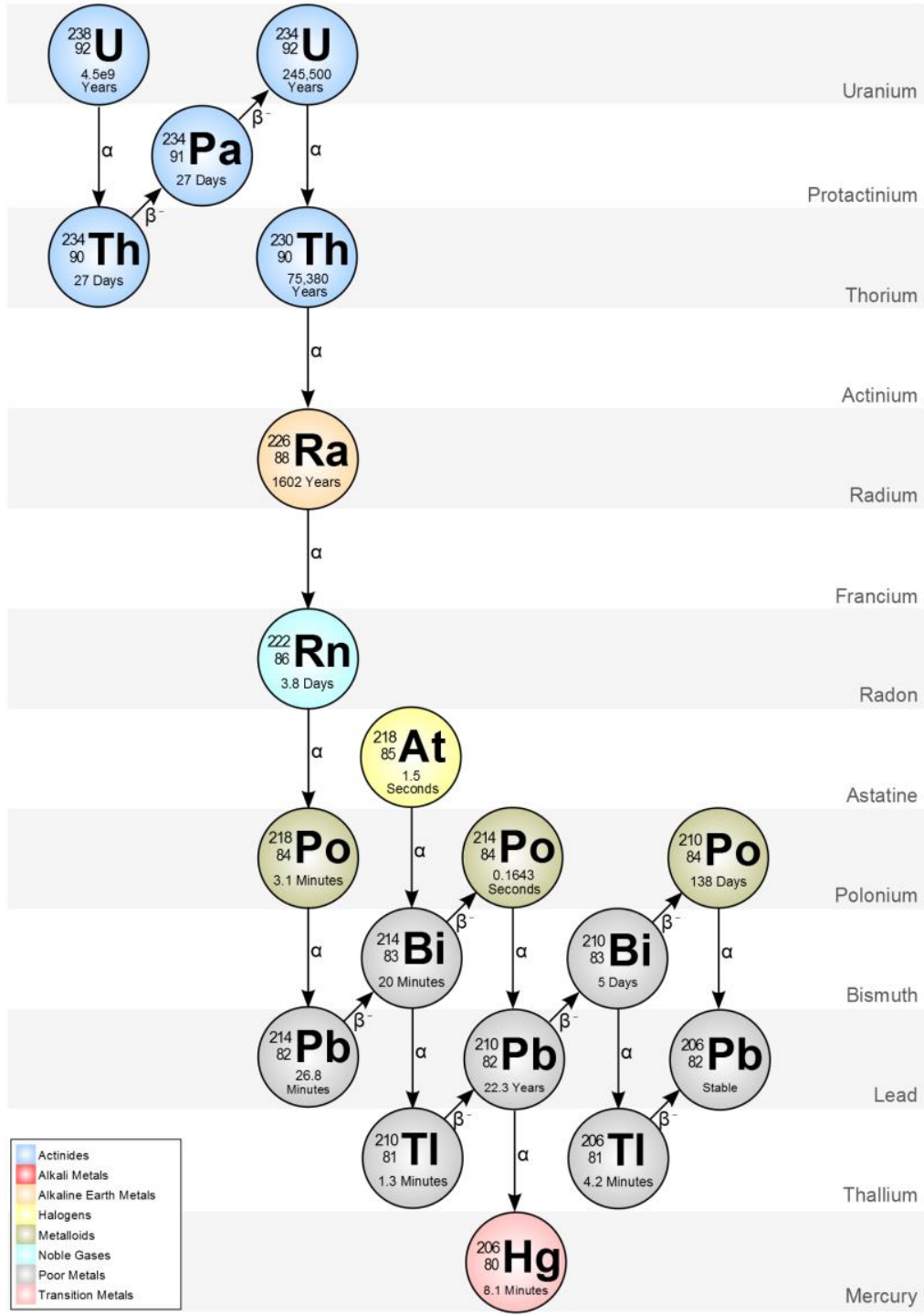


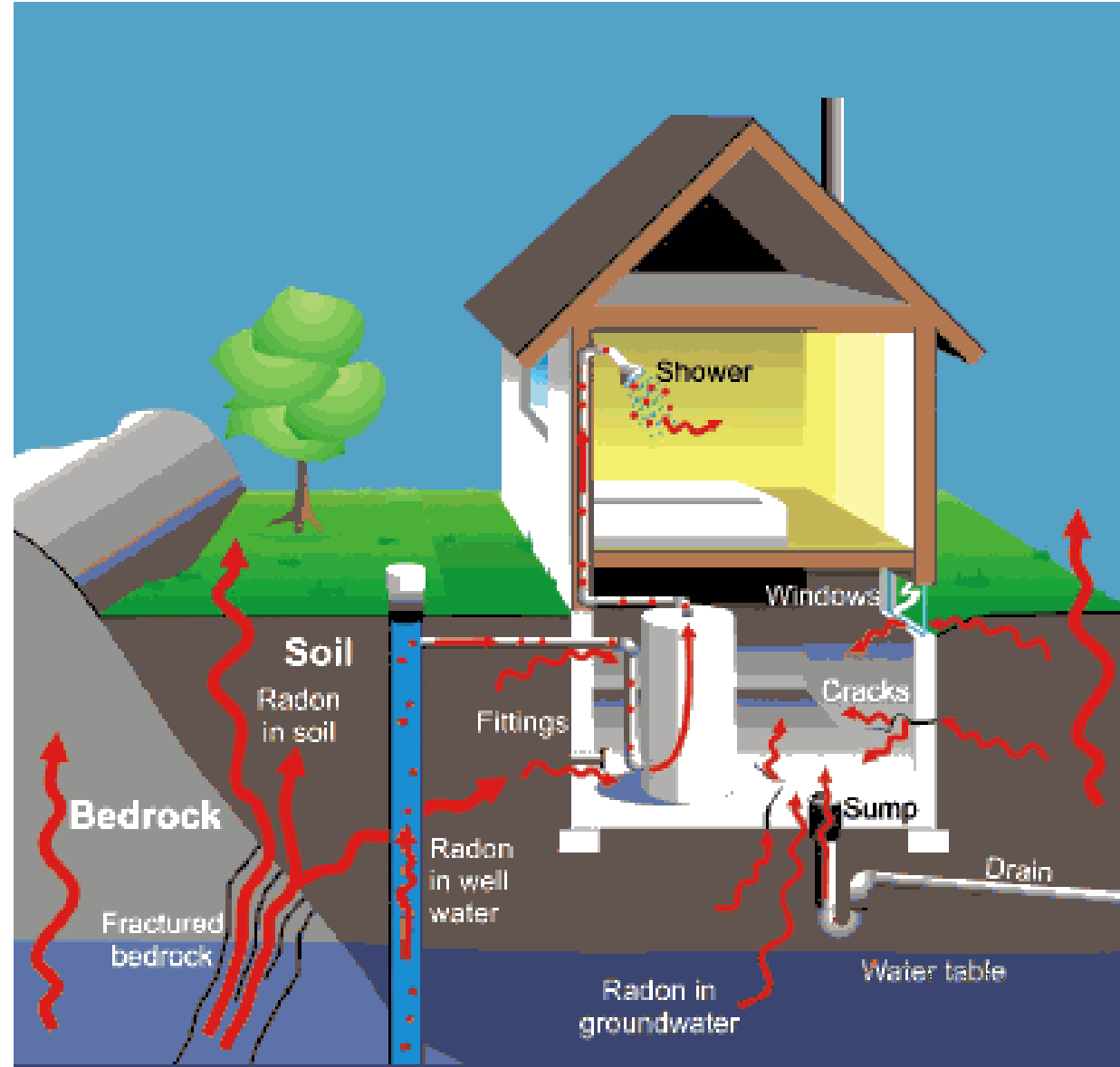
THE EFFECT OF RADON INHALATION IN A HEALTHY ANIMAL MODEL

Dr James McEvoy-May

The Lung Lab

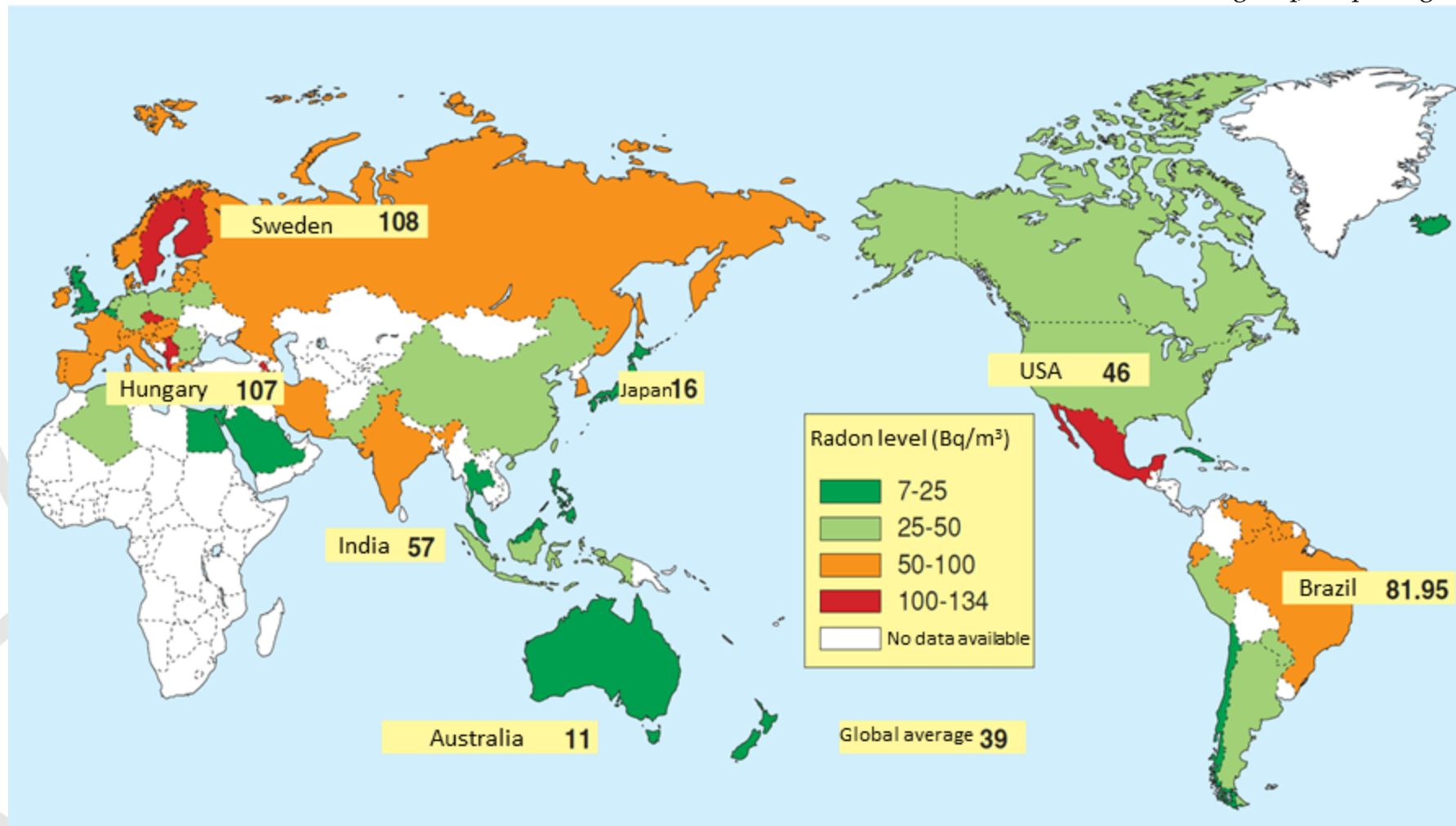


RADON



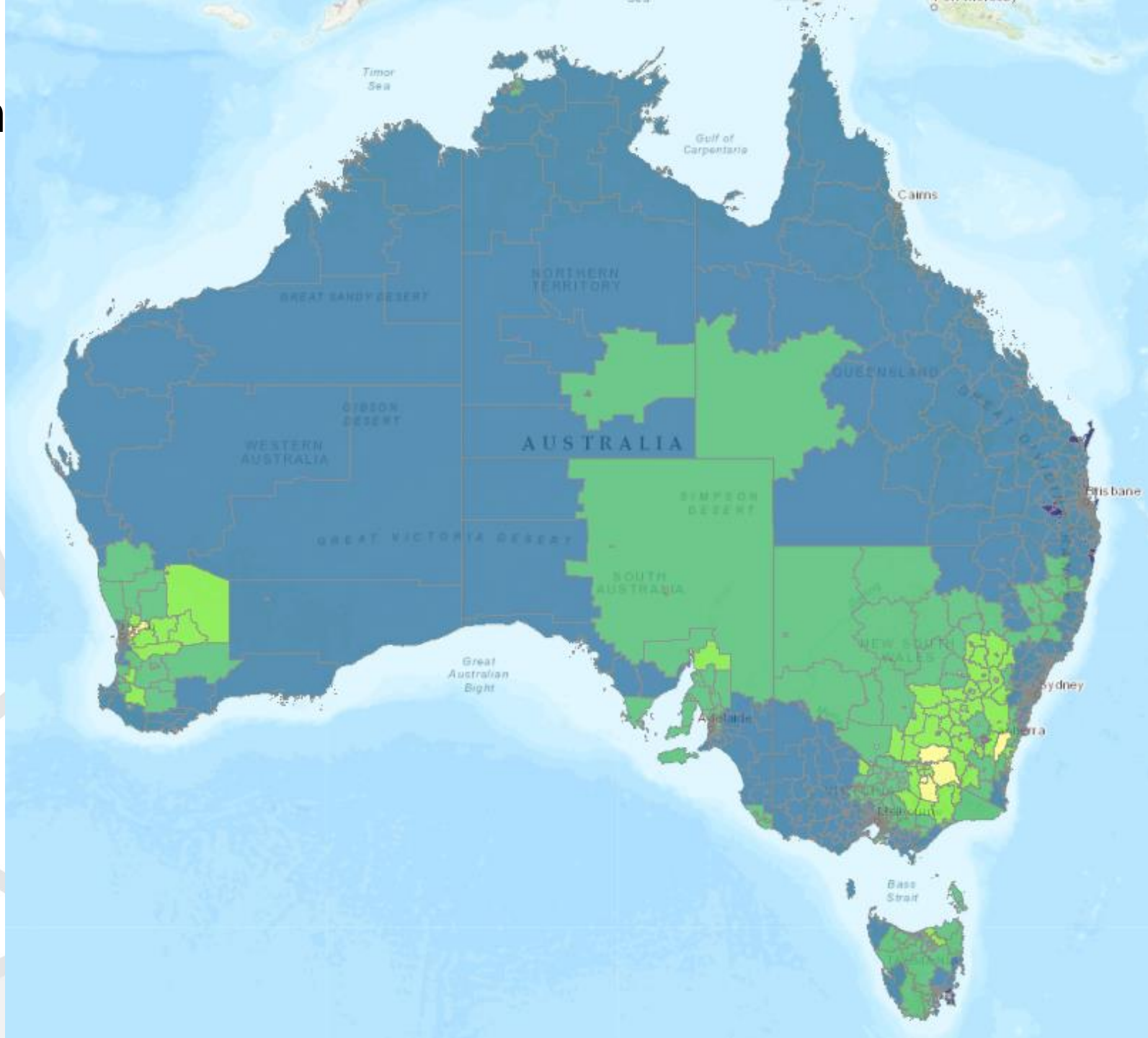
Indoor radon levels

