

ATS Spotlight 2022: Pulmonary Rehabilitation Assembly Early Career Professionals



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Tell us about yourself.

I'm a lifelong athlete. When I started rowing in university, I became really interested in learning more about the physiology behind athletic performance. Exercise is still a major part of my life; I'm happiest when on a road bike somewhere in the mountains, and I'm passionate about using science to help others engage in physical activity in ways that are meaningful to them.

Is your research clinical, basic science, or translational?

Clinical and translational.

Tell us about your research.

People with respiratory disease are often afraid to perform normal daily activities because it could trigger or worsen distressing feelings of breathlessness, which leads to a loss of independence and depression. My research is focused on improving our understanding of the the pathophysiological underpinnings of breathlessness so we can develop better ways to relieve it and help people with respiratory disease be more physically active.

Where do you see yourself in 5 years?

Hopefully still doing research! Preferably as part of my own independent research program at an institution in North America.

How has the Pulmonary Rehabilitation Assembly contributed to your career?

The Journal Club has been a fantastic platform for both learning and networking.

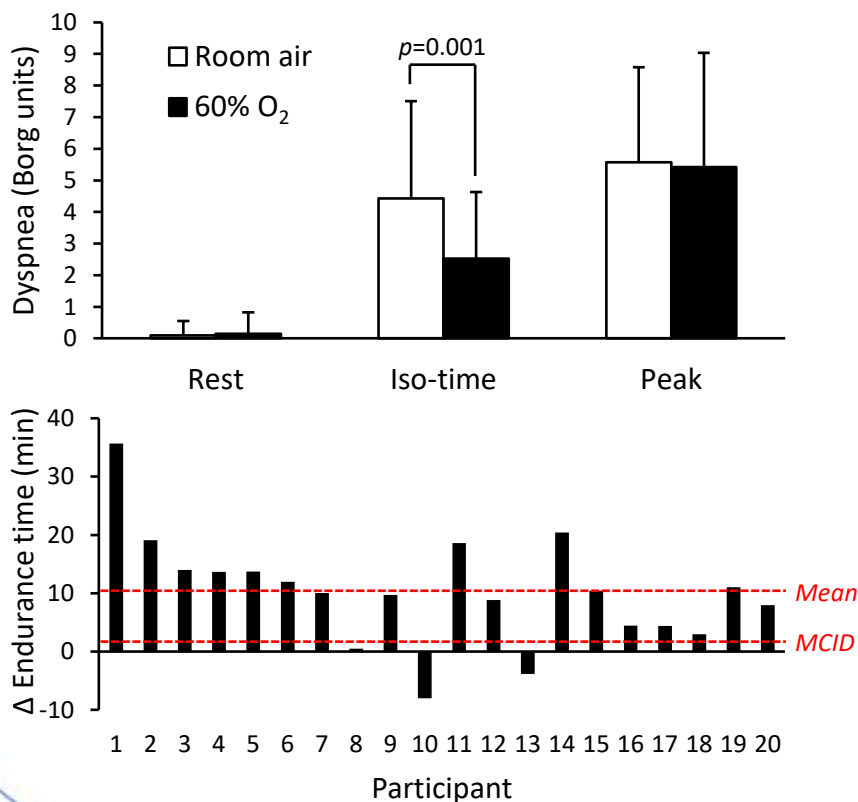
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Effects of hyperoxia on dyspnea and exercise endurance in fibrotic interstitial lung disease

Rationale: Dyspnea (breathlessness) is a distressing and disabling symptom for people with fibrotic interstitial lung disease (ILD). Supplemental oxygen (O₂) has potential to relieve dyspnea in these individuals. However, previous studies show conflicting results regarding its effectiveness, and many people with ILD do not meet the medical eligibility criteria. We examined the effects of breathing high levels of O₂ on symptoms and exercise tolerance in people with ILD who do not normally qualify for supplemental O₂.

Methods: 20 people with ILD performed 2 cycle exercise tests (75% of peak work-rate) while breathing room air (21% O₂) or a hyperoxic gas mixture (60% O₂).

Results: Dyspnea ratings were significantly lower at iso-time (the highest equivalent sub-maximal time achieved during both exercise tests) with 60% O₂ vs. room air (2.5±2.1 vs. 4.4±3.1 Borg units, $p=0.001$). Exercise endurance time was significantly higher with 60% O₂ vs. room air (21.9±12.9 vs. 11.6±10.0 min, $p<0.001$).

Conclusions: 60% O₂ improved dyspnea and exercise tolerance in people with ILD well beyond the minimal clinically important difference (MCID) of 1 Borg unit and 105 seconds, respectively. This approach to O₂ delivery may augment exercise rehabilitation outcomes, such as quality of life, by allowing these individuals to train at higher intensities and/or for longer durations.

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