré  
Paris, France

We report on an interesting prospective survey in CF children aimed at evaluating regular physical and sports activities in daily life in relation to social parameters and CF disease severity:

A self administered questionnaire was sent to the 130 families with a CF child over 3 years of age who are regularly seen in our CF center. Questions concerned school (absenteeism, scholastic results, sports activities), life-style (city size, family sports habits, sports activities outside school) and we added CF nutritional assessment (age and sex specific weight and height z-scores) and pulmonary function tests (forced expiratory volume (FEV1), forced vital capacity (FVC)). We had a 95% completion rate and found the children (66 males, 59 females) had a mean age of 11 years. Respectively 15, 34 and 45% were at nursery, elementary, junior/high school and 6% were older. Overall CF disease severity was mild with mean FEV1: 85%, FVC: 91%, weight z-score:  $0.00 \pm 1.11$ , height z-score:  $0.09 \pm 1.05$ .

Analysis of school data demonstrated: low rate of absenteeism (never: 29%, seldom: 57%), scholastic results were good in 53% but poor in 13%, 58% walked to school (mean daily time: 10 mn) ; 62% participated in all sport activities, 4% in none and 34% electively avoided one activity (swimming).

Analysis of life-style data demonstrated: 75% large city/suburbs and 15% rural residencies; 19% single parent family; 38% home maker; 34% sedentary and 21% active life-style; 77% had sports activities outside school, in a club for 70%, more than once a week for 33%, and 16% were practicing at a competition level. Leisure was the main motivation (77%).



We found no correlation between sports activities in daily life and age, scholastic results, city size, home marker, FEV1, but a strong correlation with family active life-style ( $p < 0.003$ ) and weight z-score ( $p < 0.06$ ).



L to R: A Gaudelet, Michèle Gérardin, Isabelle Zaccaria, Bertrand Delaisi, Antonia Vital-Foucher, and Anne Munck

Regular physical and sports activities have become an essential part of physiotherapy management in CF. They enable patients to maintain muscular strength and mobility, slow the respiratory decline<sup>1</sup>, improve the sense of well-being with a positive psychological impact, prevent the decrease in bone mass density<sup>2</sup>. However in the literature, CF patients are reported as being engaged in less vigorous sports activities than healthy controls with a decline in participation for the older CF teenagers<sup>3-4</sup>.

Our CF center's physiotherapists emphasize the importance of sports activities to children and their parents at each yearly assessment and this may explain our good results.

In conclusion, this report demonstrates that only 4% of CF children avoided sports activities at school; up to 77% had sports activities in their daily life and 16% reached a competition level. Age, lung function, scholastic results, city size, single parent family were parameters which didn't correlate with sports activities but an active family life-style strongly correlated.

We need to encourage families and children in sports activities at a younger age that might ensure a long term practice in adulthood with expected medical benefits.

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2. Boot AM et al. Bone mineral density in children and adolescents:relation to puberty, calcium intake and physical activity. *J Clin Endocrinol Metab* 1997; 82 : 57-62.

3. Britto MT et al. Comparison of physical activity in adolescents with cystic fibrosis versus age-matched controls. *Pediatr Pulmonol* 2000; 30 : 86-91.

4. Youth and Sports Ministry data. INSEE n°1008 March, 2005 [www.insee.fr](http://www.insee.fr)