Average Bq/m³ per region



2006 UNSCEAR report

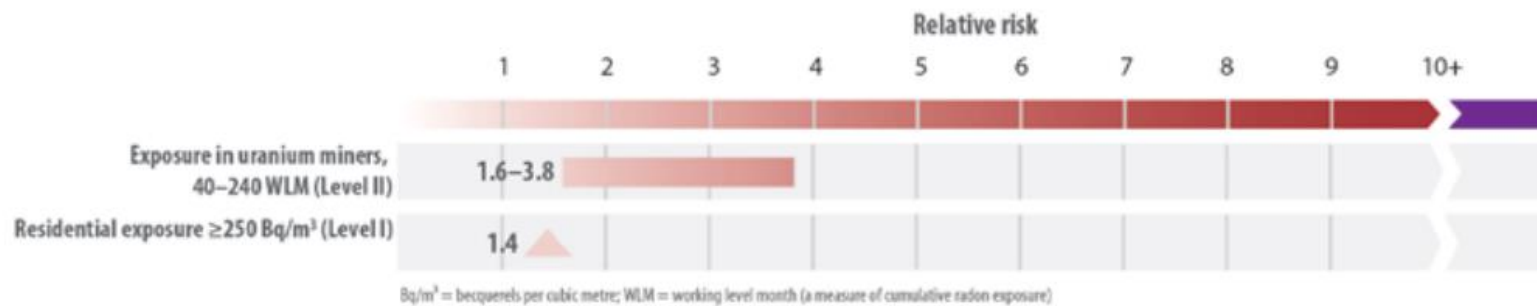
In



m³ per region



Radon



Smoking interacts with this risk factor and further increases the risk of developing lung cancer

TAKE ACTION ON RADON

Radon is an invisible, radioactive gas that comes from the ground



