The following full text is a publisher's version.

For additional information about this publication click this link.
http://hdl.handle.net/2066/20974

Please be advised that this information was generated on 2019-04-28 and may be subject to change.
21 months spirometry was carried out at the general practice with a hand-and 24 months spirometry (using an integrating flowmeter Microspiro 298, period of two years. Every three months FEV₁ was measured. At t=0, 12 patients with clinical indications of asthma or COPD were monitored for a study was to investigate if three-monthly instead of annual FEV₁ measurement (SD) of the annual FEV₁ decline is estimated at 100ml. The aim of our In most long-term epidemiologic studies in COPD the mean standard deviation of the residual standard deviations of the cross-sectional model were approximately 2.5 times larger than those from the longitudinal model. The adequacy of the longitudinal and the cross-sectional model to follow the pubertal growth spurt was studied from the data of a small selection of about 60 boys of whom the peak growth ages of FVC and/or FEV₁ could be estimated. The residuals from the power model at fixed time intervals from the peak growth ages were a clear trend in that ventilatory function was overestimated by about 10% during the early growth spurt and underestimated by 5% at the end of the spurt. The residuals of the autoregressive model did not show a clear trend; deviations from zero were in the order of 2 to 3% on average. Although the theory behind autoregressive models is complicated, especially when these models are applied to mixed longitudinal data (as in this study), and several issues still need to be resolved, the results indicate that these models offer a substantial improvement in modelling and hence predicting the complex growth pattern of ventilatory function during adolescence.

The accurate prediction of ventilatory function development of an individual during adolescence is hampered by the large inter-individual variation in pubertal growth patterns, and the phase difference between growth of ventilatory function and standing height. Neither is accounted for in the commonly used cross-sectional reference equations which makes these equations less efficient for monitoring growth in individual. We studied if adolescent development of FVC and FEV₁ could be more adequately modelled using longitudinal data and methods, by fitting an autoregressive model. Nineteen FVC and FEV₁ were predicted from the previous FVC or FEV₁ respectively, age and height, and the reproducibility of the shortened protocol was compared to a power model that had height as the only predictor. We compared this model to a power model that had height as the only predictor and that was fitted to a cross-sectional selection from the longitudinal data. The data were obtained in a longitudinal survey of 779 Dutch adolescents, aged 13.5 to 19 yr. Measurements were made between 1978 and 1979 and retested approximately 0.5 yr. During 279 boys and 58 girls who had never had respiratory symptoms and who had never smoked were selected for analysis. The residual standard deviations of the cross-sectional model were approximately 2.5 times larger than those from the longitudinal model. The adequacy of the longitudinal and the cross-sectional model to follow the pubertal growth spurt was studied from the data of a small selection of about 60 boys of whom the peak growth ages of FVC and/or FEV₁ could be estimated. The residuals from the power model at fixed time intervals from the peak growth ages were a clear trend in that ventilatory function was overestimated by about 10% during the early growth spurt and underestimated by 5% at the end of the spurt. The residuals of the autoregressive model did not show a clear trend; deviations from zero were in the order of 2 to 3% on average. Although the theory behind autoregressive models is complicated, especially when these models are applied to mixed longitudinal data (as in this study), and several issues still need to be resolved, the results indicate that these models offer a substantial improvement in modelling and hence predicting the complex growth pattern of ventilatory function during adolescence.

The final version was acceptable and easy to understand by Spanish patients. Cronbach's alpha reliability coefficient was 0.94 for the overall scale (0.72 for Symptoms, 0.89 for Activity, and 0.89 for Impacts). Correlation coefficients between the overall score and dyspnea and %FEV₁ were 0.59 and -0.45, respectively. Dyspnea was less predictive than %FEV₁ (r=0.57 and r=0.56, respectively; P<0.001), and correlation with the Nottingham Health Profile was highest for Activity (r=0.53; P<0.001). These correlations were higher than those observed among the clinical variables and the Nottingham Health Profile, a generic measure of breathlessness and quality of life. Results of the study suggest that the Spanish version of the SGRQ is conceptually equivalent to the original, and is similarly reliable and valid. It may thus be used in Spanish and international studies in respiratory patients.