

ATS Spotlight 2022: Pulmonary Rehabilitation Assembly Early Career Professionals



Sophie Collins, MSc, BS
*PhD Candidate, Faculty of Rehabilitation
Medicine, University of Alberta, Canada*

Tell us about yourself.

I am French-Canadian, born and raised in Alberta, and completed university studies in both French and English. One of my creative outlets is painting, a skill which has allowed me to be innovative in my work.

Is your research clinical, basic science, or translational?

Clinical

Tell us about your research.

My PhD program is focused on pulmonary vascular function in patients with COPD. In my first PhD study, I am evaluating the effects of an inhaled selective pulmonary vasodilator on exercise capacity and dyspnea via a crossover RCT. In my second study, I am examining the relationship between physical activity and exercise capacity on CT-derived pulmonary vascular measures in the CanCOLD longitudinal cohort.

Where do you see yourself in 5 years?

Following completion of my PhD, I plan on pursuing a post-doctoral fellowship to expand my knowledge and skills in clinical physiology, lung imaging, and pulmonary rehabilitation.

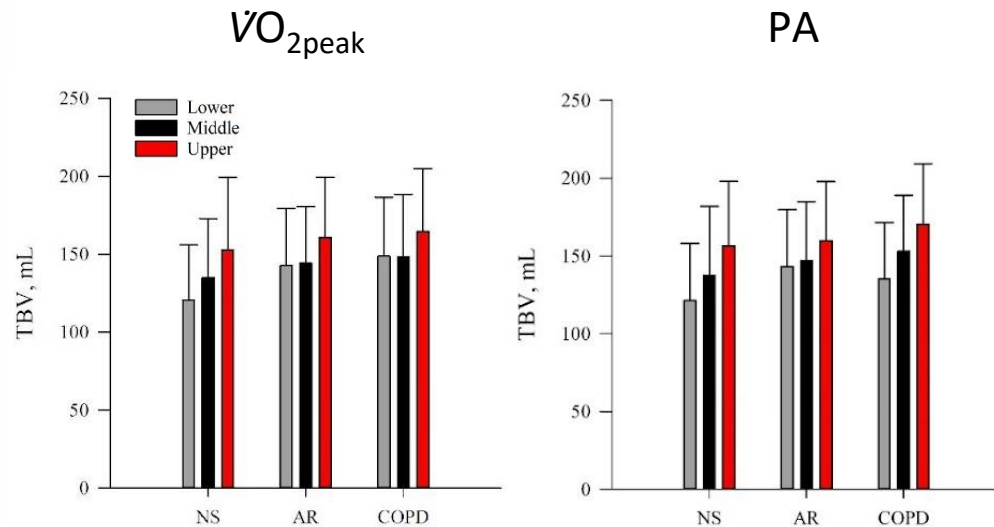
How has the Pulmonary Rehabilitation Assembly contributed to your career?

As an early career researcher, being a member of the PR assembly has allowed me to connect with other researchers. I look forward to meeting and learning from world class experts in pulmonary research at the upcoming ATS International Conference.

ATS Spotlight 2022: Pulmonary Rehabilitation Assembly Early Career Professionals

Sophie Collins, MSc, BSc

Faculty of Rehabilitation Medicine,
University of Alberta, Edmonton AB, Canada



Data are mean \pm SD. Left: total pulmonary blood vessel volume (TBV) in never smokers (NS), at-risk (AR) and COPD by tertiles of $\dot{V}O_{2peak}$ % predicted. Right: TBV in NS, AR and chronic obstructive pulmonary disease (COPD) by tertiles of PA (calories/week expended in \geq moderate intensity exercise).

Uncovering the link between physical activity and exercise capacity and the pulmonary vasculature in COPD using CT

Rationale: Higher exercise capacity ($\dot{V}O_{2peak}$) and regular physical activity (PA) have been associated with reduced lung function decline and risk of COPD in smokers. The associations between $\dot{V}O_{2peak}$ /PA and the pulmonary vasculature in people with or without COPD are unclear.

Methods: We evaluated $\dot{V}O_{2peak}$, PA, and CT pulmonary vascular measures in 1103 participants from the CanCOLD longitudinal cohort.

Results: In linear mixed models, reduced $\dot{V}O_{2peak}$ was a significant predictor of lower CT total blood vessel volume (TBV), even after controlling for degree of airflow obstruction and emphysema, while PA was not a significant predictor. For every 1L/min increase in $\dot{V}O_{2peak}$, TBV is increased by 10mL.

Conclusions: Our findings show that $\dot{V}O_{2peak}$ is an important predictor of CT derived TBV, regardless of group or COPD severity.

Supported by a CRRN scholarship, Supervised by Dr. Michael Stickland. For more information, please attend to my presentation at the 2022 ATS Conference: C18-COPD: Who, Why, & How Mini Symposium, on Tuesday May 17, 2022 @ 9:30-11:00 AM