

The Disconnected Mind

Unlocking secrets of healthy mental ageing

The Disconnected Mind aims to understand how changes in the brain's white matter – its connectivity – contribute to age-related cognitive decline in humans.

Newsletter 67: September 2024

Welcome to the Autumn edition of the Disconnected Mind Newsletter! Catch up on the news from the Lothian Birth Cohorts team between June and August, including staff updates, our latest research and publications, and scientific and public engagement events.

News and updates

Two decades of Age UK funding ends

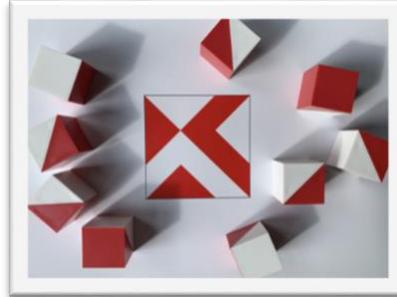


[The Disconnected Mind project](#)

The Lothian Birth Cohort 1936 study has been funded by Age UK under the title of the 'Disconnected Mind' project since the study's inception in 2004. Age UK continuous funding and support have allowed the collection of one of the most informative datasets of older adults anywhere in the world and enabled world-leading science and discovery on many aspects of ageing with over 700 research papers arising from the LBC data. The findings have had a lasting impact on our understanding of ageing and have influenced the way others have approached the field. Age UK were instrumental in leading our efforts to communicate these findings to the public and increasing awareness of the things one might do to age successfully with [the Staying Sharp pages](#) and influencing policy and practice with [more than 60 policy and guidance documents](#). All of this – and more – grew from the close collaborative relationship between Disconnected Mind and Age UK teams, and our joint commitment to doing high quality science and putting it to good use. We would like to take this opportunity to offer our warmest thanks to Age UK on behalf of the entire LBC research team, past and present, for their continuous support throughout all these years. We remain extremely grateful for this rare long-term partnership and are committed to build on this excellent foundation with many more discoveries and lines of enquiry in the years to come. Thank you, Age UK!

Update on Wave 7 of the LBC1936

We are delighted to report that Wave 7 of the LBC1936 has been progressing very well. The team have tested 77 participants for cognitive appointments at the Wellcome



Trust Clinical Research Facility (WTRF) at the Western General Hospital and 46 participants have now returned for an MRI brain scan at the Edinburgh Imaging Facility at the Royal Infirmary

of Edinburgh. Dr Sarah McGrory, who joined the team as our new study coordinator in April, has now completed her training and started testing. We are thrilled to have Sarah working together with Dr Janie Corley, Sabela Mendez and Alison Pattie on the cognitive testing team!

Team updates

The LBC studies are delighted to introduce three new members of the team – Dr Charlotte Squires, Dr Josie Robertson and Katie Robertson! Welcome to the team!

Dr Charlotte Squires is a specialist registrar in Geriatric Medicine who is currently taking time out of clinical practice in order to undertake her PhD, which is jointly



funded by the ASDRC (Alzheimer Scotland Dementia Research Centre) and the Disconnected Mind Project (Age UK). She graduated from Edinburgh Medical School in 2012 with an intercalated degree in Neurosciences, and completed her early clinical training in Edinburgh, progressing to specialty

training in 2020. She has long been interested in how to translate research involving older and frail adults into routine clinical practice and policy making, having initially been attracted to the specialty for its strong ethos of social justice and advocacy. Her PhD focusses on investigating how frailty related syndromes interact and impact social care trajectories, including entry to residential care. She will be utilising the LBC1936 data and will undertake a mixed methods approach in her PhD by supplementing her Electronic Health Records research with a qualitative project investigating around how the LBC1936 experience ageing and changes to their health over time. Charlotte said: *"Having learned about the LBC studies as a medical student, I am delighted to be joining the team and working with the cohort!"*

Dr Josie Robertson is an Edinburgh Clinical Academic Track lecturer and recently starting her PhD working with both the Lothian Birth Cohorts and Generation Scotland.