Radon is in ALL buildings



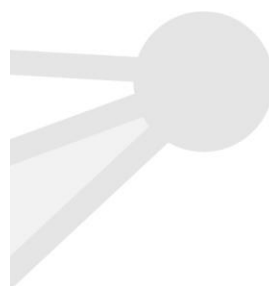
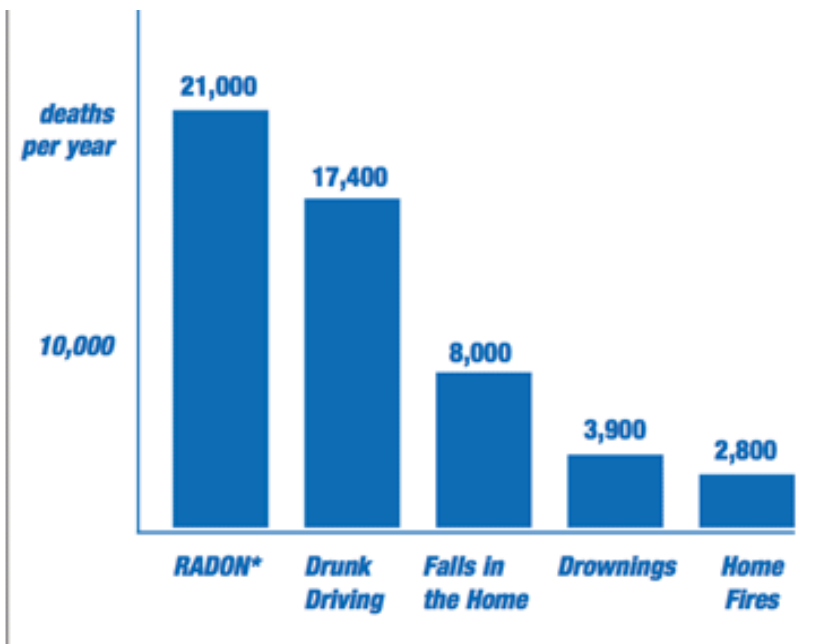
The only way to know how much radon is in your home is to TEST



Radon is easy to TEST and easy to REDUCE



EPA estimates that radon causes thousands of cancer deaths in the U.S. each year.



