



CENTRE OF EXCELLENCE IN
SEVERE ASTHMA

Innovative solutions for severe asthma

Annual Report 2015 / 2016

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Message from the Co-Directors

The Centre of Excellence in Severe Asthma is working hard to bring severe asthma to the forefront of clinical research in Australia and indeed internationally, and to translate new knowledge into practice to improve outcomes for people with severe asthma.

Over the last two years the investigators and scholars of the centre have made significant progress in defining the research agenda, developing and conducting new research, and in developing educational material to aid in the translation of knowledge into clinical practice. We have also effectively developed new research collaborations with clinicians and researchers from the international severe asthma community. This report describes some of these activities.

Over the next 12 months, we look forward to advancing this new research and engaging with the wider community to further develop tools and resources to improve the management of severe asthma. We will also work with key peak bodies to translate new research and develop contemporary public health messages as they relate to severe asthma.

We hope to continue to develop as a sustainable translational research and training centre for this important health care area.



Co-Directors Profs. Peter Gibson and
Vanessa McDonald

About the Centre of Excellence in Severe Asthma

The Centre of Excellence in Severe Asthma supports training, research, collaboration and translation of findings for the management of severe asthma. It is funded by the Australian National Health and Medical Research Council (NHMRC) Centres of Research Excellence programme from 2014-2019. The centre brings together researchers from universities and hospitals in Australia and internationally. Our Chief Investigators are located in Newcastle, Sydney, Melbourne, Brisbane and Perth. Leading researchers, clinicians and healthcare providers are teaming up with stakeholders, people with asthma and their significant others to improve the diagnosis, management and treatment of severe asthma.

Why Study Severe Asthma?

Asthma is a common disease, which directly affects 10% of Australians. Most people with asthma are able to achieve control of their disease. People with severe asthma however, have persistent symptoms that remain uncontrolled with standard treatment. This reasonably small population contributes to the major burden of illness from asthma.

Severe asthma negatively impacts health and quality of life for people with the disease and their families, and it represents a major healthcare cost for society. New approaches to the management of severe asthma are urgently needed in order to improve outcomes for patients and the health care system.

Our Mission

The mission of the Centre is to ***develop innovative solutions for severe asthma***. We are developing innovative approaches to understand why severe asthma occurs, to improve disease diagnosis and management and to inform the use of new therapies.

The specific objectives of the centre are to:

- **Generate new knowledge** on the prevalence and burden of severe asthma in Australia
- **Design and validate tools and programmes** to more effectively manage severe asthma in the clinic
- Test new management strategies that combine **multidisciplinary team** management with **personalised diagnostic testing**
- Inform **uptake and access** of new targeted therapies for severe asthma
- Translate these initiatives into practice through **policy development** and **collaboration**

People

Chief Investigators:



Prof. Peter Gibson
University of Newcastle
Hunter Medical Research Institute
John Hunter Hospital



Prof. Guy Marks
University of New South Wales
Woolcock Institute of Medical Research
Liverpool Hospital
South Western Sydney Clinical School



Prof. Vanessa McDonald
University of Newcastle
Hunter Medical Research Institute
John Hunter Hospital



Prof. Peter Wark
University of Newcastle
Hunter Medical Research Institute
John Hunter Hospital



A/Prof. Greg King
University of Sydney
Woolcock Institute of Medical Research
Royal North Shore Hospital



Prof. Bruce Thompson
Monash University
Alfred Hospital



Clin. Prof. Helen Reddel
University of Sydney
Woolcock Institute of Medical Research



Prof. John Upham
University of Queensland
Princess Alexandra Hospital



A/Prof. Lorraine Smith
University of Sydney



Clin. Prof. Alan James
University of Western Australia
Sir Charles Gairdner Hospital
Hollywood Private Hospital

Associate Investigators:

Prof. Ian Yang
A/Prof. Sinthia Bosnic-Anticevich
A/Prof. Kerry Inder
Prof. Frank Thien

Prof. Paul Reynolds
Prof. Christopher Doran
A/Prof. Celeste Porsbjerg

Prof. Nicholas Zwar
Prof. Sandra Hodge
Dr. Anne Vertigan

Post Doctoral Researchers:

Dr. Michael Fricker (University of Newcastle)
Dr. Vanessa Clark (University of Newcastle)
Dr. Tong Gong (University of Sydney)

