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UNIQUE MOTHER FATHER **YOUR NEWS...**
GENERATIONS KNOWLEDGE IMPORTANT

CHILDREN OF THE 90S

2020-2021

Welcome back

It goes without saying that 2020 has been an unprecedented year for us all. We know that many of you have faced uncertainty as the coronavirus swept across the world and continues to be a challenge. When the pandemic hit, as a health study with such a wealth of information spanning all the way back to before you were born, we found ourselves in a unique position to help. We are exceptionally well placed to measure the impact of COVID-19 and to put these measurements in the context of a vast collection of data and samples from the past. Personally, I cannot think of a more graphic illustration of the value of Children of the 90s - the study and our amazing participants poised to measure, test and follow the events that are shaping our lives. Indeed, it is that context (30 years of your hard work) and our readiness to respond to the pandemic that has led to data and findings already being used by government here in the UK and researchers around the world. Thank you.

Through the early part of the pandemic and the summer, we launched our COVID-19 questionnaires online. We had an exceptional response to the two COVID-19 questionnaires which we launched in April and June, with over 13,000 responses received. Following this, we completed an antibody testing programme with almost 5,000 of you in October. This is a contribution which is not only fast and at large scale, but which will have a huge impact on research into the virus and also will form the basis of new research we are planning to help understand COVID-19. We have already launched our next steps to follow up the biological impact of COVID-19 infections - an area which needs more data and where we can help.

We'd like to **thank each of you** who took the time to take part in one or all of these studies, and to welcome back those of you who have not been part of the study for a while – it's great to have you return and take part in the valuable research.

It is also important to thank all of you who have taken part over the years. The existing data we have on key areas such as mental health and lifestyle characteristics before the pandemic are allowing us to undertake critical "before and after" analyses examining differences flagged by COVID-19. This is a unique contribution and comes only from all those years of effort from all of you in Children of the 90s.

COVID-19 is a clear demonstration of the importance of Children of the 90s. It is not the only one by far, but is real for us all and brings home the value of each and every participant contribution – THANK YOU for making such an important contribution to the national and international effort.

Professor Nic Timpson
Principal Investigator – Children of the 90s

Update your details

It's never too late to get back in touch, even if you've not done anything for a long time. If you missed our most recent studies, it may be that we need an up-to-date email address to reach you. Email is now the main way we make contact with you.

It's easy to get back in touch and update your details. Send your name and date of birth via email to info@childrenofthe90s.ac.uk, or by text to 07772 909090.

"My Mum was approached in St Michael's Hospital when I was born and I've been involved ever since. My little boy is now part of Children of the Children of the 90s (COCO90s) too!" Zoey

Our work and the fight against COVID-19

As the virus continues to spread, having a knock-on effect on people's lives and livelihoods, your involvement in Children of the 90s is even more important than ever.

We've had an unprecedented number of participants return to the study this year, which helps us to better understand COVID-19 and the impact of lockdown measures used to manage the pandemic. Remember, you need only take part as little or as much as you wish. Text your name and date of birth to 07772 909090 to re-connect with the study if you've not been involved for a while.

Ask Alex

Dr Alex Kwong is one of our researchers looking at mental health issues. He is a Senior Research Associate in Psychiatric Genetic Epidemiology. Simply put, this means that he investigates how our mental health changes over time, how it impacts on other aspects of our lives such as relationships, wellbeing and overall health, and how mental health can be influenced by genetics and the world around us. Alex's most recent published work looked at the impact of COVID-19 on mental health using Children of the 90s and a similar study called Generation Scotland's data.

He found that anxiety was higher during the pandemic, even when accounting for pre-pandemic mental health. Lockdown particularly affected young people, whose anxiety levels doubled during the COVID-19 pandemic with 24% experiencing anxiety up from 13% in pre-pandemic times, according to your questionnaire responses. The older generation in our study (the original parents) reported a much lower frequency of anxiety to that of their children's generation, which was similar to pre-pandemic levels.

Women were more likely than men to be at risk of higher depression and anxiety during lockdown, as were those who had experienced financial problems before the pandemic and people with a prior history of mental health conditions.

The findings were reported widely in the media this summer and used by Public Health England and the government's Scientific Advisory Group for Emergencies (SAGE) to help shape policies.

Q. How did you get started in this topic and what influenced you to take this path?

I think I ended up here purely by luck! I was fresh out of university and looking for a job and managed to somehow land one as a Children of the 90s fieldworker, working on the Focus@24 study. As a Bristol boy, I was chuffed to bits as all my friends in school are in the study and I always wanted to get involved. I was born in 1990 so just missed out, whilst all my friends used to have the morning off school to get all these cool tests done!

