December 2021

Take our new COVID-19 poll

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“I thought we might follow the children until they were 7”

Professor Jean Golding

Your Life in Science

Celebrating 30 years of the study

THE GLYCOCHECK TEST

Introducing our @30 clinic!

To coincide with our 30th birthday, we have launched a new clinic called '@30'. It will take place over two years, and for the first time ever we are inviting all three generations to attend.

What does it involve?

The @30 clinic includes important measures we always do, such as height and weight, lung function, blood pressure, liver and bone scans as well as some new ones testing your vision and hearing. You will be asked to jump, hop and balance on a force plate, and be invited to take a GlycoCheck test where a small microscope will be placed under your tongue to analyse capillary function.

What is the new GlycoCheck test?

Using this brand new technology, we will ask participants to hold a microscopic digital video camera (a kind of probe) under their tongue for a few minutes. The probe records an image of the capillaries, looking at the blood volume and flow through the tiny blood vessels found there.

Over the next two years, you will receive an email invitation to attend a 2-3 hour clinic with appointments on offer 7 days a week

Keep a look out for your email – and please make sure your email address is up to date!

Professor Deborah Lawlor, Professor of Epidemiology at the University of Bristol, explains:

"The glycocalyx is a bit like a raincoat that lines the inside of blood vessels and stops them from being damaged. In some people it can become thin and let cells into blood vessel walls (a bit like letting the rain in).

"Currently, there is very little research into this measure in a general healthy population. By measuring this in a large study of two generations – the Children of the 90s and their parents – we will be able to explore whether different genes, diets, body shape and size result in differences in the glycocalyx, and whether it relates to blood pressure and other measures of health we have collected. As it has always been, Children of the 90s is at the cutting edge of research using this new measure."

Professor Jean Golding comments on the study's involvement with the John Templeton Foundation, which is based in the USA:

"Very excitingly, Children of the 90s has secured funding from the John Templeton Foundation which will help us to investigate whether spirituality or religious beliefs are associated with health. Through clinics and questionnaires, you will be asked about your health and lifestyle, which will ultimately help us to establish whether religious or spiritual beliefs have important parts to play in helping us cope with physical and mental health problems. This will be a very exciting and interesting development for Children of the 90s."

"I am so excited to be a part of this study with my family. Having three generations means we can enjoy the clinic and findings together. I also can't wait for the @30 clinic especially after having some time with no clinics! Who knew we would have got this far!"

Tilly, original Child of the 90s

"I really love the fact that people have realised the importance of the study and funding has been found to keep it going."

Victoria, original study mum

NANCY, SISTER TILLY, THEIR MUM VICTORIA AND THEIR CHILDREN WHO ARE ALL IN THE STUDY!

"The @30 clinic was really easy to do, and very COVID safe. I think it's important that people come to their clinic appointment because the research will really help people in the future."

Liam, original Child of the 90s and COCO90s father

Next page: Celebrating 30 years of Children of the 90s

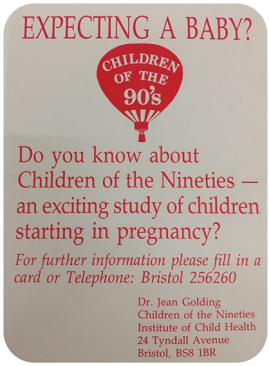
Celebrating 30 years of Children of the 90s!

It's amazing to think that 30 years ago, our original mothers were approached, pregnant with their babies, to ask if they would take part in an exciting new study looking at the health and wellbeing of children from pregnancy and beyond. Over 14,000 of you signed up to take part and, at that time, no one, least of all us, imagined we'd still be going to this day – providing ground-breaking data and research to the worldwide scientific community.

As we celebrate our 30th year we would like to celebrate each and every one of you – none of this would have happened without your continued support and time!

Sharing our memories

Do you remember doing these memory tests as a baby? And what about our first ever poster inviting mothers to take part?



Did you know that we'll pay your travel and accommodation expenses for you to take part in our @30 clinic?

Professor Jean Golding said:

"When we first set up the study, I thought we might follow the children until they were age 7. Here we are 30 years on, and the amount of information we've got is world-beating. Nobody else has got anything like it, and as a result, scientists can answer all sorts of questions that can't be answered any other way."

Watch Jean's full interview on BBC Breakfast to mark our 30th anniversary: bit.ly/CO90s-BBC

"When I was approached by Children of the 90s on one of my maternity visits I knew immediately that I wanted to take part, and to this day, I'm really glad that I did!"