PhD Scholars:

Daniela Eassey (University of Sydney)
Jeeva Sanjeevan (Monash University)
Bilal Malik (University of Newcastle)
Sai Praneeth Narla (University of Queensland)
Natalie Niessen (University of Newcastle)
Getachew Mulu (University of Newcastle)

Affiliated Researchers:

Laura Cordova Rivera (University of Newcastle)
Katrina Tonga (Woolcock Institute)
Catherine Farrow (Woolcock Institute)

Support Staff:

Dr. Steven Maltby
Mrs. Deborah Hall

BUILDING COLLABORATION:

The development of new knowledge, patient management strategies and effective implementation requires effective teamwork and collaboration. Our Centre's investigators have a long track record of collaborative research, integrating research findings and developing strategies for future research.

Highlights

Training the next generation

The Centre of Excellence has recruited PhD scholars and post-doctoral fellows, as well as affiliated trainees. Further PhD students and post-doctoral fellows will be joining the Centre.

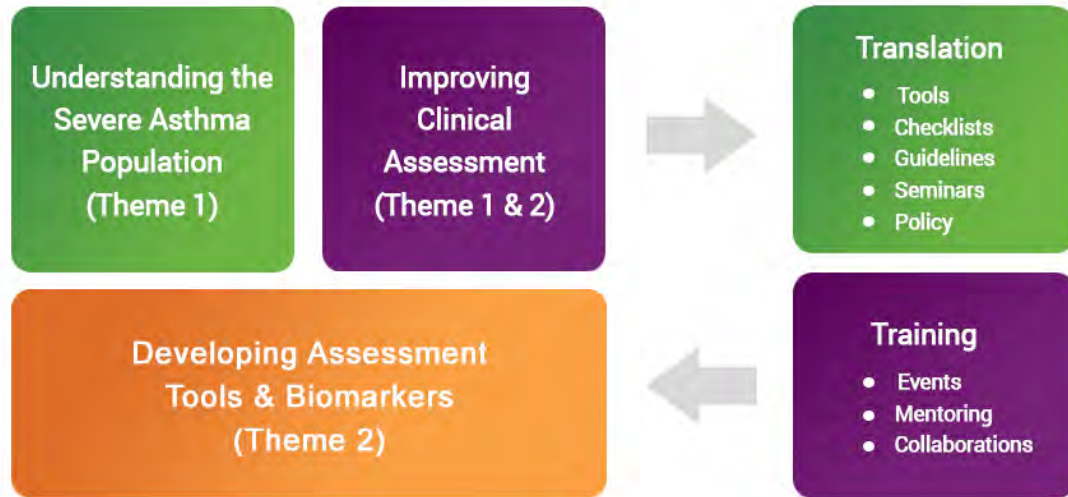
We have implemented an innovative and engaging training programme, with the goal of building the next generation of severe asthma clinical researchers. Our scholars are supported in developing new research ideas and have access to seed funding to help generate pilot data and to further develop their research careers. Scholars are actively involved with the severe asthma research community, this is facilitated within our Annual Scientific Meeting, through educational activities and within the mentor programme. To support our scholars' research training and career development, we have developed a number of programmes, including career development sessions and a monthly severe asthma journal club. Further, we launched a trainee-mentoring programme in October 2016, where trainees are connected with a chief investigator and encouraged to discuss their research progress, career development and future directions.

Meet Some of Our Researchers!

	<p>Michael Fricker will be characterising existing and identifying new biomarkers to inform severe asthma diagnosis and treatment strategies. During his PhD studies he trained as a cell biologist with expertise in cell signaling at the University of Cambridge. In subsequent post-doctoral roles he investigated the contribution of defective cell signaling to neurodegenerative disease (University of Cambridge) and lung disease (HMRI, University of Newcastle). He is a member of TSANZ, Lung Foundation Australia and the European Respiratory Society.</p>
	<p>Vanessa Clark is a behavioural researcher with an undergraduate degree in Psychology and PhD in Psychiatry. Vanessa has an interest in mental health and physical health research, in particular the interaction between mental health and chronic disease. In collaboration with other members of the CRE, Vanessa will pilot test a brief intervention targeting anxiety, depression and physical inactivity among at-risk patients with severe asthma. Outside of research she loves shopping, wine and cheese and is a part-time farmer.</p>
	<p>Daniela Eassey completed her Bachelor of Pharmacy (Hons class 1) from the University of Sydney. She is a registered pharmacist and is currently working in a community pharmacy. Daniela's research focuses on looking at people's experiences of living with severe asthma. She is at the stage of recruiting participants and will be starting the interviews shortly.</p> <p>Recently, she attended a conference in Tenerife, where she presented her systematic review and won best video presentation. You can view it here.</p>