She is interested in the environmental determinants of health, and her PhD project focusses on understanding the effects of air pollution on brain health using multi-omic data and health outcomes. This will include data such as epigenetics, proteomics

and diseases such as dementia and stroke. Josie has been working as an anaesthetic specialist trainee in Edinburgh since 2019, undertaking a Postgraduate certificate in Data Science for Health and Social Care in 2021. Prior to this, she completed her academic foundation training in Oxford, including a research project working on biomarkers of Amyotrophic Lateral Sclerosis. In her spare time, Josie can be found playing the violin and hiking. Josie said: *"I am so excited to be working with the LBC cohort and team as part of my PhD and I am looking forward to expanding my knowledge of the latest in dementia research!"*

Katie Robertson has joined the LBC team on a Master's project funded by Alzheimer Scotland through their Student Research Programme. Driven by her strong



interest in traumatic brain injuries (TBI) and their impact on healthy ageing, Katie's project will focus on identifying the neurostructural underpinnings of the TBI-dementia association. Using the large UK Biobank dataset, this project should provide a significant impact in the

field by identifying specific populations that may be at greater risk of developing dementia in later life. This project will be conducted under the supervision of Professor Simon Cox, Dr Tom Russ and Professor Susan Shenkin at the University of Edinburgh, alongside Dr Donald Lyall at the University of Glasgow, allowing a robust and interdisciplinary research environment. Katie recently graduated with First-Class Honours in BSc Neuroscience at the University of Edinburgh where she also competes on the international stage as a swimmer-turned-rower! *"I can't wait to continue my studies with the LBC team and I'm looking forward to engaging with the Alzheimer's and dementia research communities at upcoming conferences and events throughout the year!"*

Welcome back, Dr Chloe Fawns-Ritchie!

We are delighted that Dr Chloe Fawns-Ritchie now returns to the Psychology Department as a lecturer! Chloe has close ties with the Lothian Birth Cohorts



studies: after completing her PhD in Psychology with a thesis on *Health literacy, cognitive ability, and health* under the supervision of Professor Ian Deary, she has continued to collaborate with the LBC team while she worked as the Questionnaire Officer and a Postdoctoral Researcher on the

Generation Scotland study and then as a lecturer in the Division of Psychology, School of Humanities, Social Sciences and Law at the University of Dundee between 2022 and 2024. Chloe joins the School leading a research programme focusing on associations between cognitive ageing and health, and health factors that might partly explain why some people experience faster decline in cognitive function than others, as well as exploring the impact of faster cognitive decline on managing health in older adulthood. She has a particular interest in investigating the relationship between chronic pain, pain prescribing, and cognitive ageing. Welcome back, Chloe!

Summer visit from a collaborator's lab: Maggie Clapp Sullivan meets the LBC team

Maggie Clapp Sullivan, a PhD student at the University of Texas working with Dr Elliot Tucker-Drob, a close LBC

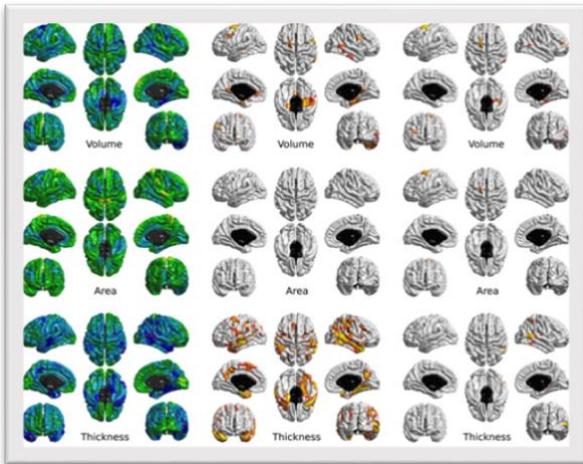


collaborator joined the Lothian Birth Cohorts for a short visit in July. Maggie is part of the doctoral program in the Individual Differences and Evolutionary Psychology at the University of Texas at Austin in 2020. After graduating from Washington University in

St. Louis in 2018 with a Bachelor of Arts degree in Psychology with honours and a minor in History, she then worked as a clinical research coordinator at the Washington University Amyotrophic Lateral Sclerosis (ALS) Center, where she helped launch the use of digital phenotyping measures in symptomatic and pre-symptomatic ALS patients. Her current research interests include examining genetic contributions to cognitive performance and the development of psychopathology. Maggie joined the team for a two-day visit, during which she met with several members of the LBC team to discuss her ongoing work on identifying distinct pathways of dementia risk factors and to find out more about current LBC projects.