At the end of the clinic, I moved to a data management role within Children of the 90s and following that, I did a PhD using Children of the 90s data to look at how depression changes from adolescence to young adulthood. For the last year, I've moved on to look at how depression changes across the life course using the parents' data as well.

Q. Have you always used Children of the 90s data?

I've always used Children of the 90s data in my research and I feel very fortunate to have been able to use the data to answer some really important questions. I always find it absolutely incredible that we have data that can be used to answer almost any question. That's a testament to the participants for their dedication and help over the decades, and to Professor Jean Golding for planning a study that 30 years later is still one of the best resources in the world.

Q. What is special about the study for your work?

For me, the depth of data that we have is just incredible. I use the data to track changes in mental health over time. In the young people, we have mood and feelings data that spans about 20 years with lots of assessments in that time point. For the parents, it's almost 30 years' worth of longitudinal data. That is amazing when you think about the detail that provides and how helpful this has been for policy makers and health professionals to better understand how mental health changes over time. It's not an understatement to say that the information people have provided has changed science and health over the decades.

Q. What's next for you?

We recently won some funding to collect more mental health data in Children of the 90s to look at the impact of the pandemic at these later stages. We will continue to monitor mental health and relay these findings to Public Health England and the government so that Children of the 90s continues to lead the way in the response to COVID-19. Thank you from all of us at Children of the 90s for your help and efforts, not just during COVID-19 but for the last 30 years, you have truly made the world a better place.

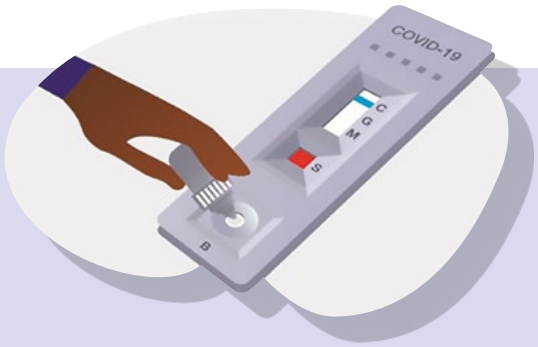
"With almost 30 years' of data and samples, Children of the 90s has never been more important to public health than now."

Professor Nic Timpson

Your data is informing government policy and having an impact on science.

Visit bristol.ac.uk/alspac/covid-19 to find out more

COVID-19 – insights from Children of the 90s



Since April, you have been helping us to understand how much COVID-19 has spread in our communities. Over 5,000 of you who had already completed our COVID-19 questionnaires were sent antibody home testing kits in October and asked to submit results online. We received 4,750 responses which is an incredible 90% response rate!

It's important to note that the tests are for research only, which means that the results cannot show immunity to the virus, and so we must continue to follow government guidelines. However, these results will now feed into an important national study which is looking at how our bodies develop an immune response – more on this below.

Key findings

In total, 4% of participants had COVID-19 antibodies when they took the test suggesting that they had an infection sometime in the past.

206 people in total had COVID-19 antibodies

25% of participants with a positive result did not previously think they had had COVID-19

3% of original parents (average age 59) had COVID-19 antibodies

6% of young people (average age 28) had COVID-19 antibodies

1% had previously tested positive for COVID-19 before taking our antibody test

1% told us that a doctor had told them that they probably had COVID-19

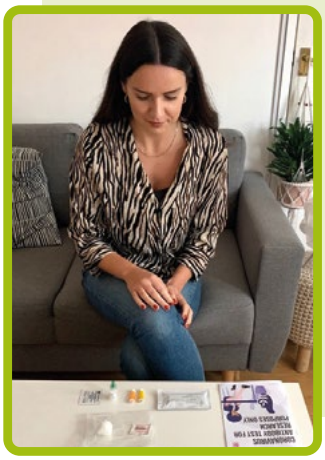
Senior Fieldworker Claire Rollings and Clinic Manager Dr Melanie Lewcock

Learning about our immune systems and COVID-19

As part of a national collaboration with the UK Coronavirus Immunology Consortium (UK-CIC.org) we are providing a unique insight into how people respond to the virus. This important study aims to better understand the long-term effects of COVID-19 and the condition known as Long COVID.

During a new clinic, we will collect blood, urine and saliva samples from 300 participants who will also complete a short questionnaire and fitness test. The information we collect will help form a picture about how the immune system responds after a COVID-19 infection. Our data is particularly important as we include young people, who may be entirely asymptomatic but carrying the virus.

Due to its importance, the study has been granted 'urgent public health research status' granting us permission to see participants in clinic during periods of COVID-19 restrictions (for more information, please see bit.ly/researchlock). Thank you to all our participants and staff for your vital role in this study.