ABOUT

20,000

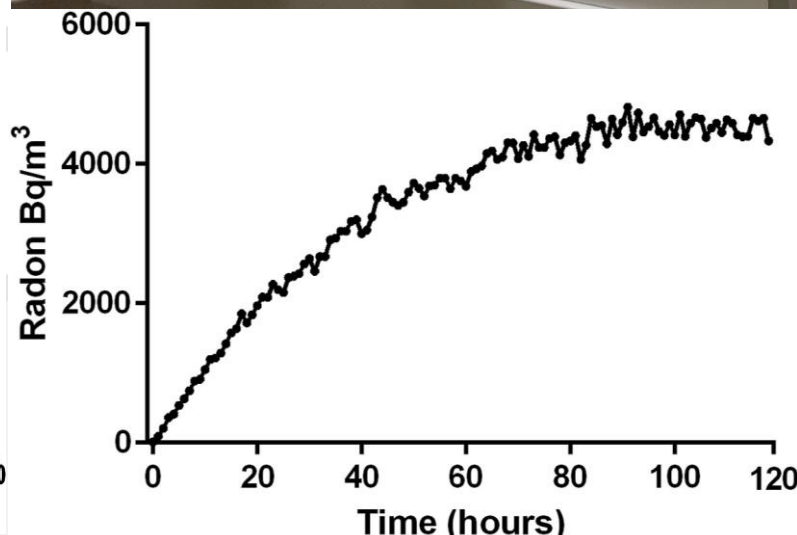
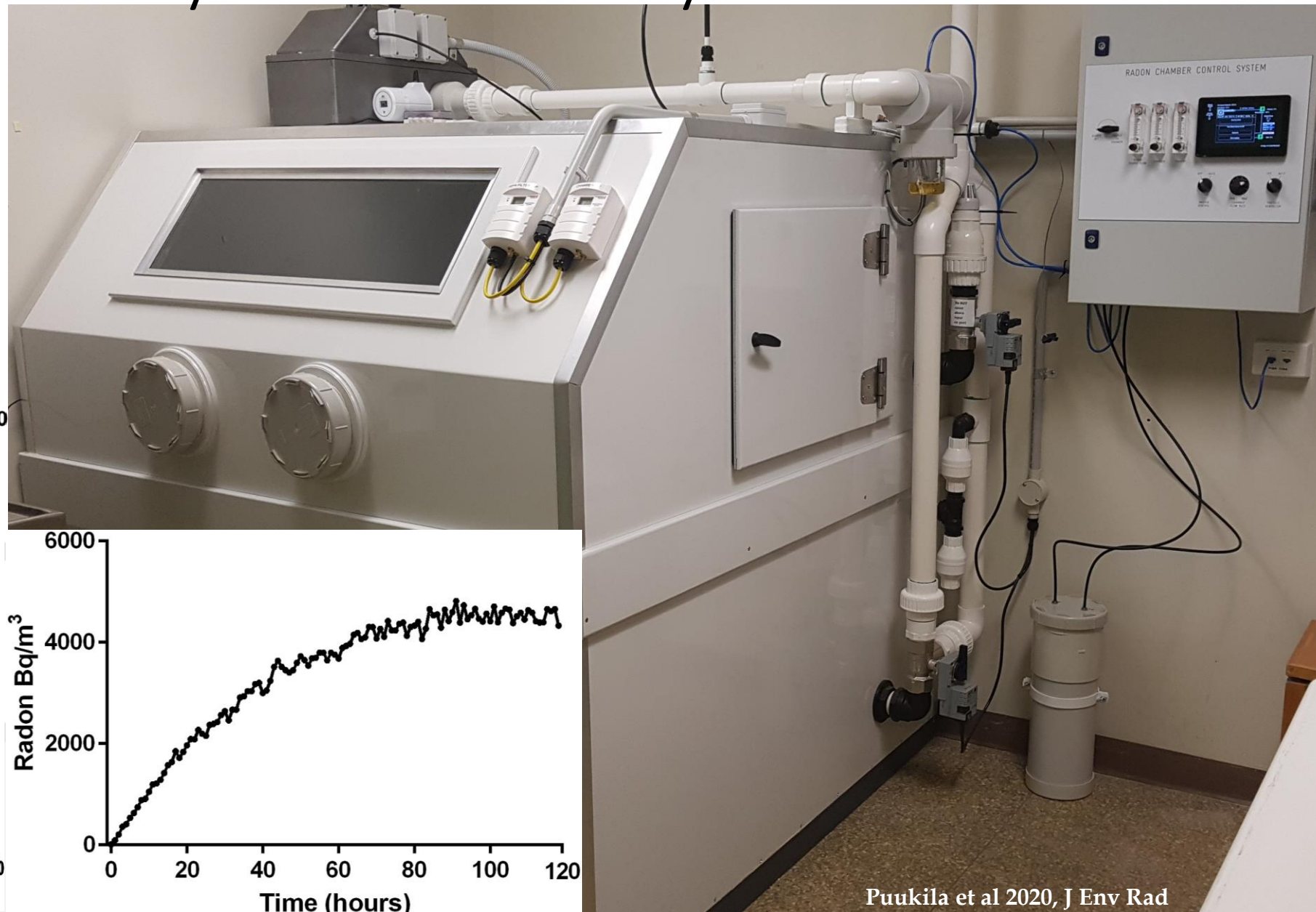
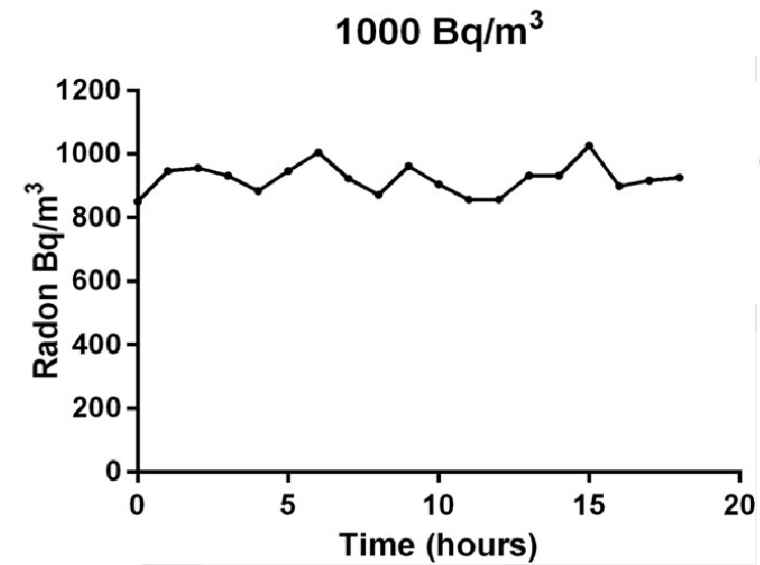
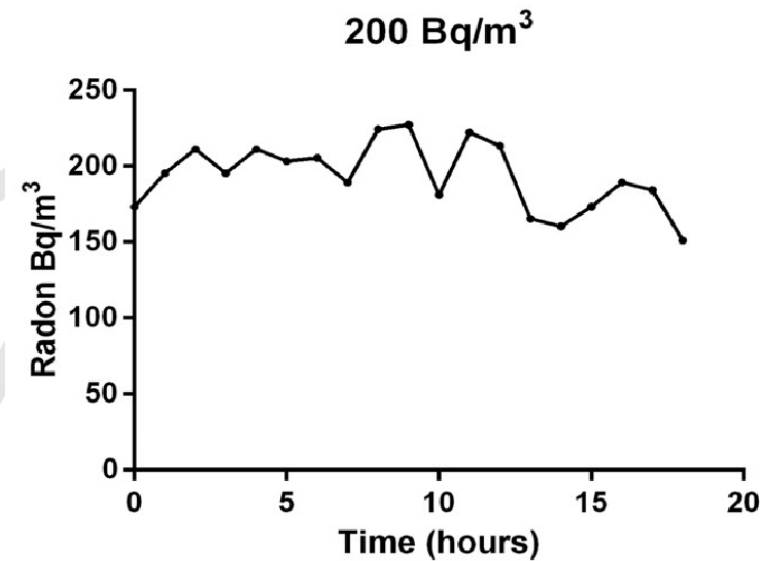
DEATHS FROM LUNG CANCER WERE CAUSED BY EXPOSURE TO INCREASED RADON LEVELS

