

## Research activity

Here is a list of all the research activity pages:

### Generic List

[A \(/research/activity/health-pop/healthcare-evaluation-and-methodology/test-and-biomarker-evaluation/index.aspx?stylemediatype=print\)](#)

#### **T Cell Development and Function in Health and Disease (/research/activity/mds/domains/immunity-infection/immunology/T-cell-development-and-function-in-health-and-dise/index.aspx)**

We investigate the cellular and molecular mechanisms that generate a tolerant T cell repertoire, but also the signals that foster the development of effector and memory CD4 T cell responses. Particular interests are: (1) The development and function of thymic epithelial environments (2) The role of lymphoid tissue inducer cells in tolerance and the development of CD4 memory (3) The molecular regulation of CD4 effector and memory T cell survival



#### **T Cell Regulation in Tolerance and Autoimmunity (/research/activity/mds/domains/immunity-infection/immunology/T-cell-regulation-in-tolerance-and-autoimmunity/index.aspx)**

Our groups have a major interest in the biology of regulatory T cells and the understanding of T cell involvement in autoimmunity. These interests are based on distinct but highly complementary experimental approaches. 1. How the T cell proteins CD28 and CTLA-4 control the balance between tolerance and immunity. We carry out detailed studies into the molecular basis of CD28 and CTLA-4 function with a view to understanding how these pathways influence human T cell responses. In addition the Sansom lab is interested in the role of environmental factors (such as vitamin D) in shaping T cell differentiation. These interests are applied in the context of autoimmune diseases, in particular rheumatoid arthritis in collaboration with Dr Karim Raza. 2. We are seeking to understand the pathogenesis of T cell driven autoimmune diseases, in particular type 1 diabetes. The Lab uses a TCR transgenic mouse model of diabetes to probe the pathways that control CD4 T cell activation, differentiation and regulation. Our primary interests relate to T cell costimulation (specifically the CD28/CTLA-4 pathway) and the homeostasis and function of regulatory T cells in vivo. The impact of cytokines such as interleukin-21 on T cell regulation and the contribution of different B cell subsets to autoimmune diabetes are also under study. Both the Sansom and Walker Labs collaborate closely with Dr Parth Narendran in translating our understanding of T cell responses into human type 1 diabetes.



#### **T cell-based therapies for cancer (/research/activity/mds/domains/Cancer/cell-immune-gene-therapy/t-cell-therapies/index.aspx)**

Research group details and overview for the t cell-based therapies for cancer group, run by Dr Steve P. Lee at the University of Birmingham.



#### **TABLET trial (/research/activity/mds/trials/bctu/trials/womens/tablet/index.aspx)**



#### **Tace-2 trial (/research/activity/mds/trials/crctu/trials/tace2/index.aspx)**



#### **TAROS 2014 - Towards Autonomous Robotic Systems (/research/activity/computer-science/taros/index.aspx)**



#### **Test and Biomarker Evaluation (/research/activity/mds/domains/health-pop/healthcare-evaluation-and-methodology/test-and-biomarker-evaluation/index.aspx)**

This multidisciplinary research group was founded in 2006 by Jon Deeks. The research interests of the group focus on the development and investigation of methods for evaluating medical tests in healthcare, including both primary and secondary research. The group focuses on the evaluation of medical tests and biomarkers. Major activities include undertaking methodological research aiming to identify and validate the best ways of designing, analysing and reporting studies evaluating medical tests used for diagnostic, prognostic, monitoring purposes. The scope of the group includes both methods for primary research, systematic reviews and meta-analyses, and also includes the evaluation of predictive tests used for stratified medicine. Many of the methodology activities are linked to supporting primary research studies evaluating the accuracy and effectiveness of tests in clinical practice, currently underway in collaborations with clinical research groups and the trials units both in the College and with other UK based groups. The group has organised two international symposia on Methodology for Evaluating Medical Tests and Biomarkers hosted at the University of Birmingham. This group is also the international base of the Cochrane Collaboration's diagnostic test accuracy Reviews, which provides training and support in review methods for Cochrane Review Groups based in the UK. The Cochrane Library is recognised as the best resource for evidence on the effectiveness of health interventions, and has ambitions to publish similar reviews evaluating the accuracy of diagnostic tests.



#### **The ACCURE UK trial (/research/activity/mds/trials/bctu/trials/coloproctology/accure/index.aspx)**

ACCURE-UK is a trial in the Birmingham Clinical Trials Unit



#### **The Birmingham Centre for Nuclear Education and Research (/research/activity/nuclear/index.aspx)**



#### **The Birmingham Centre for Nuclear Education and Research (http://www.birmingham.ac.uk/research/activity/nuclear/index.aspx)**



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