Junko, original study mum

"I'm so glad my mum signed up to Children of the 90s all those years ago! I've loved being involved in the study as a focus child and have really felt the benefit of being able to observe my own health as I grew up whilst contributing to such an impactful study. Happy 30th birthday to Children of the 90s and thank you for enriching our lives with the extra dimension of fun and knowledge. Many happy returns!"

Hannah, original Child of the 90s

"My daughter and I have been involved in the study since the beginning ... I had no idea that 30 years later I would still be eagerly filling in questionnaires and keeping up with the results! Twenty-four years ago we moved to Switzerland as a family. Children of the 90s was a great tie to Weston-super-Mare. We love returning for the physical clinics and have never failed to attend a clinic or a questionnaire! We need a big badge for that!"

Bernice, original study mum

Next page: Being a dad - what does this mean to you?

Being a dad - what does this mean to you?

A pilot study led by Dr Iryna Culpin of the University of Bristol worked with several of our Children of the Children of the 90s' (COCO90s) fathers to explore their experiences of parenthood and masculinity. This was carried out through a series of artist-led creative interviews with Dr Catherine Lamont-Robinson. The study aims to provide insights into the role of fathers and the importance of their involvement to children, particularly in families experiencing mental health difficulties. You can view a selection of the artwork produced on our Facebook page by following this link or scanning the QR code **bit.ly/Dads-Study**

One COCO90s dad said:

"Having children brings an enhanced emotional intelligence within males, which I don't think they necessarily know how to discuss or channel."

Another talked about the gender stereotypes – and how restrictive they can be:

"Personally I really wanted to do the feeds overnight and feel like I was taking an active role. Similarly, regarding childcare, I wish it were more financially viable for me to cut my hours at work to have days off with my daughter rather than my wife shortening her hours."

Are you a father of a COCO90s child? We'd love you to join us at our upcoming @30 clinic.

To find out more visit www.childrenofthe90s.ac.uk/at30

Did you know we have a letter you can give to your employer – they may allow you time off work to attend our @30 clinic.

"My family love being part of Children of the 90s – any chance to come down, they will do. My partner is also part of the study and we have a little one who is in COCO90s – and another on the way. I hope my children will love it just as much as we do."

Sean, participant and COCO90s father

PARTICIPANT AND COCO90S FATHER, SEAN

What is long COVID and how should we treat it?

Research shows that a third of people who are infected by COVID-19 report long term symptoms, with older people and women more likely to be affected by the condition known as 'long COVID'. Over a third of those affected have symptoms lasting at least 12 weeks, with one in 10 reporting severe long COVID symptoms.

But we still know very little about what the long-term consequences of a COVID-19 infection are. To help find out, Children of the 90s is one of several studies taking part in the CONVALESCENCE study. Based at University College London, researchers will use population health studies to understand the biological changes that happen after a COVID-19 infection.

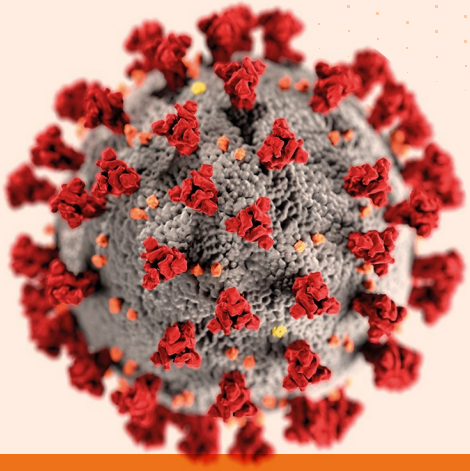
The study will aim to describe, diagnose and define long COVID and the data will be used to rapidly update NICE guidelines for doctors and healthcare workers. In turn this will assist in creating better treatment and support for those who are suffering from this condition.

In early 2022 we will be inviting 200 participants to attend a 3-4 hour clinic in London. The visit will include MRI scans of the brain, heart, lung and liver. There will also be heart tests, physical fitness assessments and ongoing fitness data collection using an activity monitor watch. Participants (and a guest, if they wish) will have any travel expenses and necessary accommodation costs covered, where appropriate. Anyone eligible will receive an invitation, so please make sure your email address is up to date.

Professor Hugh Brady

Professor Hugh Brady, who is Vice-Chancellor and President of the University of Bristol, said of the study:

"Children of the 90s is one of the world's largest and most detailed birth cohort studies that has contributed so much to science over the past 30 years. As a landmark partnership between the University and three generations of the Bristol residents – from the original mothers who signed up, to their children and grandchildren – the study continues to provide a scientific resource not seen on this scale or depth anywhere else in the world. I very much look forward to seeing how the @30 clinic continues to shape the study and further enhance our understanding of health and wellbeing within generations."