Scientific Highlights

Life-course neighbourhood deprivation linked to adverse brain structure characteristics in older adults

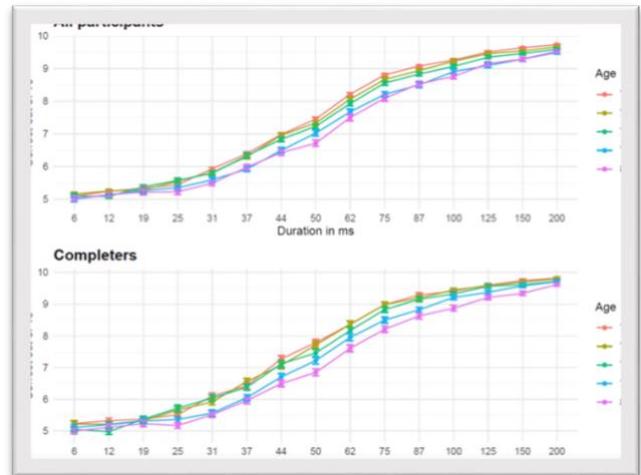


Local associations between mid- to late adulthood neighbourhood deprivation and cortical properties

Across the world people are living longer and the number of older people is steadily increasing. It is of paramount importance to find ways to create the environments that ensure everyone can have the opportunity to live a long and healthy life. Neighbourhood characteristics have been shown to influence cognitive ageing, but how neighbourhood disadvantage at different stages of the life course may be associated with brain health has remained poorly understood. Utilising the Lothian Birth Cohort 1936, the study explored the relationship between residential neighbourhood deprivation from birth to late adulthood, and global and local neuroimaging measures at age 73. Based on a total of 689 participants with at least one valid brain measure, the study found that residing in disadvantaged neighbourhoods in mid- to late adulthood was associated with smaller total brain, grey matter, and normal-appearing white matter volumes, thinner cortex, and lower general white matter fractional anisotropy. We also found some evidence on the accumulating impact of neighbourhood deprivation from birth to late adulthood on age 73 total brain and grey matter volumes. Among individuals belonging to lower social classes, the brain-neighbourhood associations were particularly strong, with the impact of neighbourhood deprivation on total brain and grey matter volumes, and general white matter fractional anisotropy accumulating across the life course. The findings suggest that living in deprived neighbourhoods across the life course, but especially in mid- to late adulthood, is associated with adverse brain morphologies, and lower social class amplifies the vulnerability.

[Baranyi, G., et al. \(2024\). Life-course neighbourhood deprivation and brain structure in older adults: the Lothian Birth Cohort 1936. *Molecular Psychiatry*.](#)

Does processing speed explain the ageing mind?: A five-wave longitudinal study of inspection time from age 70 to age 82 in the Lothian Birth Cohort 1936



Mean number of correct responses per stimulus duration in the inspection time test across LBC1936 at waves 1-5

