

# Hayden Allen BSc (Hons.) MRes

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## RESEARCH INTERESTS

My primary research interest focuses on the impact of asthma and exercise-induced bronchoconstriction (EIB) in endurance athletes. To date, I have conducted research evaluating the agreement of diagnostic methods employed to detect EIB and assessed the utility of questionnaires and other respiratory measures to support a diagnosis of EIB. I have also conducted qualitative research investigating athletes experience and perceptions of inhaler medication use and associated therapeutic use exemptions, and their knowledge of anti-doping policy related to EIB. Future work will investigate endurance performance in athletes with EIB and the mechanisms that have the potential to limit exercise tolerance.

## EDUCATION

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### LEEDS BECKETT UNIVERSITY

**2016-**                      **PhD Exercise Physiology**  
Carnegie School of Sport  
Thesis title: *Anti-doping policy, medication use and sports performance in athletes with exercise-induced bronchoconstriction*  
Supervisors: Dr Oliver J. Price and Professor Susan Backhouse  
Advisor: Dr James H. Hull - Consultant Respiratory Physician, Royal Brompton Hospital, London.

### LOUGHBOROUGH UNIVERSITY

**2015-16**                      **MRes - Human Biology**  
School of Sport, Exercise and Health Sciences  
Thesis title: *Use of real time exhaled breath mass spectrometry to monitor constituents of the exhaled breath during exercise*  
First Class (Distinction) 70%

**2012-2015**                      **BSc (Hons) Sport and Exercise Science**  
School of Sport and Exercise Sciences  
Upper Second-Class Honours

**2010 – 2012**                      3 'A' Levels: Maths (A\*), Chemistry (A), Physics (A)

## EMPLOYMENT

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**2016 -**                      **Graduate Teaching Assistant**  
Leeds Beckett University, Carnegie School of Sport

Modules taught:

- Applied sport and clinical exercise physiology
- Physiology of the human body
- Personal, professional, academic development for sport and exercise sciences
- Scientific foundations of human movement and physical activity

## RESEARCH OUTPUTS

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### Published journal articles

- Anti-doping policy, therapeutic use exemption and medication use in athletes with asthma: a narrative review and critical appraisal of evidence. **Allen H.**, Backhouse S.H., Hull J.H., Price O.J. (, Sports Medicine, 2019)
- Diagnosing exercise-induced bronchoconstriction: over or under detection? Jackson A. \*, **Allen H.** \*, Hull J.H., Backhouse S.H., Hopker J., Price O.J., Dickinson J. (under review, Medicine and Science in Sports and Exercise, 2018)
- The Allergy Questionnaire for Athletes provides value in the assessment of exercise-induced bronchoconstriction. **Allen H.**, Hull J.H., Backhouse S.H., Dickinson J.W., De Carne T., Dimitrou L., Price O.J (Allergy, 2019)

### Published abstracts and conference proceedings

- Dietary Nitrate Supplementation increases fractional exhaled nitric oxide: Implications for the assessment of airway health in athletes. **Allen H.**, Hull J.H., O'Hara J.P., Dickinson J.W., Price O.J (BTS Winter Meeting 2019)
- The role of fractional exhaled nitric oxide in the assessment of athletes reporting exertional dyspnoea. **Allen H.**, Hull J.H., Backhouse S.H., Dickinson J.W., De Carne T., Dimitrou L., Price O.J (EAACI Congress 2019)
- Dietary Nitrate Supplementation increases fractional exhaled nitric oxide: Implications for the assessment of airway health in athletes. **Allen H.**, Hull J.H., O'Hara J.P., Dickinson J.W., Price O.J (EAACI Congress 2019)
- An evaluation of exercise testing and eucapnic voluntary hyperpnoea for the detection of exercise-induced bronchoconstriction Jackson A. \*, **Allen H.** \*, Hull J.H., Backhouse S.H., Hopker J., Price O.J., Dickinson J (EAACI Congress 2019)
- Does the measurement of fractional exhaled nitric oxide have a role in the detection of exercise-induced bronchoconstriction in athletes? **Allen H.**, Hull J.H., Backhouse S.H., Price O.J (British Association of Sport and Exercise Medicine Annual Conference, 2018)
- The allergy questionnaire for athletes: A simple screening tool for the assessment of exercise-induced bronchoconstriction. **Allen H.**, Hull J.H., Backhouse S.H., Price O.J (British Association of Sport and Exercise Medicine Annual Conference, 2018)
- Price, O.J., Darville, L., **Allen, H.** and Hull, J.H., 2017. P201 Parkrun dyspnoea-isn't it all exercise-induced asthma? Thorax, 72, p.A192.

\* denotes co-first authorship

## PROFESSIONAL MEMBERSHIPS

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2018 – European Academy of Allergy and Clinical Immunology

## TEACHING EXPERIENCE

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- Seminar and lecture leadership on exercise physiology modules across the undergraduate and postgraduate sport and exercise science provision.

- Teaching of personal, professional and academic development skills.
- Supervision of undergraduate student dissertation data collection.

## **APPLIED PHYSIOLOGY EXPERIENCE**

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- Field based assessment of respiratory function (questionnaires, visual analogue scales, spirometry, airway inflammation assessment, respiratory muscle strength) in professional cyclists, conducted prior to the Tour de France 2019.

## **SKILLS**

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### **Technical**

- Assessment of respiratory health including: spirometry, airway inflammation, bronchodilator reversibility testing, respiratory muscle strength, bronchoprovocation testing via eucapnic voluntary hyperpnoea and exercise challenge.
- Endurance performance testing using critical power methodology including: time to exhaustion testing, fingertip blood sampling, expired gas analysis, mathematical modelling.
- Cardio-pulmonary exercise testing and interpretation.

### **Research Methods**

- Conducting robust randomised controlled trials and diagnostic research.
- Determination of appropriate statistical tests and interpretation of analysis outputs.
- Design and execution of semi-structured qualitative interviews.
- Qualitative interview transcription and use of thematic analysis.

## **FUNDING**

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Loughborough University Postgraduate Support Scheme Scholarship (2015-2016)

Partnership for Clean Competition (PCC) conference 2019 travel grant (April 2019)

European Academy of Allergy Clinical Immunology Congress 2019 Junior Member Scholarship (June 2019)

## **REFEREES**

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### **Dr Oliver J. Price**

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Carnegie School of Sport  
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### **Professor Susan H. Backhouse**

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