Research & Translation

A primary focus of the Centre of Excellence is to generate new knowledge through research and translate new findings into clinical practice. Research outcomes inform translation and training activities, which in turn improve disease management.



THEME 1: Monitoring the Burden of Severe Asthma in Australia

To better understand the impact of severe asthma, we are using disease registers to determine disease prevalence and impact, performing data linkage analysis to assess patient outcomes and using qualitative methods to better understand the experience of patients with severe asthma and improve management approaches.

Research Programs Underway:

- **Developing National Indicators for Severe Asthma**
- **Phenotypic Heterogeneity and Illness Burden in Severe Asthma**
- **Concordance and Goal Setting in Severe Asthma Care**
- **Managing New Therapies in Severe Asthma**

Outputs:

- **Australian Xolair Registry (AXR):** A series of published analyses provide real-world insight into the use of Xolair / Omalizumab (anti-IgE) in the clinic, by identifying patient populations likely to respond to treatment. In a series of publications, we have reported data supporting the effectiveness and response predictors for omalizumab in the Australian population ([link](#)), as well as the effectiveness of omalizumab above the recommended dosing range ([link](#)) and the response of individuals with overlapping severe allergic asthma and chronic obstructive pulmonary disease to omalizumab therapy ([link](#)).
- **Severe Asthma – Uncovering the Reality:** Data generated in this qualitative study of the lived experience of Australians with severe asthma were presented in a series of symposia across Australia in 2016. Conducted by Juliet Foster, Helen Reddel, Michael Guo and Vanessa McDonald in partnership with Asthma Australia.

THEME 2: Initiatives To Aid Management Of Severe Asthma

Severe asthma requires a different management approach to that of mild or moderate asthma. Phenotyping provides personalised information in individual patients and allows for rational treatment approaches using new targeted therapies. We are assessing the utility of new diagnostic tests and techniques to better inform patient phenotyping and management.

Research Programs Underway:

- **Multidimensional Management of Severe Asthma**
- **Accessible Severe Asthma Biomarkers**
- **Developing a Severe Asthma Treatment Algorithm**
- **Exacerbation Risk in Severe Asthma**
- **Small Airway Physiology in Severe Asthma**

TRANSLATION

Our translation activities have focused on implementing new knowledge into practice. These activities include involvement in the development of clinical practice guidelines and knowledge transfer tools and engagement with clinicians and key stakeholders to inform our research and practice agenda.

Examples of translation activities:

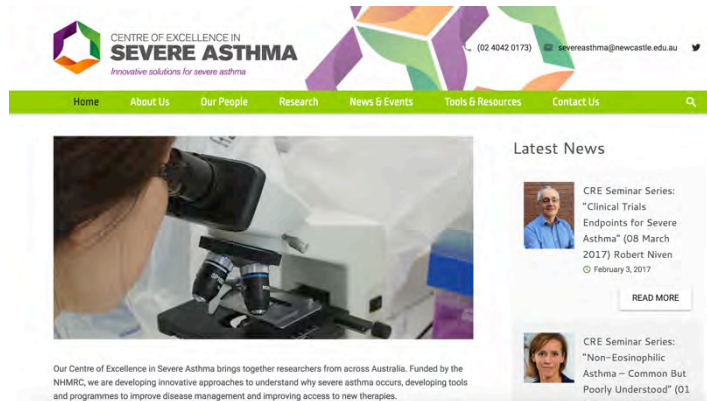
- **Roundtable Meeting:** Australian experts were convened to discuss models of care and integration of new, targeted therapies for the management of severe asthma.
- **Severe Asthma Expert Forum:** Clinical experts in severe asthma discussed new treatment and management approaches for severe asthma, focussed on how they treat patients and what evidence is required to inform management.
- **How to Treat (Australian Doctor):** The How-to-Treat Series provides practical insights to a clinician audience, to inform practice with evidence-based approaches and updates on treatment options.
 - **Publication:** How to Treat Severe Asthma Part 1 – Diagnosis & Part 2 – Management (2016) Maltby S, Gibson PG, Mattes J, McDonald VM.
- **Seeking Innovative Solutions in Severe Asthma:** A review series edited by CRE investigators in *Respirology*, featuring reviews of aspects relevant to severe asthma.
 - **Publications:**
 - Severe Asthma: Can We Fix It? (2017) McDonald VM, Maltby, S., Gibson, PG. [Respirology](#)
 - Severe Asthma – Current Management, Targeted Therapies and Future Direction – A Roundtable Report (2017) McDonald VM, Maltby S, Reddel HK, King GG, Wark PAB, Smith L, Upham JW, James AL, Marks GB, Gibson PG. [Respirology](#)
 - Can Biomarkers Help us Hit Targets in Difficult-to-Treat Asthma? (2017) Fricker, M, Heaney LG, Upham JW. [Respirology](#).
- **Expert Reviews:** Provide up-to-date insight into best practices for patient treatment and management in the severe asthma clinic.
 - **Example Publications:**
 - Targeted Therapeutics for Severe Refractory Asthma: Monoclonal Antibodies (2016) Grainge C, Maltby S, Gibson PG, Wark PAB, McDonald VM. [Expert Reviews in Clinical Pharmacology](#)
 - Diagnosis and Investigation in the Severe Asthma Clinic (2016) Wark PAB, Hew M, Maltby S, McDonald VM, Gibson PG. [Expert Reviews in Respiratory Medicine](#)
 - Management of Severe Asthma: Targeting the Airways, Comorbidities and Risk Factors (2017) Gibson, PG, McDonald VM. *In press*.
- **International Guideline Development**
- **Resources:** Available on our [website](#).
 - **Mepolizumab / Omalizumab Clinical Recommendations:** An overview of each monoclonal treatment. These documents can be integrated with local requirements, to inform implementation.
 - **Severe Asthma Assessment Checklist:** Provides a practical structure to inform the diagnosis and characterisation of severe asthma in the clinic.

Online Content:

We officially launched our website at the Thoracic Society of Australia and New Zealand (TSANZ) Annual Scientific Meeting in Perth, on 05 April 2016.

www.severeasthma.org.au

The website provides useful resources relating to severe asthma, for a range of audiences. If you are interested in hearing more about our activities, please sign up for our newsletter, at the bottom of our homepage.



Topics Include:

- News
- Events
- Recorded Seminars
- Toolkits
- Educational Materials
- Publications

Additional content is currently under development for:

- **Individuals With Severe Asthma And Their Families:** Informative summaries about severe asthma, available treatment options and tests and useful links.

Website Metrics (to 05 January 2017)

Mailing List Subscribers	Total Website Users	Total Page Visits
70	2050	6094

You can also follow us on Twitter @SevereAsthmaCRE

Toolkits and Resources

We are working toward developing a clinician toolkit, algorithms and checklists to help with severe asthma diagnosis, management and treatments, which will be made available on our website (www.severeasthma.org.au/tools-resources/toolkits/)

Current Resources Available Include:

- Clinical Recommendations For The Use Of Omalizumab In Severe Asthma
- Clinical Recommendations For The Use Of Mepolizumab In Severe Asthma
- Severe Asthma Assessment Checklist
- Newcastle Laryngeal Hypersensitivity Questionnaire

Webinar Presentations

The Centre regularly hosts national and international experts for seminars on topics related to severe asthma. Whenever possible, these seminars are recorded and made available on our website (www.severeasthma.org.au/tools-resources/past-webinars/).

Highlighted Recorded Webinars Available:



Stratified Medicine in Severe Asthma

Prof. Liam Heaney. This presentation focuses on clinical assessment in difficult-to-treat asthma and mechanisms involved in severe disease, including the identification and management of poor adherence to therapy and development of novel biomarkers and translational therapeutics in severe disease.



Biomarkers of Inhaled Corticosteroid Response in COPD

Prof. Ian Pavord. This presentation focuses on the use of biomarkers to inform disease management decisions in respiratory disease. Specifically, it provides insight on biomarkers of inhaled corticosteroid in chronic obstructive pulmonary disease (COPD), to identify patient groups that are most likely to respond to steroid therapies.