As people age, cognitive processes such as processing speed slow down. Whether slowing down underlies age-related cognitive decline is not clear. A recent study with LBC1936 data focused on inspection time (a test of processing speed) as a possible route to understanding some of the individual differences in cognitive ageing. Inspection time (IT) is a measure of how quickly an individual can process simple visual information. The task is often used as an indicator of cognitive processing speed. It is a two-alternative, forced-choice procedure when participants are required to identify the longer of two parallel, vertical lines presented on a computer monitor for a variety of durations from 6 to 200 milliseconds. In older adults, IT tends to increase, meaning it takes them longer to process visual stimuli compared to younger individuals. The study examined how change in inspection time from age 70 to age 82 related to general cognitive ability, memory, visuospatial reasoning, processing speed, and crystallised cognitive ability. The results showed that IT and general cognitive capabilities are highly correlated in the 12-year period. While this finding supports the idea that some basic level limitation in processing information may be responsible for the human brain to slow down and become less efficient as we age, it is not sufficient to conclude that the general cognitive ageing is caused by the slowing of processing speed. The authors discuss a possibility that the decline in general cognitive ability slows speed of processing and consider that some third set of factors contributes both to age-related decline in general cognitive ability and to processing speed, including inspection time.

[Deary, I.J., et al. \(2024\). Inspection time and intelligence: A five-wave longitudinal study from age 70 to age 82 in the Lothian Birth Cohort 1936. *Intelligence*.](#)

Gardening linked to staying sharp in later life



A study led by Dr Janie Corley examined whether gardening activity is associated with better thinking skills in older age. The study focused on longitudinal cognitive data from the Lothian Birth Cohort 1921 and found that those LBC1921 participants who spent time gardening had better cognitive function in later life than those who did not. Of the 467 people tested, almost 31 per cent had never gardened, but 43 per cent regularly did. On average, the 280 who frequently or sometimes gardened showed greater lifetime improvement in cognitive ability compared with those who never gardened or rarely did so. Between the ages of 79 and 90, cognitive ability, including memory, problem solving, and word fluency, generally declined across the board, but the earlier advantage of gardeners endured. Importantly, this was the case even when accounting for a person's socio-economic status, time spent in education, childhood cognitive ability, health, and overall level of physical activity in older age. While these findings provide some of the first evidence that gardening activity in older age is associated with small, but detectable, cognitive benefits over the life-course, it is not clear that gardening directly boosts cognitive ability because factors not included in the study — such as the level of greenery in the neighbourhood or social interaction during gardening activities — could have played their part. Dr Corley said: *“Identifying lifestyle behaviours that facilitate healthy cognitive ageing is of major public interest for the prevention of cognitive decline and dementia. Gardening is a key leisure activity in late adulthood. Engaging in gardening projects, learning about plants, and general garden upkeep, involves complex cognitive processes such as memory and executive function. Consistent with the ‘use it or lose it’ framework of cognitive function, more engagement in gardening may be directly associated with a lower risk of cognitive decline.”* The study is published in the *Journal of Environmental Psychology* and has been featured in [Daily Mail](#), [The Telegraph](#), and [The Sunday Post](#).

[Corley, J. et al. \(2024\). Gardening and cognitive ageing: Longitudinal findings from the Lothian Birth Cohort of 1921. *Journal of Environmental Psychology*.](#)

Who gets to be (over) 100?: Life-course pathways to exceptional longevity in the Lothian Birth Cohort 1921