*Radon is estimated to cause about 21,000 lung cancer deaths per year, according to EPA's 2003 Assessment of Risks from Radon in Homes (EPA 402-R-03-003). The numbers of deaths from other causes are taken from the Centers for Disease Control and Prevention's 2005-2006 National Center for Injury Prevention and Control Report and 2006 National Safety Council Reports.

Experimental Question

Does radon inhalation alter the immunology, physiology, or function of the respiratory system in a healthy model?

Flinders University Radon Facility



Methods



**Healthy Male
Sprague Dawley rats**



Radon Gas exposure

- 1 Day
- 1 Week
- 2 Weeks
- 4 Weeks

Sham

200 Bq/m³

1000 Bq/m³

OUTCOMES

Immunological

- BAL cellular infiltrate

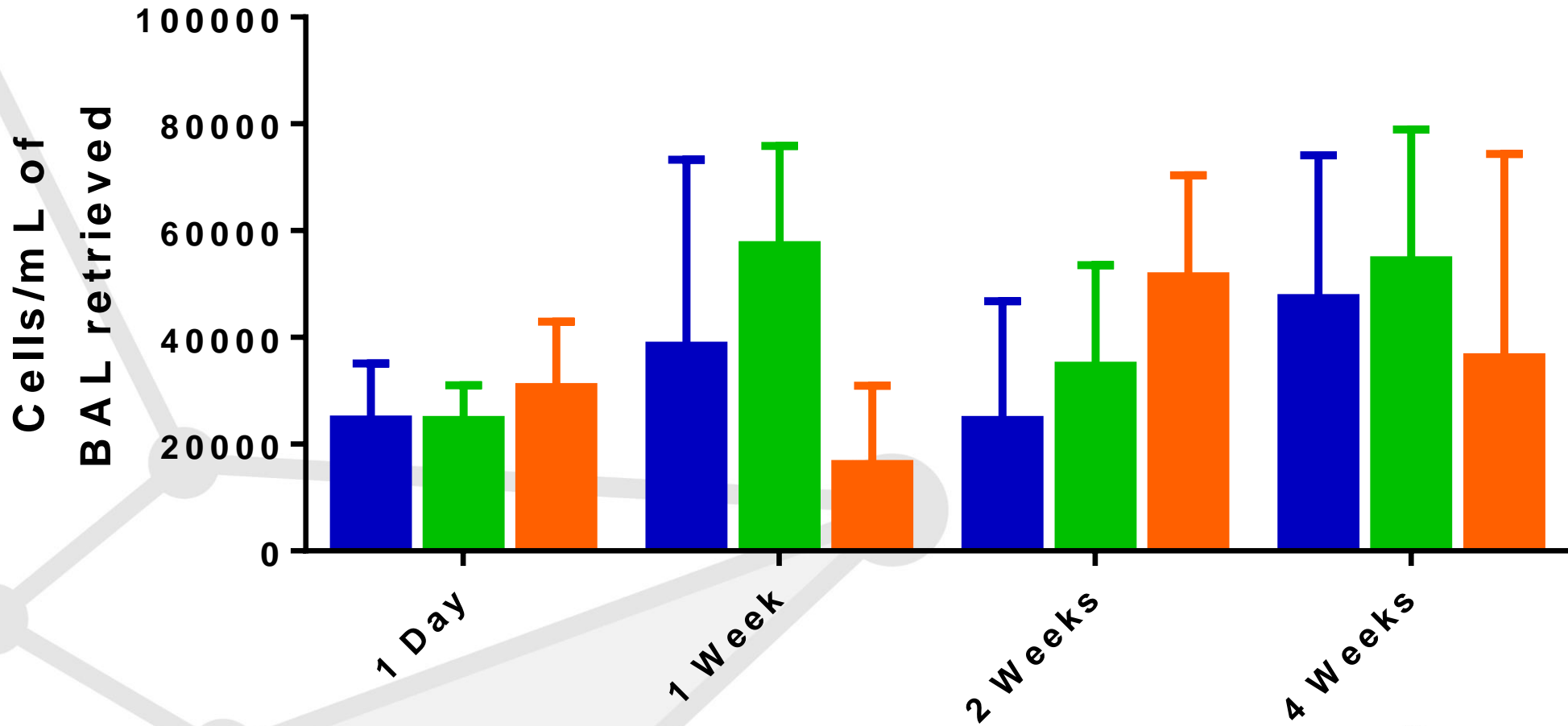
Physiological

- Wet lung weight : body weight ratio

Functional

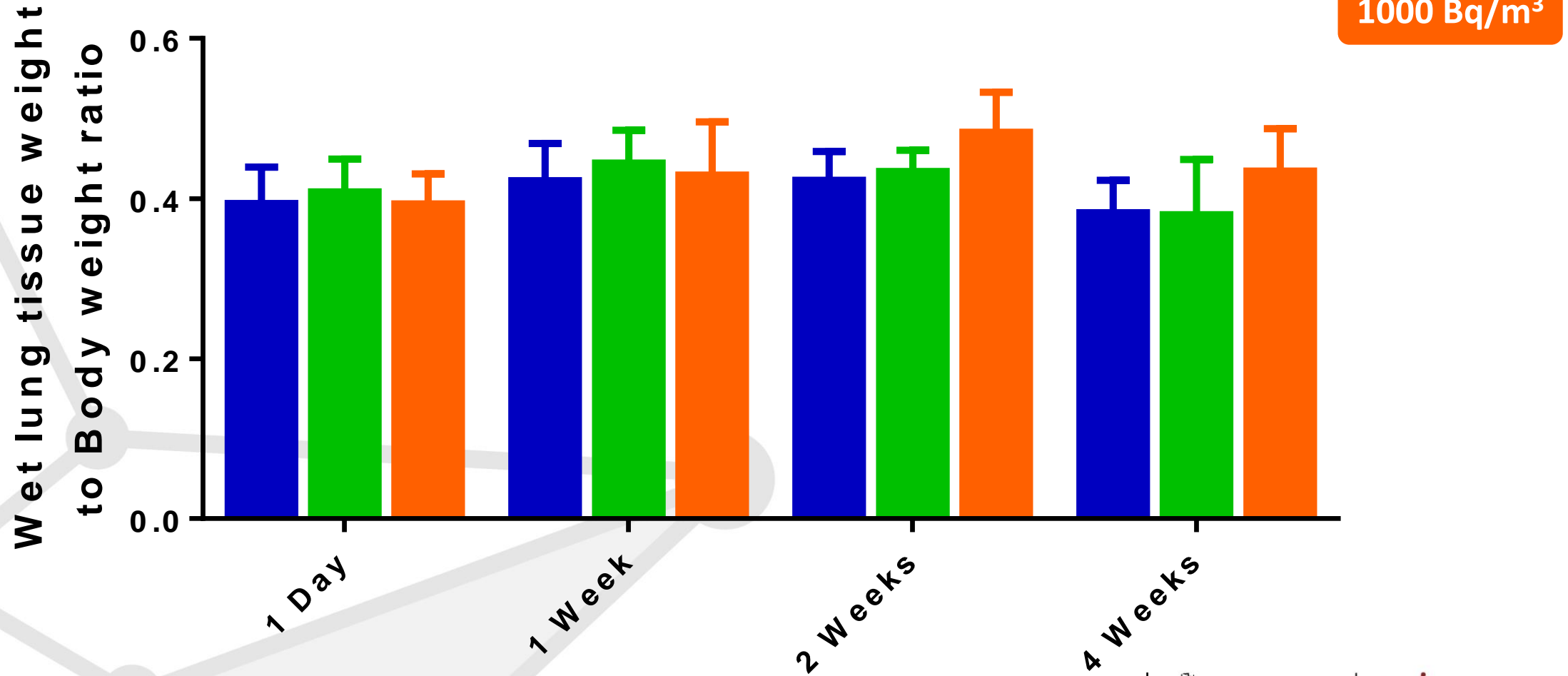
- Respiratory mechanics

No Immunological changes



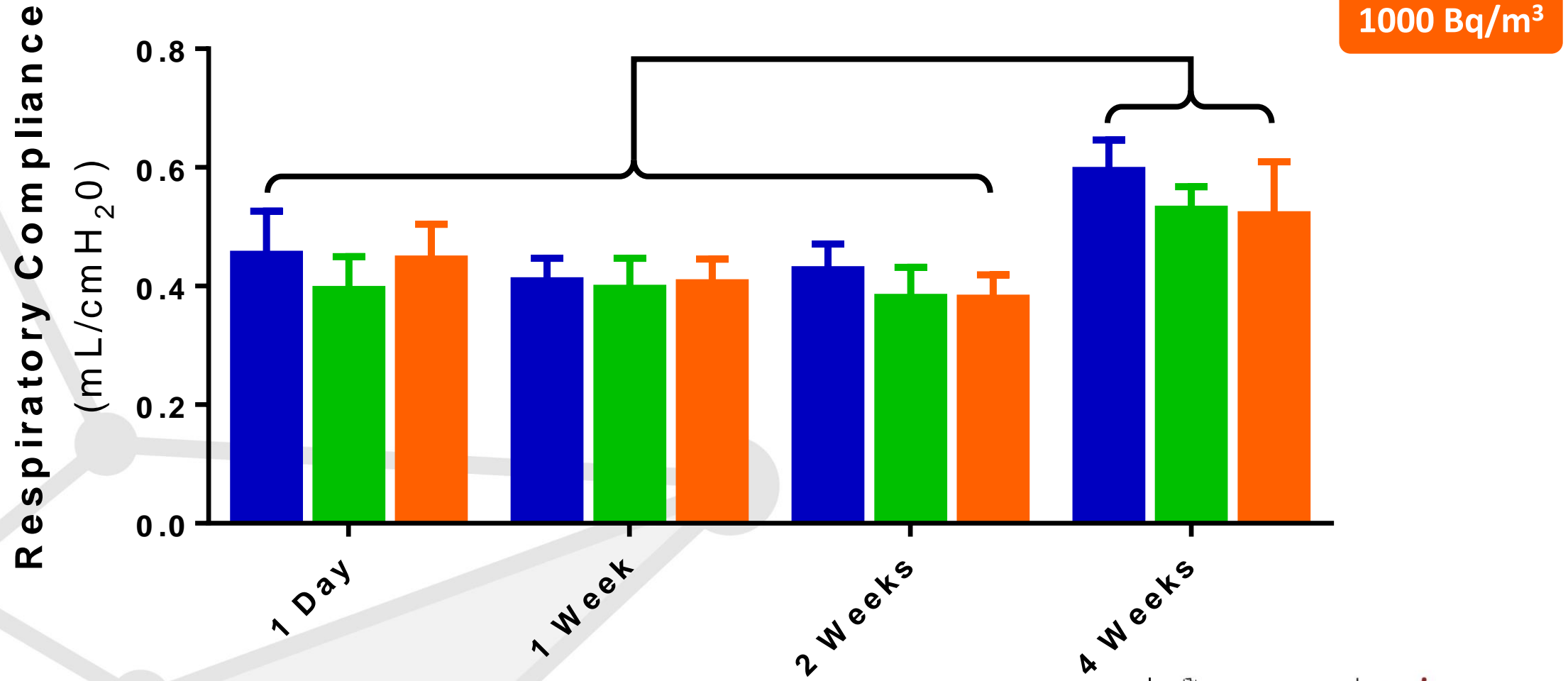
Two way ANOVA, n = 5-8 animals per group