Help make a difference to COVID-19 today!

Please take our short COVID-19 poll

The Government's Scientific Advisory Group on Emergencies (known as SAGE) is working with Children of the 90s to find out how our festive season plans might impact on COVID-19.

Dr Ellen Brooks Pollock at the University of Bristol has developed a short survey to help understand how COVID-19 rates might rise over Christmas and how this could impact the NHS.

Unlike our usual questionnaires, this is a quick, anonymous survey accessed using the QR code below. It only takes a few minutes to complete, but your data could help scientists and the NHS to plan policies to get us through the winter months. Please take part and make a difference by following this link or scanning the QR code on your phone: **q.childrenofthe90s.ac.uk/christmas21q**

(ABOVE) PARTICIPANT JACOB ATTENDING A CLINIC

Our research

Researchers from across the world continue to access data from our study in order to answer important questions about health, wellbeing and society. This year has been no exception, with scientists from across the world including the USA, Europe and of course here in the UK making use of your valuable data – they really couldn't do it without you!

Do our genes have a role in obesity?

Researchers from the University of Cambridge and the University of Bristol measured the DNA code of a specific gene called MC4R in 6,000 of our participants. This gene acts as a genetic switch in the brain, producing a protein that is involved in the control of appetite and the feeling of being full. In people with a mutation in the MC4R gene, their appetite is stimulated so they feel hungrier, and they may eat more due to not feeling satisfied.

Previous studies have shown that people with these mutations tend to be more overweight than those without, but up until now no one has known how frequently these mutations occur, and at what age they impact body weight.

Dr Kaitlin Wade from the Bristol Medical School explained: "Because of the amazingly rich and comprehensive data you have provided, we were able to look at these relationships. In our study, we found that up to as many as one in every 340 individuals had various mutations in the MC4R gene, which was much more common than was expected. Understanding the MC4R gene is important for future targeted interventions to help reduce obesity in the population. Some of this may be implemented by potentially identifying those at risk of becoming obese from an early age."

Knowing that these types of mutation are more common in the population than we thought is important to reduce stigma around obesity.

Have you ever wondered what happens to your samples?

A team of researchers from Massachusetts General Hospital in the USA recently analysed 70 of your baby teeth. They found that, just like the rings of a tree, teeth contain growth lines that may reveal clues about childhood experiences.

Through detailed analysis of the teeth using microscopes, coupled with the responses from mothers' questionnaires, the team found that the thickness of growth marks could help to identify children at risk of depression and other mental health disorders later in life.

Professor Erin Dunn explains: "Teeth create a permanent record of different kinds of life experiences. Exposure to sources of physical stress, such as poor nutrition or disease, can affect the formation of dental enamel and result in pronounced growth lines within teeth, called stress lines, which are similar to the rings in a tree that mark its age. Tooth growth lines can vary based on the environment and experiences a child has in utero and shortly thereafter, the time when teeth are forming. Thicker stress lines are thought to indicate more stressful life conditions."

Study in numbers

1,200

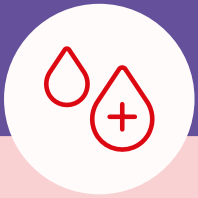
participants came back to the study in 2020-21

38,100

questionnaires about COVID-19 completed in 2020-21

1.5 million

biological samples collected in total



4,241

blood samples given in our second COVID-19 antibody study

75%

showed an antibody response from the vaccine or natural infection

What can store cards tell us about health?

Boots Advantage, Lidl Plus, Tesco Clubcard – our wallets are full of these plastic cards – but what can they tell us about health?

Twenty participants have been taking part in an innovative pilot study to help researchers understand what you think about the collection of shopping loyalty card information. Researchers hope that in future this data has the potential to reveal more about our daily routines and health than questionnaire data. For instance, researchers could look at how often you bought paracetamol to assess how frequently and when pain relief is needed. Or if you develop diabetes, your shopping history would more accurately reflect diet and lifestyle choices before the disease was diagnosed. Cross-referenced with other health and lifestyle information, more targeted programmes could be developed to prevent diabetes.

Participants in our study were asked about their attitudes to having their loyalty card data analysed and if it might change their buying habits.

A note from our funders

Bruna Galobardes is Senior Research Manager at the Wellcome Trust. She said:

"Wellcome is proud to support Children of the 90s, a UK cohort that continues to lead scientific discovery into the multigenerational and multifactorial causes of diseases. As a funder, we are extremely thankful for the generous contributions from three generations of the British public based around Bristol, children born in the 90s, their parents and now their own children, that have made and will continue to make a difference to how we improve health for all. Celebrating the 30th year is especially meaningful today. The extraordinary efforts of participants and researchers in the challenging circumstances we have all experienced first-hand is testimony of their commitment."