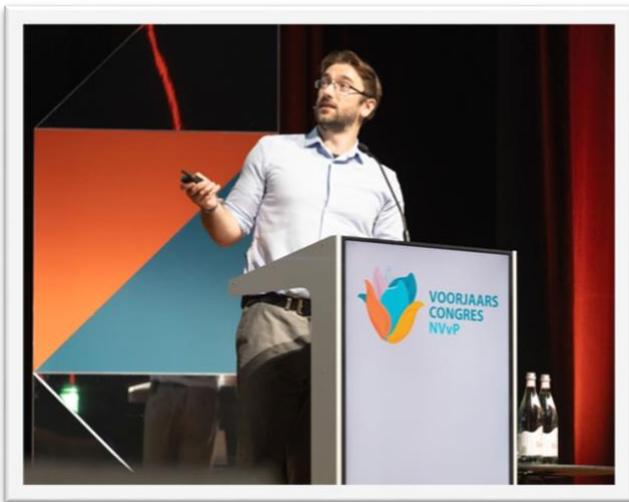


In 1921 the life expectancy at birth in Scotland was approximately 53.1 years for men and 56.4 years for women. The Lothian Birth Cohort 1921 has achieved exceptional longevity averaging 89.5 years, exceeding the average age of survival in Scotland (78.6 years) by over 10 years. When founded in 1999, the cohort included 550 participants at average age of 79 years, many of whom continued to participate in the study for many years and lived into their 80s and 90s; 16 of them celebrated their 100th birthday, three of them have reached 103 years of age, and the remaining two have birthdays in the coming months. What are their secrets to successful ageing? To explore life-course pathways to the cohort's longevity, Dr Janie Corley and her colleagues used a combination of statistical methods from epidemiological research and psychology, to examine which factors, conditions and behaviours are associated with living a greater number of years beyond age 79 when the participants joined the study. The analyses showed that those who enjoyed longer lives were more likely to be women, those with higher cognitive and physical functions and greater physical activity at age 79, and those who had lower rates of lifetime smoking and cancer. Cognitive ability emerged as the strongest unique predictor of longevity, surpassing physical function, highlighting later-life cognitive ability is an important predictor of survival in the oldest old. The study also showed that childhood conditions, such as education and early social class, continue to affect physical health up to 70 years later, and highlighted that higher emotional stability and conscientiousness foster resilient pathways toward physical, psychological and psychosocial health and wellbeing, providing evidence for the importance of personality traits on health and survival.

[Corley, J. et al. \(2024\). Life-Course Pathways to Exceptional Longevity: Evidence from the Lothian Birth Cohort of 1921. *The Journals of Gerontology: Series A*.](#)

Knowledge Exchange

Dr David Hill presents at the Netherlands Psychiatric Association



Dr Hill delivers his keynote address at the Netherlands Psychiatric Association

Dr David Hill is a statistical geneticist, and the principal investigator of the MRC funded project “From genetic sequence to phenotypic consequence: genetic and environmental links between cognitive ability, socioeconomic position, and health”. His work examines how genetic differences can influence cognitive abilities and how this can later impact differences in socioeconomic status (SES) and health outcomes. He was invited as a keynote speaker for the plenary lecture at the Annual Meeting of the Netherlands Psychiatric Association (NVvP) in Maastricht. David’s talk “Genetic and environmental links between cognitive ability, socioeconomic status and mental health” was attended by 2,000 audience members and the key message conveyed was that genetic influences on cognitive ability can also influence exposure to environmental stressors that in turn can affect our mental health. In addition, Dr Hill took part in a “Meet the Expert” session organised by the Dutch Psychiatry meeting. This session provided the opportunity for small group discussions about David’s work. These talks were accompanied by an [interview](#) by the official magazine of the Dutch Association for Psychiatry “de Psychiater”, to further discuss with David how genes influence traits such as SES and mental health.

Dr Charley Xia and Dr David Hill present at the World Congress of Personality

Drs Charley Xia and David Hill of the LBC team held a symposium “Genomics of personality and intelligence” at the [World Conference on Personality](#), together with Professor Lars Penke of the Georg August University of Göttingen. Dr Xia is a statistical geneticist and researcher on the MRC funded project “From genetic sequence to phenotypic consequence: genetic and environmental links between cognitive ability, socioeconomic position, and health”. Charley presented his work examining the contributions of mitochondrial DNA to neuroticism. Neuroticism is one of the five personality factors and individuals with a higher level of neuroticism are more likely to experience stress and anxiety in addition to being more at risk of mental health disorders. By examining mitochondrial DNA in 269,506 individuals Dr Xia identified five haplogroup- and 15 mitochondria-marker associations linked to differences in neuroticism, and further showed that the H mitochondrial haplogroup has a protective effect against psychiatric disorders like schizophrenia and bipolar disorder. Dr Hill presented his work examining the link between differences in socioeconomic status (SES) and brain structure using genetic data. To help identify the causal role that the environment may play in disease and trait variation, David’s study used Mendelian randomisation, a data analysis method applied to genetic data on over 1 million individuals with measures of their educational attainment, occupation, household income, and the level of social deprivation in the area in which they lived. The study highlighted SES as a potentially modifiable risk factor that influences brain health across the life-course.