No physiological change



Two way ANOVA, n = 5-8 animals per group

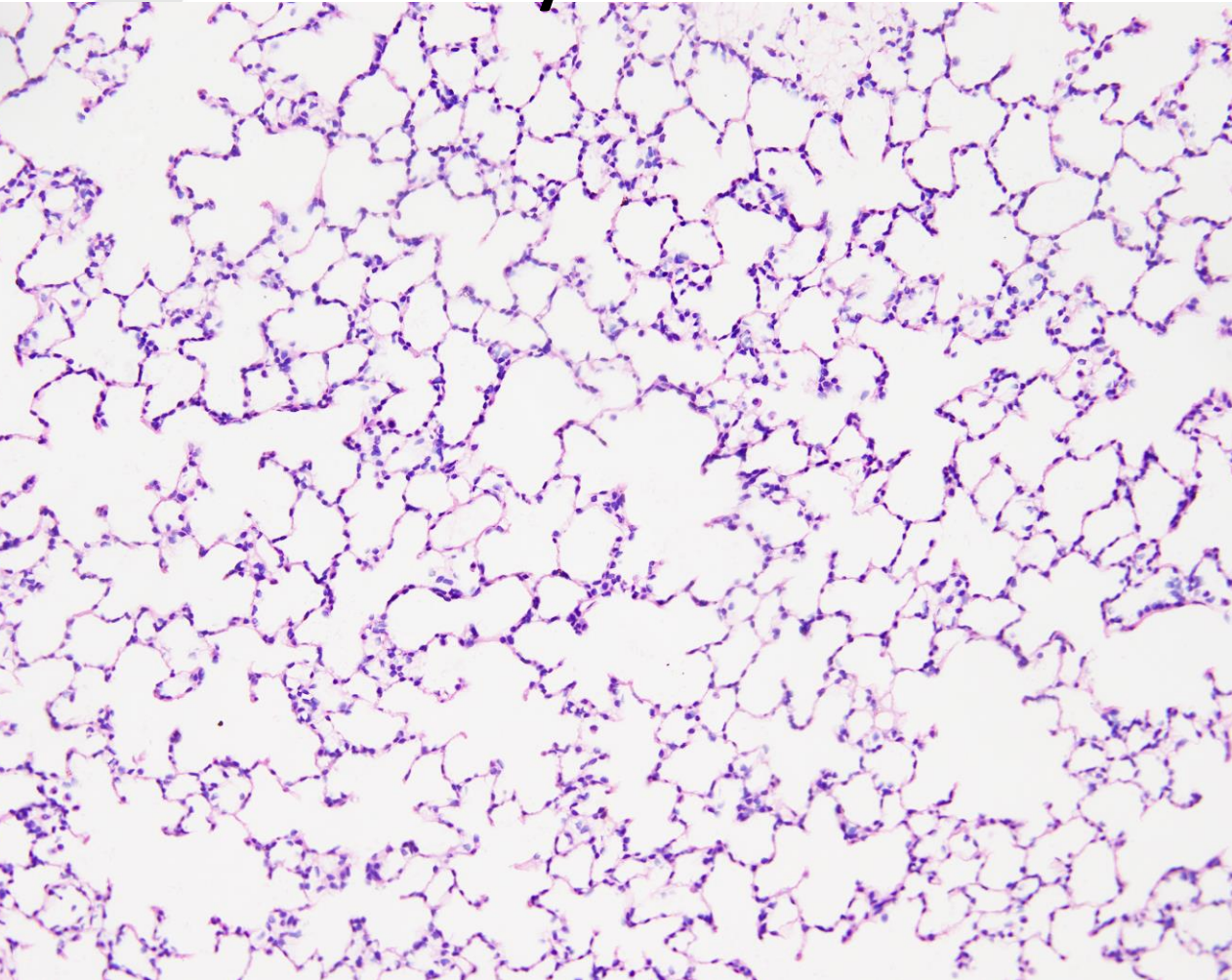
Functional changes



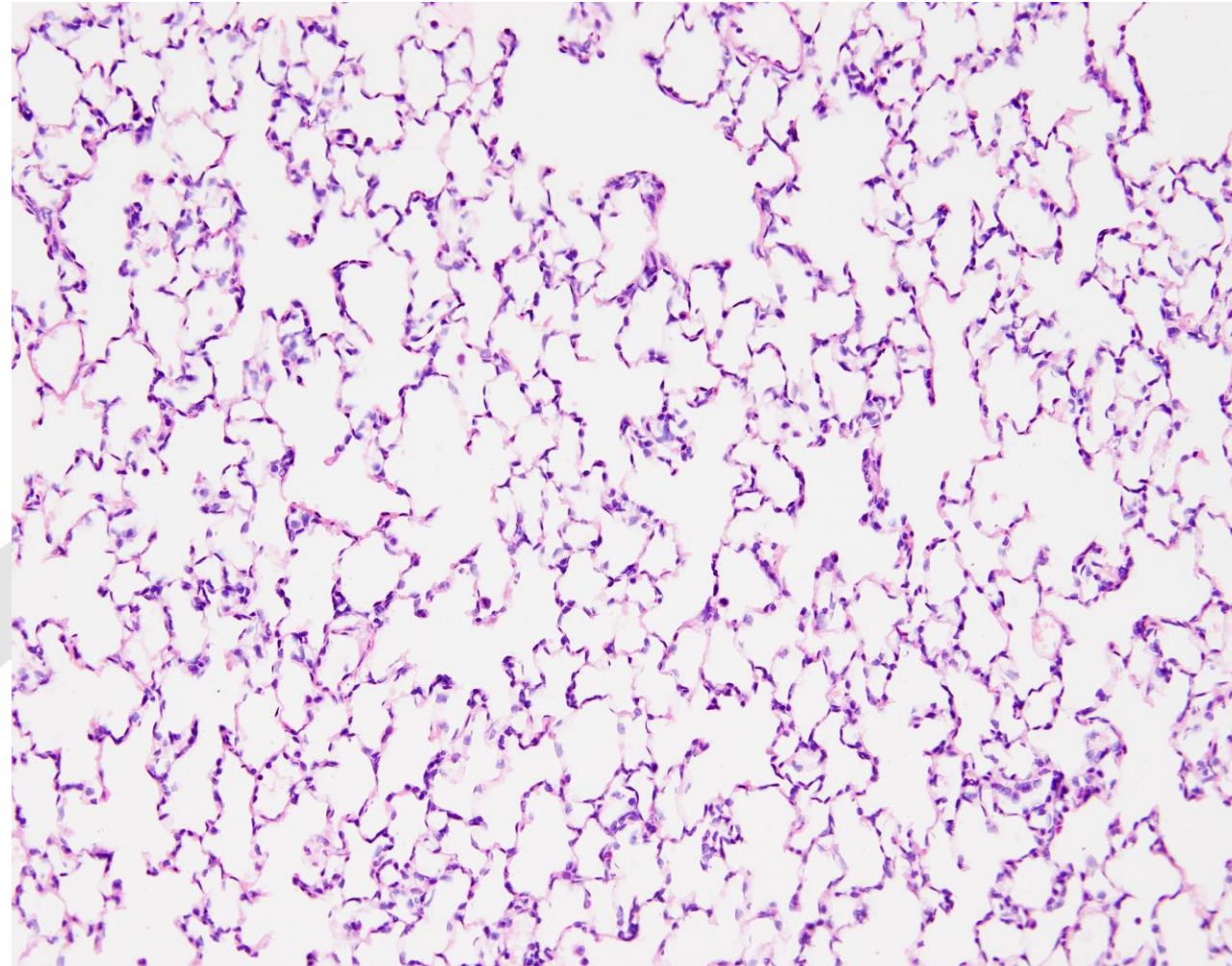
Two way ANOVA, n = 5-8 animals per group