Occupational Asthma

Dr. Krystelle Godbout. Occupational asthma is asthma that is caused or worsened by exposure in the workplace environment. This session focussed on the evaluation of occupational asthma and the utility of various diagnostic modalities for the diagnosis of sensitiser-induced occupational asthma.



Living With Severe Asthma

Prof. Helen Reddel & A/Prof. Lorraine Smith. This presentation provides insights into individuals' experience of living with severe refractory asthma and how it impacts on their lives. The study was supported by Asthma Australia.



Thunderstorm Asthma

Prof. Guy Marks. This webinar was in response to the thunderstorm that hit Melbourne during the afternoon of 21st November 2016, which led to an acute spike in asthma symptoms for many people. This tragically resulted in the loss of eight lives. On behalf of the Centre of Excellence in Severe Asthma we offer our sincere condolences to the families who lost loved ones. In this seminar, Guy Marks provides insight into what causes thunderstorm asthma and treatment and management strategies to improve patient outcomes.



Monoclonal Antibody Therapy and Severe Asthma

Prof. Peter Wark. Monoclonal antibodies have emerged as new therapeutic options for the treatment of severe, treatment-refractory asthma. This presentation focusses on currently approved therapies and treatments in development. It also provides insights into the use of these therapies in the clinic.

Webinar Metrics (to 05 January 2017)

Total Recordings	Total Number of Views	Total Watch-Time (Minutes)
9	529	8327

Highlighted Events

Events and seminars are regularly hosted and form an integral part of our training programme and promote collaboration. We post regular updates about upcoming events, including face-to-face meetings and seminars, and live webinars on our website (www.severeasthma.org.au).



Official Launch Event (21st October 2015, HMRI, Newcastle)

Our official launch featured presentations by A/Prof. Geraint Rogers, Prof. Vanessa McDonald and Prof. Guy Marks. A/Prof. Lorraine Smith also facilitated an excellent discussion with four consumers who live with severe asthma, highlighting the impact of disease on their lives and promising results from new treatments.



Roundtable Meetings (3rd December 2015, Woolcock Institute)

A roundtable meetings of Australian experts from academia, primary & tertiary healthcare, health policy and biopharma was convened. Areas of discussion were 1) models of care and 2) integration of new targeted therapies for the management of patients with severe asthma.

A summary of these discussions was recently published in [Respirology](#)



Special Interest Group at TSANZ (5th April 2016, Perth)

We hosted a symposium at the 2016 TSANZ Annual Scientific Meeting titled “**Towards Innovative Solutions for Severe Asthma**”, which featured A/Prof. Mark Hew, Clinical A/Prof. Richard Loh, Prof. Jo Douglass and international expert Professor Liam Heaney.



Annual Research Meeting (19th October 2016, Newcastle)

Our annual research meeting was held at the HMRI in Newcastle. It included presentations by our funded trainees, a career development workshop on “**Getting Published**” led by Prof. Peter Gibson and a webinar by Prof. Helen Reddel on the “**Living With Severe Asthma Study**”. A recording of these seminar is available on our [website](#).



Dr. Robert Niven (University of Manchester) - March 2017

Dr. Niven leads one of 4 centres developing the Severe Asthma National Database Programme in the UK. The CRE hosted his international visit, which included presentations in Sydney, Newcastle, Brisbane, Melbourne and Perth. An online webinar recording is available on our [website](#).



TSANZ Annual Conference 2017 (25th March 2017, Canberra)

We will host a symposium at the 2017 [TSANZ Annual Scientific Meeting](#) titled “**Pathophysiology of Severe Asthma**”, featuring presentations on biopsy, lung histology, animal models and cryobiopsy techniques, in severe asthma.

We are also excited to host a post-graduate workshop at the 2017 TSANZ conference. The workshop entitled “**Severe Asthma: A Clinical Focus**” will provide practical insights into the assessment of severe asthma, targeted therapies, disease registries and case studies.

Funded Projects



As part of our research programme, the Centre of Excellence funds small research seed grants on topics relevant to severe asthma. The goal of this scheme is to provide pilot funding that will serve as the basis of future grant applications and to facilitate translation and implementation of existing findings.

