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**Publication News**

Y. Shweikh, F. Ko, M.P.Y. Chan, P. J. Patel, Z. Muthy, P.T. Khaw, J. Yip, N. Strouthidis, and P.J. Foster. "Measures of socioeconomic status and self-reported glaucoma in the UK Biobank cohort." Eye (2015).

[PDF downloadable from consortium website.](#)

J. A. Guggenheim & C. Williams for the UK Biobank Eye and Vision Consortium. "Role of Educational Exposure in the Association between Myopia and Birth Order." (Accepted for publication in JAMA Ophthalmology - In press)

(Non-Consortium): P.Dawes, K.J. Cruickshanks, D.R. Moore, H. Fortnum, M. Edmondson-Jones, A. McCormack, K.J. Munro. "The Effect of Prenatal and Childhood Development on Hearing, Vision and Cognition in Adulthood." PloS one 10, no. 8 (2015): e0136590. [PDF](#)

**Submitted manuscripts:**

**Associations with intraocular pressure in a large cohort: the UK Biobank.** Michelle P Y Chan; Carlota M Grossi; Anthony P Khawaja; Jennifer L Y Yip; Kay-Tee Khaw; Praveen J Patel; Peng T Khaw; James E Morgan; Stephen A Vernon; Paul J Foster on behalf of the UK Biobank Eye and Vision Consortium to **Ophthalmology**



**First tranche of UK Biobank imaging data to be released soon**

Earlier this month, UK Biobank announced the release of imaging data for use by researchers from the first few thousand imaged participants, is scheduled for October 2015.

This initial release will include not only the imaging data from all of these modalities, but also a set of derived measures (such as brain volumes, fat distribution and bone density, and carotid intimal media thickness) from the different imaging modalities.

UK Biobank has been undertaking a feasibility study in which 5,000 participants have been imaged over the course of the past year. The project has the intention of extending this to 100,000 participants over the next 6 years, subject to funding being approved. More information about the imaging project can be found here: <http://imaging.ukbiobank.ac.uk/>

The following types of imaging have been undertaken:

- Brain MRI scan - information about the

structure and function of the brain, such as which parts of the brain are important for carrying out certain tasks and how different parts of the brain are connected.

- Heart and body MRI scan - information on the size of the heart chambers and blood vessels, and visceral and subcutaneous adipose tissue, pelvic muscle volume and muscle fat content, liver and pancreatic fat, and liver iron and liver inflammation factor.
- Carotid artery ultrasound scan – information on carotid intra-medial thickness.
- Dual-Energy X-ray Absorptiometry (DXA) scan - a precise measure of bone content and density, including detailed pictures of the spine, hips, knees and joints and measures of total fat and lean mass, which will complement the more detailed measures of body composition provided by the abdominal MRI.

Applications for access to these imaging data can be made now in advance of the initial data release, with the expectation that data will be available in October. Applications can subsequently be extended to cover additional imaging data as they become available.

Researchers will also be able to obtain any other available phenotypic and genotypic data that are required on these participants.

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### *Nutrition & Eye Group meeting summary*

Following the announcement of the formation of the Nutrition & Eye group in the last newsletter, the group recently met to discuss how to proceed with research in this area. They have also made contact with the nutritional epidemiologists working on UKBB data at University of Oxford, who have accepted an invitation to collaborate.

A summary of the background in this area was provided and emerging issues in nutrition was

### **Next Annual Consortium meeting**

The next annual UK Biobank Eye & Vision Consortium meeting will be held on:

**Tuesday 2nd February 2016**

at:

**Wellcome Collection, Euston Road,  
London**

Further details including an agenda will be sent to all consortium members closer to the time.