Dr Harris volunteering for a charity working with people living with dementia

At the beginning of August Dr Sarah Harris spent a morning with [Equi-Power](#), a member group of Riding for the Disabled (RDA). She joined a ‘Tea with a Pony’ session, a nationwide RDA dementia support initiative inviting individuals living with dementia and their family members or carers to spend purposeful, joyful, therapeutic time with horses. Amanda Namey, the Service Manager at Equi-Power said: “*The staff of our regular attendees report that it regulates mood and reduces tremors for several hours after sessions. Families report it gives structure not only to the week but to their conversations. Memories are stirred that otherwise no one would know anything about, that can support carer/participant relationships.*” Sarah enjoyed the morning, chatting to the members about their lives and love of horses over a cup of a tea and a cake. Sarah said: “*One lady reminisced about how as a child she loved it when the fishman was in her street delivering fish from a horse drawn cart. She always went out to greet the horse and this was her favourite time of the week. Another lady rode one of the horses while her daughter and grandchildren watched in delight, and her grandchildren had great fun grooming the horses.*” They all thoroughly enjoyed horse cuddles at Equi-Power.



Audience of over 2,000 attendees at Dr Hill's keynote address

Health Week at Niddrie Mill Primary



Niddrie Mill Primary 5 pupils playing the LBC-inspired Game of Life

Lothian Birth Cohorts were invited to Niddrie Mill Primary School in Craigmillar for their 'Science of Healthy Living' Week on 4 June. Over three sessions we joined almost 60 Primary 5 children for an interactive workshop on brain and cognitive health. Drs Sarah Harris and Barbora Skarabela together with wonderful volunteers from Edinburgh Neuroscience engaged the children in activities about the role of genes and lifestyle in our cognitive and brain health: children enjoyed creating a DNA bracelet, playing our bespoke boardgame 'The game of life: Who gets to be 100?', inspired by LBC research, and children as well as teachers were mesmerised and drawn to 3D-printed brain models, leading to lively discussions about structural differences between healthy and less healthy brain ageing, and the factors that may influence the outcomes. We were also joined by Gintarė Bagačionkaitė, a neuroscientist-illustrator who invited the children to create their own characters for a book about the brain. The children were keen to engage (and eager to get to 100 in the game), and the staff were excellent in supporting our activities. We had a fantastic day! We were delighted with the feedback ("Thought it would be boring, but it was fun!"; "Amazing!"; or "10/10") and we look forward to another future collaboration!

Castlebrae Community Science Festival

Dr Barbora Skarabela represented Lothian Birth Cohorts at the Community Science Festival at Castlebrae, organised by Edinburgh BioQuarter. She set up a display table featuring brain models, AR glasses, and Fast Facts cards to engage the local community in a conversation about Lothian Birth Cohorts. 3D printed brain models based on LBC MRI scans immediately drew attention of visitors of all ages, leading to interesting conversations about the study and findings. Barbora met with Castlebrae high schoolers and primary school children who came along on a Friday afternoon with their parents and guardians; a group from St Francis primary school left with an invitation for the LBC team to visit their Primary 7 classes and we have now agreed on a workshop on brain health during the science week next March! The festival was attended by over 120 visitors.

'A piece of cake': Professor Ian Deary's day at the Zoo with George Watson's Ladies, talking about healthy ageing



Ian Deary with captive audience from George Watson's Ladies' College

The Lothian Birth Cohorts (LBCs) have always been run from the Department of Psychology in 7 George Square. Until the 1970s this building was the home of George Watson's Ladies' College (GWLC). The GWLC



graduating class of 1967—now in their mid-70s—heard that some ageing research was going on in their old college. They wrote to the Department of Psychology and asked if someone could come and talk to them about it at their 2024 reunion.