Round 1 (commenced mid-2015)

- **Sinthia Bosnic-Anticevich:** Severe asthma: identifying patterns of medication taking behavior in primary care
- **Phan Nguyen:** The Mechanism of Action of Bronchial Thermoplasty in Asthma
- **Lorraine Smith / Helen Reddel:** A systematic review and qualitative analysis of patient experiences of severe asthma.
- **Peter Wark:** Inflammation based management of severe asthma: utility of blood eosinophils
- **Peter Wark:** How oxidative stress makes severe asthmatics susceptible to infection with Rhinovirus

Round 2 (commenced January 2016)

- **Katherine Baines:** A sputum gene expression signature of 6 biomarkers can predict azithromycin treatment responsiveness and future frequent exacerbations in severe asthma
- **Claude Farah:** Understanding the effects of bronchial thermoplasty in severe asthma: a pilot study
- **Alan James:** Heterogeneity of airway remodelling in severe asthma
- **Vanessa McDonald:** Development and validation of the first patient-reported outcome measure (PROM) for severe asthma patients
- **John Upham:** Aberrant immune responses to viruses in severe asthma: what role does IL-33 play?
- **Jodie Simpson:** The impact of azithromycin therapy on the airway microbiome in severe asthma
- **Cindy Thamrin:** Home monitoring of lung function using forced oscillations in severe asthma: a prospective, proof-of-concept study

Publications

Research published by Centre of Excellence in Severe Asthma investigators is highlighted below, focused on publications that are directly relevant to severe asthma. Chief Investigators are indicated in **bold**, staff and associate investigators are underlined.

2016

1. Wright TK, **Gibson PG**, Simpson JL, **McDonald VM**, Wood LG, Baines KJ (2016) Neutrophil extracellular traps are associated with inflammation in chronic airway disease. *Respirology* 21: 467-475.
2. **Wark PAB**, Hew M, Maltby S, **McDonald VM**, **Gibson PG** (2016) Diagnosis and investigation in the severe asthma clinic. *Expert Review of Respiratory Medicine* 10: 491-503.
3. **Wark P**, Frith P (2016) Asthma, COPD and when they coexist. *Medicine Today* 17: 16-24.
4. Wang G, Baines KJ, Fu JJ, Wood LG, Simpson JL, **McDonald VM**, Cowan DC, Taylor DR, Cowan JO, **Gibson PG** (2016) Sputum mast cell subtypes relate to eosinophilia and corticosteroid response in asthma. *European Respiratory Journal* 47: 1123-1133.
5. **Upham JW**, Sly PD (2016) Vitamin D in asthma: Is the golden bullet losing its luster? *American Journal of Respiratory and Critical Care Medicine* 193: 598-600.
6. Tay H, **Wark PAB**, Bartlett NW (2016) Advances in the treatment of virus-induced asthma. *Expert Review of Respiratory Medicine* 10: 629-641.
7. Sin DD, Miravitlles M, Mannino DM, Soriano JB, Price D, Celli BR, Leung JM, Nakano Y, Park HY, **Wark PA**, Wechsler ME (2016) What is asthma-COPD overlap syndrome? Towards a consensus definition from a round table discussion. *Eur Respir J* 48: 664-673.
8. Simpson JL, Yang IA, **Upham JW**, Reynolds PN, Hodge S, **James AL**, Jenkins C, Peters MJ, Jia G, Holweg CT, **Gibson PG** (2016) Periostin levels and eosinophilic inflammation in poorly-controlled asthma. *BMC Pulm Med* 16: 67.
9. Simpson JL, Daly J, Baines KJ, Yang IA, **Upham JW**, Reynolds PN, Hodge S, **James AL**, Hugenholtz P, Willner D, **Gibson PG** (2016) Airway dysbiosis: Haemophilus influenza and Tropheryma in poorly controlled asthma. *European Respiratory Journal* 47: 792-800.
10. Scott HA, **Gibson PG**, Garg ML, **Upham JW**, Wood LG (2016) Sex hormones and systemic inflammation are modulators of the obese-asthma phenotype. *Allergy: European Journal of Allergy and Clinical Immunology* 71: 1037-1047.
11. Sarnowski C, Sugier PE, Granell R, Jarvis D, Dizier MH, Ege M, Imboden M, Laprise C, Khusnutdinova EK, Freidin MB, Cookson WOC, Moffatt M, Lathrop M, Siroux V, Ogorodova LM, Karunas AS, **James A**, Probst-Hensch NM, von Mutius E, Pin I, Kogevinas M, Henderson AJ, Demenais F, Bouzigon E (2016) Identification of a new locus at 16q12 associated with time to asthma onset. *Journal of Allergy and Clinical Immunology*.
12. Revez JA, Matheson MC, Hui J, Baltic S, **James A**, **Upham JW**, Dharmage S, Thompson PJ, Martin NG, Hopper JL, Ferreira MAR (2016) Identification of STOML2 as a putative novel asthma risk gene associated with IL6R. *Allergy: European Journal of Allergy and Clinical Immunology* 71: 1020-1030.
13. Pilcher J, Patel M, **Reddel HK**, Pritchard A, Black P, Shaw D, Holt S, Weatherall M, Beasley R (2016) Effect of smoking status on the efficacy of the SMART regimen in high risk asthma. *Respirology* 21: 858-866.
14. Moheimani F, Hsu AC, Reid AT, Williams T, Kicic A, Stick SM, Hansbro PM, **Wark PA**, Knight DA (2016) The genetic and epigenetic landscapes of the epithelium in asthma. *Respir Res* 17: 119.
15. Maltby S, **Gibson PG**, Mattes J, **McDonald VM** (2016) How to Treat Severe Asthma: Part 1: Diagnosis. *Australian Doctor*.
16. Maltby S, **Gibson PG**, Mattes J, **McDonald VM** (2016) How to Treat Severe Asthma: Part 2: Management. *Australian Doctor*.
17. Lynch JP, Werder RB, Simpson J, Loh Z, Zhang V, Haque A, Spann K, Sly PD, Mazzone SB, **Upham JW**, Phipps S (2016) Aeroallergen-induced IL-33 predisposes to respiratory virus-induced asthma by dampening antiviral immunity. *Journal of Allergy and Clinical Immunology*.
18. Loymans RJB, Honkoop PJ, Termeer EH, Snoeck-Stroband JB, Assendelft WJJ, Schermer TRJ,