Suggestions for agenda items are welcomed.

discussed. UKBB already has anthropometry measures available, but all biomarkers will not be available until Q2 2016. The nutritional epidemiologists working with UKBB data in Oxford have been able to classify participants by fibre intake using data from the UKBB dietary questionnaire. It was suggested by Prof Woodside that data from UKBB will allow analysis of nutrition intake, food group intake, body composition, nutritional status, gene/environment interactions, lifestyle behaviours and dietary pattern analysis a priori and a posteriori.

It was also proposed for research to be conducted in categories of disease, and to focus primarily on AMD and DR, followed by glaucoma and cataract.

Dr Hogg presented the literature around nutrition and AMD, which showed that green leafy veg, zinc, fatty acids, fish oils and vitamins A and D are protective of the disease.

The literature also highlights an interest in the area of DR and diet. There is strong epidemiological evidence of association between lipids and DMO but there is no support from

## New Members

We would like to welcome and introduce new members to the E&V consortium:

**Prof Jayne Woodside - Professor of Human Nutrition, Queen's University, Belfast**

**Ms Marta Ugarte - Consultant Ophthalmologist - Moorfields Eye Hospital, London**

**Dr Caroline Thuang - Honorary Senior Research Associate, UCL Institute of Ophthalmology**

**Mr Srinivas Govardhan - Consultant Ophthalmologist, University of Southampton**

**Dr Catey Bunce - Principal Statistician, Moorfields Eye Hospital, London**

lipid lowering RCTs. The group felt that the magnitude of UKBB data would provide strong power to detect these associations, if any.

Anthony Khawaja highlighted that the aim of research into glaucoma and diet is to be able to detect subtle differences between people's diet and risk of disease. The evidence concerning glaucoma and diet seems to show that intake of green collards, carrots and kale are protective, while IOP is known to decrease with alcohol consumption in a dose dependant manner.

The group now plan to identify shared areas of interest and develop potential work packages, before submitting a full application request for data from UK Biobank and applying for funding to facilitate the research.

Developments from this research group will be presented at the next annual consortium meeting and the full minutes of this meeting will be sent to all consortium members in due course.

## *UKBB data showcase: First new dataset returned*

Dr Cathy Williams and Dr Jeremy Guggenheim of the Refractive Error research group have recently returned data obtained from the analysis of lifestyle choices that minimise the risk of developing myopia conducted by the Hong Kong Polytechnic University.

Standard epidemiological methods were utilised to determine whether previously identified risk factors associated with myopia in the Avon Longitudinal Study of Parents and Children (ALSPAC) cohort of children are replicated in the UK BioBank adult participants (where the correspondence of available data permit such replication). Additional analysis was carried out to test whether febrile illnesses during childhood increase the risk of myopia.

Dr Jeremy Guggenheim and Dr Cathy Williams provided a brief summary of their findings from their soon-to-be published paper "Role of Educational Exposure in the Association between Myopia and Birth Order":

"We followed-up a prior study of young-adult cohorts that had found an approximately 10% increased risk of myopia in first-born individuals compared to those with a later birth order. In the Biobank participants, who were born 1-2 generations earlier than those studied previously, the same 10% increased risk of myopia in first-born versus later-born participants was evident, suggesting that recent changes in lifestyle were not to blame. Interestingly, birth order was also a risk factor for high myopia.

One potential reason for the observed association between birth order and myopia is the tendency for parents to invest slightly more of their time and energy in the education of children with an earlier birth order; for instance, first-born children tend to attain higher

educational qualifications than those with later birth orders. Thus, the increased risk of myopia in first-born children might arise via increased close work if, on average, such individuals have greater educational “exposure” than later-born individuals. In support of this hypothesis, statistical adjustment for either years in full-time education, or highest educational qualification, partially attenuated the increased risk of myopia in first-born versus later-born Biobank participants. Therefore, greater exposure to education potentially explains some, though not all, of the association between birth order and myopia.”

### Contact details

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Miss Zaynah Muthy

[z.muthy@ucl.ac.uk](mailto:z.muthy@ucl.ac.uk)

020 7608 6900