"Sure", we said, and founding Director of the LBCs, Ian Deary, got on his bike—after his Saturday morning parkrun and armed with a few dozen *LBC Fast Facts* cards—on 27th July and went to talk to their gathering in the top floor of the Holiday Inn at Edinburgh Zoo. "It was as much a discussion as a talk," Ian said, "because I encouraged them to ask questions as we went. We bled for well over an hour and they seemed fascinated and impressed by the work we were doing in their old school." Ian covered the setting up and running of the Scottish Mental Surveys of 1932 and 1947, the re-discovering them and recruiting the LBCs, what we do with the LBCs when we see them, the main themes of our publications and reports, and the future of the LBCs. Two of the ladies knew someone from the LBCs, now sadly deceased. Writing with thanks to Ian after the talk they declared the research and its background to be, "absolutely amazing". Given their age—and Ian's is not far behind theirs—they wanted to know as much as possible from Ian about healthy cognitive and bodily ageing and discussion of this continued over a generous tea break after which Ian was invited to stay and hear some of their own talks about their interests and activities. Ian described it as a "lovely afternoon," and told us that the ladies—some of whom are shown in the picture here—had come from nearby and far away, one from Vancouver. "But it's a small world too," said Ian, "because one of the attending ladies was Gillian Kirkwood who used to be head of computer support for our College of Humanities and Social Sciences!"

Lothian Birth Cohorts at the 'Developing Brain' exhibition



'Shedding Light on the Brain' with re-purposed LBC glass paperweights celebrating the study

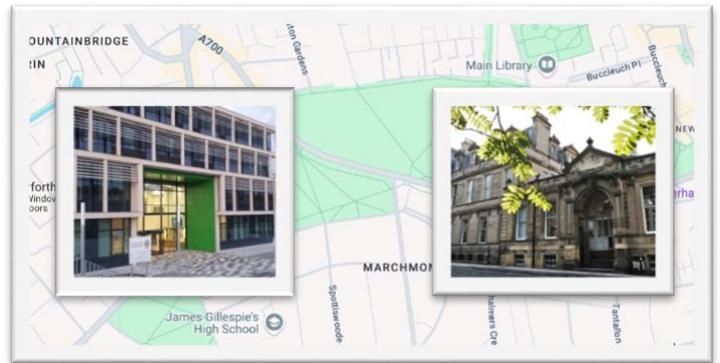
The [Simons Initiative for the Developing Brain](#) (SIDB) and the [Patrick Wild Centre](#) partnered up with 'Fusion: Art meets Science' to host an exhibition celebrating the brain. The Developing Brain exhibition was open to artists and neurodevelopmental scientists, to collaborate and create brain-inspired artwork. Lothian Birth Cohorts contributed to the event with two art-science collaborations: **Shedding Light on the Brain** arising from glass paperweights that were created in 2019 as gifts to celebrate the twentieth anniversary of the Lothian Birth Cohorts. While most were given away, some of the remaining ones have been used in this artwork that references the LBC archives and celebrates the study.



'Watching your Brain' highlights two sides of science: Scientific discoveries require data and the participants who provide them

Watching your Brain brought together two sides of science that are necessary for helping us understand how the brain changes across the life course. On one side, it represents the abstract data leading to important scientific discoveries. On the other side, it showcases the participants who provide the data and without whose dedication and commitment it would be impossible to uncover secrets of the developing brain. The [opening night](#) on 29 August at Inspace Gallery was incredible, with speeches from the organisers, Gintarė Bagačionkaitė (Fusion) and Jane Wright (Scientific Officer, SIDB) and a lively crowd of around 70 attendants. We look forward to having many opportunities to showcase these LBC-inspired art-science collaborations at future events!