- Chung KF, Sousa AR, Sterk PJ, **Reddel HK**, Sont JK, Ter Riet G (2016) Identifying patients at risk for severe exacerbations of asthma: Development and external validation of a multivariable prediction model. *Thorax* 71: 838-846.
19. Li Q, Baines KJ, **Gibson PG**, Wood LG (2016) Changes in Expression of Genes Regulating Airway Inflammation Following a High-Fat Mixed Meal in Asthmatics. *Nutrients* 8.
20. **King GG**, Thamrin C (2016) Complex lung function in severe asthma: Seeing is believing. *European Respiratory Journal* 48: 294-296.
21. Hodge S, Hodge G, Simpson JL, Yang IA, **Upham J**, **James A**, **Gibson PG**, Reynolds PN, Group ASR (2016) Blood cytotoxic/inflammatory mediators in non-eosinophilic asthma. *Clin Exp Allergy* 46: 60-70.
22. Hew M, Gillman A, Sutherland M, **Wark P**, Bowden J, Guo M, **Reddel HK**, Jenkins C, **Marks GB**, Thien F, Rimmer J, Katsoulotos GP, Cook M, Yang I, Katelaris C, Bowler S, Langton D, Wright C, Bint M, Yozghatlian V, Burgess S, Sivakumaran P, Yan KY, Kritikos V, Peters M, Baraket M, Aminazad A, Robinson P, Jaffe A, Powell H, **Upham JW**, **McDonald VM**, **Gibson PG** (2016) Real-life effectiveness of omalizumab in severe allergic asthma above the recommended dosing range criteria. *Clin Exp Allergy* 46: 1407-1415.
23. Grainge CL, Maltby S, **Gibson PG**, **Wark PAB**, **McDonald VM** (2016) Targeted therapeutics for severe refractory asthma: Monoclonal antibodies. *Expert Review of Clinical Pharmacology* 9: 927-941.
24. **Gibson PG**, **Reddel H**, **McDonald VM**, **Marks G**, Jenkins C, Gillman A, **Upham J**, Sutherland M, Rimmer J, Thien F, Katsoulotos GP, Cook M, Yang I, Katelaris C, Bowler S, Langton D, Robinson P, Wright C, Yozghatlian V, Burgess S, Sivakumaran P, Jaffe A, Bowden J, **Wark PA**, Yan KY, Kritikos V, Peters M, Hew M, Aminazad A, Bint M, Guo M (2016) Effectiveness and response predictors of omalizumab in a severe allergic asthma population with a high prevalence of comorbidities: the Australian Xolair Registry. *Intern Med J* 46: 1054-1062.
25. **Gibson PG**, **McDonald VM** (2016) Phenotyping Asthma and COPD. *Barcelona Respiratory Network Reviews* 2: 239-252.
26. Foster JM, **Smith L**, Usherwood T, Sawyer SM, **Reddel HK** (2016) General practitioner-delivered adherence counseling in asthma: Feasibility and usefulness of skills, training and support tools. *Journal of Asthma* 53: 311-320.
27. Ferreira MA, Jansen R, Willemsen G, Penninx B, Bain LM, Vicente CT, Revez JA, Matheson MC, Hui J, Tung JY, Baltic S, Le Souef P, Montgomery GW, Martin NG, Robertson CF, **James A**, Thompson PJ, Boomsma DI, Hopper JL, Hinds DA, Werder RB, Phipps S, Australian Asthma Genetics Consortium C (2016) Gene-based analysis of regulatory variants identifies 4 putative novel asthma risk genes related to nucleotide synthesis and signaling. *J Allergy Clin Immunol. In press*.
28. Blake TL, Chang AB, Petsky HL, Rodwell LT, Brown MG, Hill DC, **Thompson B**, McElrea MS (2016) Spirometry reference values in Indigenous Australians: a systematic review. *Med J Aust* 205: 35-40.
29. Basheti IA, Obeidat NM, Ammari WG, **Reddel HK** (2016) Associations between inhaler technique and asthma control among asthma patients using pressurised MDIs and DPIs. *International Journal of Tuberculosis and Lung Disease* 20: 689-695.
30. Basheti IA, Hamadi SA, **Reddel HK** (2016) Inter-professional education unveiling significant association between asthma knowledge and inhaler technique. *Pharmacy Practice* 14.
31. Agusti A, Bel E, Thomas M, Vogelmeier C, Brusselle G, Holgate S, Humbert M, Jones P, **Gibson PG**, Vestbo J, Beasley R, Pavord ID (2016) Treatable traits: toward precision medicine of chronic airway diseases. *Eur Respir J* 47: 410-419.

