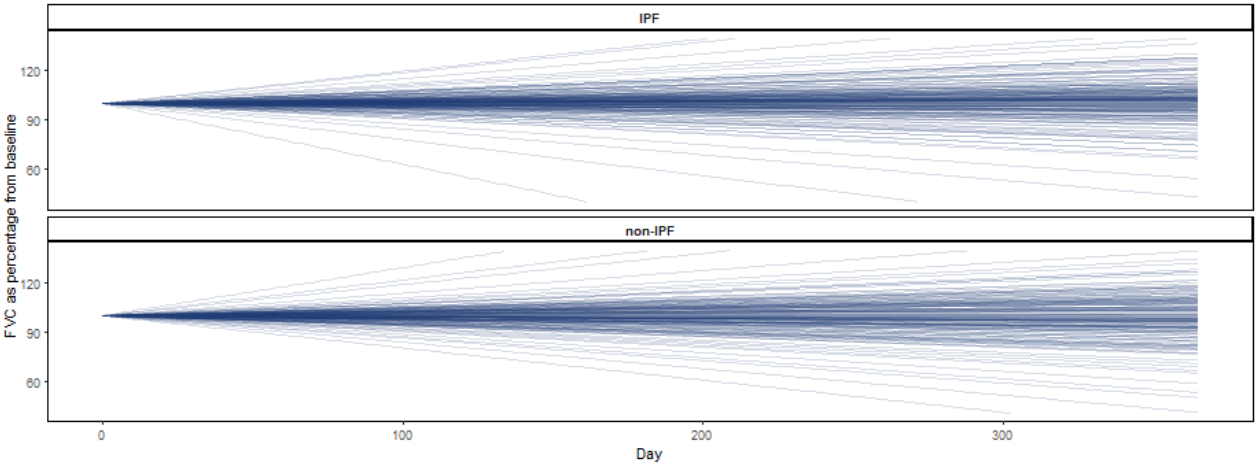
ERS CONGRESS | 2026
5-9 September | Barcelona, Spain

Using home monitoring to assess lung function trajectories in pulmonary fibrosis: 1-year data from the international, patient-led I-FILE registry

I. Aydemir (Rotterdam, Netherlands), C. Moor (Rotterdam, Netherlands), G. Nakshbandi (Rotterdam, Netherlands), R. Mostard (Heerlen, Netherlands), W. Wuyts (Leuven, Belgium), V. Cottin (Lyon, France), M. Kreuter (Mainz, Germany), M. Polke (Heidelberg, Germany), K. Buschulte (Heidelberg, Germany), P. Saunders (Oxford, United Kingdom), K. Antoniou (Heraklion, Greece), A. Froidure (Bruxelles, Belgium), H. Slabbynck (Antwerpen, Belgium), A. Hoffmann-Vold (Oslo, Norway), M. Durheim (Oslo, Norway), A. van Veen (Nijmegen, Netherlands), D. Hofman (Rotterdam, Netherlands), H. Bjørkekjær (Kristiansand, Norway), M. Vonk (Nijmegen, Netherlands), Z. Daniil (Larissa, Greece), L. Spencer (Liverpool, United Kingdom), P. Bonniaud (Dijon, France), G. Prévot (Toulouse, France), P. Molyneaux (London, United Kingdom), M. Wijsenbeek (Rotterdam, Netherlands)

Background Pulmonary fibrosis (PF) is a diverse group of conditions with heterogeneous disease trajectories. Frequent lung function monitoring may enable earlier detection of disease progression and support timely clinical management. **Aim** To assess the feasibility of an international, patient-led registry using online home spirometry to monitor lung function trajectories in PF. **Methods** The I-FILE registry is a prospective, multinational observational study conducted across 18 hospitals in seven European countries. Patients with PF performed home spirometry for up to two years. We assessed correlations between home and hospital FVC (0/6/12 months), within-patient variability (coefficient of variation, CoV), and 1-year home-based FVC trajectories. **Results** The complete I-FILE cohort enrolled 395 patients; 337 were included in longitudinal analyses (52.5% IPF, 47.5% non-IPF). After 1 year, 249 (67%) participants were actively performing regular home measurements. Home and hospital FVC were strongly correlated at all time points ($r \geq 0.89$) and within-patient variability over 1 year was low (CoV 5.2%, IQR 3.7-6.7). Overall, mean FVC remained stable over 1 year, while individual FVC trajectories widely varied (Figure 1). **Conclusion** An international, patient-led registry using online home spirometry in PF is feasible. Home spirometry provides reliable longitudinal FVC data, supporting its potential role in monitoring disease course and clinical decision-making in daily practice and research.

Figure 1. Individual 1-year FVC trajectories for IPF and non-IPF PF



Lines show patient-specific lung function trajectories relative to baseline, derived from linear mixed-effects modeling using all home spirometry measurements between baseline and day 365. Based on the same models, the mean 1-year FVC change was +57.5 mL in IPF (95% CI 45.4–69.6) and +25.9 mL in non-IPF (95% CI 13.7–38.0).