Enhancing intergenerational connections in the community with Lothian Birth Cohorts' findings



'Marginal Gains' brings together Boroughmuir High School and the University academics

We are excited to announce the launch of a new educational programme '*Marginal gains: Enhancing Intergenerational Connections through Art, Science and Dialogue*' based on research by Lothian Birth Cohorts, in collaboration with Boroughmuir High School and local care homes. '*Marginal gains*' is a 10-week intergenerational program created around a seminal publication by Dr Janie Corley and colleagues that reviews years of LBC findings, that aims to raise awareness of brain and cognitive ageing by bringing together local high school students, care home residents, and local artists. The demand arises from the need to empower students with knowledge and skills that make them better informed about factors that influence cognitive ageing and help them prepare for later life while strengthening connections between young people and care home residents. The program features research-based talks, hands-on activities, Q&A sessions with experts, and discussions. To encourage active participation, a guided art project leads to co-created educational materials based on the students' experiences. The activities are inspired by a feature film with an intergenerational theme, and include writing alternative scenes, creative tasks related to the film, and creating short films, blogs, vlogs, poetry or books, depending on the students' interests. Leveraging our existing partnership with the High School and their established connections with local care homes, the program focuses on building capacity and skills among young people. Guided by local artists, participants will co-create evidence-based educational materials on healthy ageing, making them accessible and influential for their peers. By fostering intergenerational connections, the program aims to create a sense of community, promoting wellbeing and encourage knowledge exchange activities across partners and organisations, potentially influencing lifestyles and behaviours with understanding of marginal gains in healthy cognitive ageing. The programme is funded by the Knowledge Exchange and Impact Grant: Developing Impact Award from the College of Arts, Humanities and Social Sciences.

New publications

Published and in press:

Baranyi, G., *et al.* (2024). Life-course neighbourhood deprivation and brain structure in older adults: The Lothian Birth Cohort 1936. *Molecular Psychiatry*. <https://doi.org/10.1038/s41380-024-02591-9>

Corley, J., *et al.* (2024). Life-Course Pathways to Exceptional Longevity: Evidence From the Lothian Birth Cohort of 1921. *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*. <https://doi.org/10.1093/gerona/glae166>

Corley, J., *et al.* (2024). Gardening and cognitive ageing: Longitudinal findings from the Lothian Birth Cohort of 1921. *Journal of Environmental Psychology*. <https://doi.org/10.1016/j.jenvp.2024.102361>

Deary, I. J., *et al.* (2024). Inspection time and intelligence: A five-wave longitudinal study from age 70 to age 82 in the Lothian Birth Cohort 1936. *Intelligence*. <https://doi.org/10.1016/j.intell.2024.101844>

Gibbon S., *et al.* (2024). Association of optic disc pallor and RNFL thickness with cerebral small vessel disease in the PREVENT-Dementia study. *Alzheimer's & Dementia*. <https://doi.org/10.1002/dad2.12633>

Huffman, J.E., *et al.* (in press). Whole genome analysis of plasma fibrinogen reveals population-differentiated genetic regulators with putative liver roles. <https://doi.org/10.1182/blood.2023022596>

Keaton, J. M., *et al.* (2024). Genome-wide analysis in over 1 million individuals of European ancestry yields improved polygenic risk scores for blood pressure traits. *Nature Genetics*. <https://doi.org/10.1038/s41588-024-01714-w>

McKinnon, K., *et al.* (2024). Epigenetic scores derived in saliva are associated with gestational age at birth. *Clinical Epigenetics*. <https://doi.org/10.1186/s13148-024-01701-2>

Page, D., *et al.* (2024). Examining the neurostructural architecture of intelligence: The Lothian Birth Cohort 1936 study. *Cortex*. <https://doi.org/10.1016/j.cortex.2024.06.007>

Quidé, Y., *et al.* (2024). ENIGMA-Chronic Pain: A worldwide initiative to identify brain correlates of chronic pain. *Pain*. <https://doi.org/10.1097/j.pain.0000000000003317>

Ward, J., *et al.* (2024). Head motion in the UK Biobank imaging subsample: Longitudinal stability, associations with psychological and physical health, and risk of incomplete data. *Brain Communications*. <https://doi.org/10.1093/braincomms/fcae220>

Contact

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<https://lothian-birth-cohorts.ed.ac.uk/>



Lothian Birth Cohorts team in front of 7 George Square, March 2023



Lothian Birth Cohorts



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