ATS 2019 Highlights

Respiratory Structure and Function Early Career Professionals

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Get to know members of the RSF Assembly

Is your research clinical, basic science or translational?

My research is a combination of translational and clinical science.

Tell us about your research?

My research principally focuses on developing and advancing new technologies to measure respiratory mechanics and ventilation. These measurements further our understanding of respiratory system physiology and the changes that occur with diseases. I also investigate the utility of these measurements in a clinical setting.

Where do you see yourself in 5 years?

I hope to obtain an NHMRC research fellow position. I look forward to being a productive member of a research team as well as continuing to lead research projects.

What do you find is the major benefit of RSF Assembly Membership?

The ATS RSF group provides both intellectual and career opportunities. It is a fantastic respiratory science community offering networking with experts from institutions from around the world.

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If you or someone you know would like to be featured as an ATS RSF ECP please email Katrina Tonga (katrina.tonga@sydney.edu.au)

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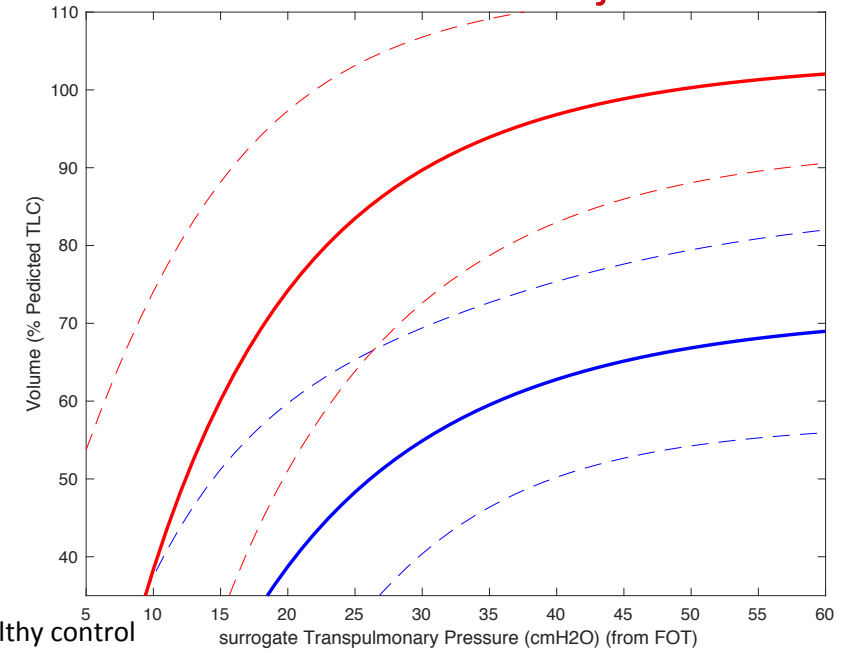
Elastic recoil from FOT in subjects with IPF



	ILD (SD)	Control (SD)	p
Elastic recoil (B/A)	2.17±0.70	0.96±0.79	<0.01

A new tool to monitor disease in IPF

Objective:

Idiopathic pulmonary fibrosis (IPF) is a chronic progressive fibrotic lung disease characterised by a restrictive ventilatory deficit. The changes in lung mechanics include increased elastic recoil. The current gold standard method of measuring elastic recoil requires oesophageal balloon measurements. This method is not used in standard clinical practice, as it is labour intensive and invasive for the patient.

Recently we have developed a surrogate measure of elastic recoil from the forced oscillation technique (FOT). We hypothesise that FOT derived elastic recoil will be higher in subjects with IPF compared to health.

Methods:

Subjects with IPF (n=15) and healthy controls (n=15) completed FOT measurements followed by spirometry, gas transfer (DLCO) and plethsmography. FOT reactance and lung volume was used to calculate a surrogate measure of transpulmonary pressure. The relationship between volume and transpulmonary pressure was used to estimate elastic recoil. Differences between controls and IPF were compared. Correlations between elastic recoil and other lung function parameters and composite physiologic index (CPI) were also compared.

Results:

Subjects with IPF had higher elastic recoil derived from FOT (2.2±0.70 vs 0.95±0.79, p=0.001) compared to control subjects. Measurements of DLCO (r^2=0.43, p<0.01) and CPI (r^2=0.35, p<0.01) were correlated with elastic recoil in subjects with IPF.

Conclusion:

FOT provides a promising surrogate for elastic recoil that is easy to implement into clinical practice. Here, we show that elastic recoil is increased in subjects with IPF. This may have potential clinical applications for screening, monitoring and prognosis in IPF.

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