2015:

1. **Wark PAB**, **McDonald VM**, **Gibson PG** (2015) Adjusting prednisone using blood eosinophils reduces exacerbations and improves asthma control in difficult patients with asthma. *Respirology* 20: 1282-1284.
2. Vos T, **Marks GB**, *et al.* (2015) Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 386: 743-800.
3. **Reddel HK**, Sawyer SM, Everett PW, Flood PV, Peters MJ (2015) Asthma control in Australia:

- A cross-sectional web-based survey in a nationally representative population. *Medical Journal of Australia* 202: 492-498.
4. **Reddel HK**, Levy ML (2015) The GINA asthma strategy report: What's new for primary care? *npj Primary Care Respiratory Medicine* 25.
 5. **Reddel HK**, Bateman ED, Becker A, Boulet LP, Cruz AA, Drazen JM, Haahtela T, Hurd SS, Inoue H, De Jongste JC, Lemanske RF, Jr., Levy ML, O'Byrne PM, Paggiaro P, Pedersen SE, Pizzichini E, Soto-Quiroz M, Szeffler SJ, Wong GWK, FitzGerald JM (2015) A summary of the new GINA strategy: A roadmap to asthma control. *European Respiratory Journal* 46: 622-639.
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Contact Information

Would you like to get involved with the Centre of Excellence in Severe Asthma? We would be happy to speak with you. The best way to contact us is via email: please include a brief description of your enquiry and we will get back to you ASAP.

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Our website (<http://www.severeasthma.org.au>) is the best source of information on the Centre of Excellence in Severe Asthma and is regularly updated with news and upcoming events. If you would like to receive updates on events, useful resources and research please join our mailing list, at the bottom of our homepage, and follow us on Twitter [@SevereAsthmaCRE](https://twitter.com/SevereAsthmaCRE).

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