Stephanie

Stephanie took part and downloaded all her Tesco Clubcard data.

"It was both fascinating and horrifying to see how much chocolate I got through in black and white. I had never really considered my data in this way before but it does make it easy to work out my daily and weekly patterns, location, commute and even my mood. There was a definite correlation between my junk food consumption and stressful work weeks! I'm happy to share this with Children of the 90s but not further unless it was somehow anonymous."

A new study next Spring will ask all participants to opt-in to allowing researchers to access your loyalty card information. Only participants that have opted-in will be part of the larger study to explore how this data might be used to improve mental health and support an aging population.

Dr Anya Skatova, who leads the pilot, said:

"Looking at what's known as transactional data will uncover much more about your health and behaviours than questionnaires and clinics alone. It's truly innovative and I'm delighted to be working with the rich and varied data already available through Children of the 90s."

Children of the 90s in the news

From celebrating our 30th birthday, to launching the @30 clinic, this has been a big year for us here at Children of the 90s. What's more, our world-renowned data continues to be used by researchers to inform government policy and answer important health questions. You can read more and watch clips of our team and participants in both local and national press, including BBC Breakfast and ITV, on our website here: **bit.ly/CO90s-News**

A note from our funders

Fiona Watt is the Executive Chair of the Medical Research Council. She said of the study:

"Children of the 90s is a wonderful partnership between the University of Bristol and the city's residents. It is a rich scientific resource involving almost 15,000 people born in the Avon area in 1991 and 1992. It has led to significant discoveries that are making a difference to lives around the world. During 2021 the Children of the 90s' participants have made extraordinary efforts – answering additional questionnaires and visiting in-person clinics – to study COVID-19. All this requires huge commitment and 'time out' from their busy lives. Now participants are visiting the new @30 clinic – this will be the biggest clinic yet in terms of numbers and marks 30 years of Bristol's world-leading study of health and wellbeing. It is humbling to realise the difference that generations of families are making to science – from the original mothers who signed up, to their children who are now turning 30, and now their grandchildren. I would like to thank and congratulate everyone involved."

"Children of the 90s is a world-leading birth cohort study which makes it highly prestigious. I am proud to be working with this health research study that is completing its 30 years, a great milestone. I like working with the Children of the 90s as I absolutely love seeing how the 3 generations have a great bond with this study – they have actually seen it growing with them, and I enjoy the entire process of health data collection with them."

Dr. Vijeta Saxena, Children of the 90s clinic fieldworker

A final word from our Principal Investigator

Throughout my work, I'm often humbled by the impact of Children of the 90s. Undoubtedly, the most graphic illustration of the study's importance has been the role played in the COVID-19 pandemic. Through the huge number of questionnaires and sample collections, you – our families and participants – have generated data that is key to our understanding of the last two years.

The steady stream of contributions over the years has been substantial – from "back to sleep" to the genetics of weight, the health of livers and the mental health of our young people. In the context of this history, there is more to do. Together, we need to build on the deep understanding of life factors and outcomes by continuing to measure you all, wherever and whoever you are – our fantastic participants. Through understanding the effects of COVID-19, to the next stages of our multi-generation research – there is no other study that can improve health and wellbeing so well.

So this is a thank you and a call to arms. Thank you for all the hours and effort, the samples and data. In our special 30th year, please keep going, keep sharing, keep making a difference. We have a brilliant year ahead and we'd love you to take part and proudly keep the balloon flying.

Wishing you a very merry Christmas, and here's to 2022!

Professor Nic Timpson

Say hi on social media!

If you'd like to keep up to date on all our latest news, research and findings – plus the odd trip down memory lane – then come and join us on social media.

Join in the conversation and keep up to date:

children of the 90s

@co90s

@children_of_the_90s

Do you like our new-look newsletter?
Tweet us or post a picture on Instagram, and be sure to tag us too!

Get back in touch

You can re-join the study at any time, and you can do as little or as much as you like. Plus we're giving all our participants who take part in the @30 clinic a £40 voucher!

To get back in touch simply send your full name and date of birth to:

Email: info@childrenofthe90s.ac.uk

Phone: 07772 909090

Perhaps you have a friend or family member who used to be part of the study – be sure to share this with them too!

University of BRISTOL
Avon Longitudinal Study of Parents and Children

FSC