Functional changes

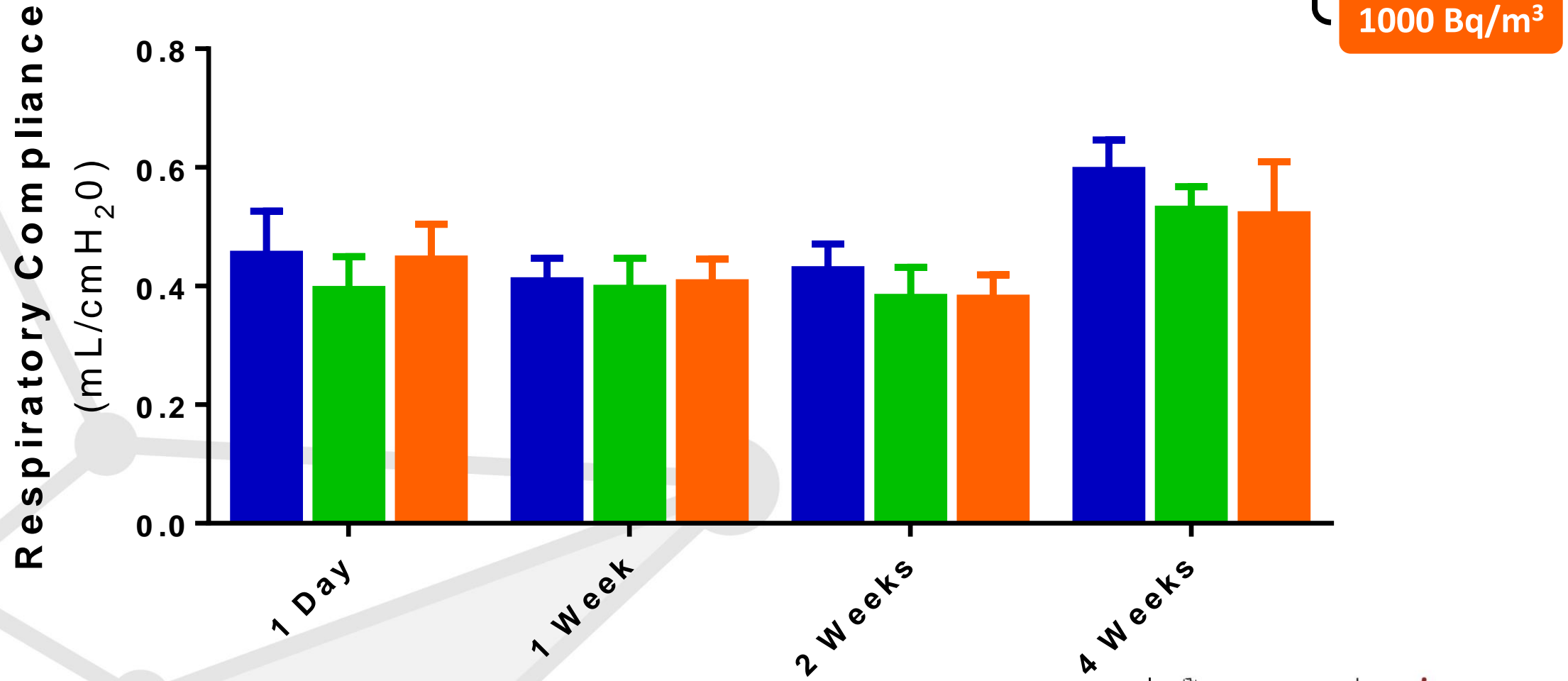
1 Day SHAM



4 Week SHAM



Functional changes, maybe?



Two way ANOVA, n = 5-8 animals per group

Conclusions

Exposure to Radon gas from 1 day to 4 weeks appears not to cause damage associated with acute lung injury, but may alter lung function. However, some of these changes may be due to the vehicle carrying the RDP

Acknowledgements

The Lung Lab, Flinders University

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THE UNIVERSITY
of ADELAIDE



Centre for Radiation
Research Education
and Innovation

CRREI

Associate Professor Antony Hooker



Flinders
UNIVERSITY



FHMRI
FLINDERS HEALTH & MEDICAL
RESEARCH INSTITUTE

Retired EPA

Peter Haigh

Andrew Johnston



Northern Ontario
School of Medicine
École de médecine
du Nord de l'Ontario
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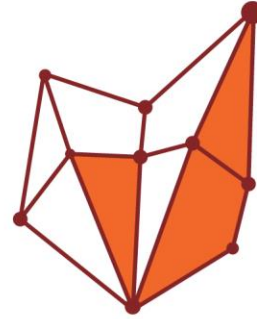
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Northern Ontario School of Medicine, Canada

Professor Douglas Boreham



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L'Ontario de la Santé

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