"I've always enjoyed being part of the Children of the 90s, knowing that I am contributing to important scientific research. When offered the chance to partake in the COVID-19 antibody research, I was very happy to be involved. Anything we can do to learn more about this virus is taking us one step closer to normality."

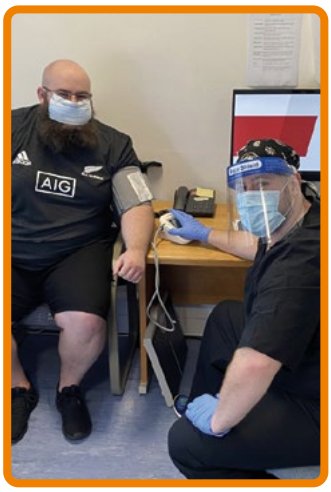
Rachel

Key discoveries from the last year

We may have been busy with COVID-19 work this year, but some of our other research has continued in spite of the pandemic. Two important studies have now been completed – one trying to understand more about eczema and another exploring whether smart watches are an accurate way to track alcohol consumption.

To complete the eczema study, we followed up with a small number of participants and were thrilled to welcome our first participant back into the clinic in September after COVID-19 led to a pause in face-to-face clinics.

Thomas had his blood pressure measured and a skin swab and biopsy taken by one of our Research Nurses.



Over the past year there have been over 180 research publications from scientists using your data from across the globe. Some of the key findings were:

Spotting liver damage in healthy young adults

Your Focus@24 clinic data has led to important findings about fatty liver disease. Dr Kushala Abeysekera found that one in five otherwise healthy young people showed signs of fatty liver disease and that obesity together with harmful alcohol use can lead to liver scarring. This is important as, if picked up early, fatty liver disease can be reversed through a balanced diet and regular exercise.

Your data is so important because young people in their 20s are rarely studied. Your support and involvement is advancing science by helping us identify the early signs of conditions that usually develop much later in life.

High potency cannabis linked to increased anxiety

Again using Focus@24 data, Dr Lindsey Hines from Bristol Medical School was able for the first time to study how the potency of cannabis affects mental health in a general population sample. She found that high-potency cannabis users were almost twice as likely to report anxiety disorder than those using lower potency cannabis. They were also more than four times as likely to report issues such as using cannabis on their own, their family expressing concern over their cannabis use, failing in an attempt to cut back on use, and getting into fights or problems at school or work as a result of use. Cannabis is one of the most commonly used drugs in the world and these findings suggest that using lower potency cannabis could reduce some of the harms associated with its use.

DNA can't explain academic achievement

Research led by Dr Tim Morris found that genes cannot be used to accurately predict how well a child will do at school. The study compared polygenic scores (measures that are constructed by the differences in our DNA that relate to a certain characteristic or behaviour) with your exam results at ages 7, 11, 14 and 16. The team found that while these scores could be useful for predicting how well a group of students might do, it wasn't sufficient to predict an individual child's academic achievement. The best means we currently have to do this is looking at how well they did in school earlier in childhood or by looking at their parents' education.

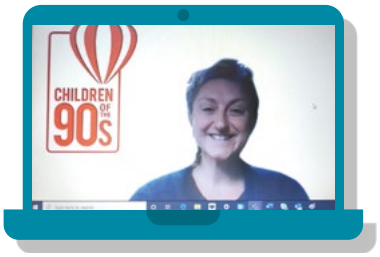
Early signs of genetic risk for diabetes

Early signs of metabolic health differences which could indicate a risk of type 2 Diabetes can be seen in children as young as 8 years old, according to research by Dr Joshua Bell. Josh explains: "We knew that diabetes doesn't develop overnight. What we didn't know is how early the first signs of disease become visible and what these signs look like. This study would not have been possible without the Children of the 90s." Diabetes is most common in older age, but your data means that health professionals may now be able to spot early warning signs giving them greater potential to make lifestyle changes and interventions that could stop the disease before it becomes harmful.

Looking ahead to 2021...

The pandemic has meant we need to keep our face-to-face interactions to a minimum, and so the clinic team has been working hard behind the scenes to come up with innovative new ways of working.

Virtual clinic



We've developed a new virtual clinic which takes place over video call, and is being slowly rolled out across the study, starting with pregnant women joining our Children of the Children of the 90s (COCO90s) study.

One of the major bonuses of working in this way is that it will enable us to see you even if you live a long way away. What's more, appointment times can be more flexible to fit round busy family life.

There are lots of ways that you can take part in the study, but it's vital we have your most up to date email as this is now our main way of keeping in touch! Email info@childrenofthe90s.ac.uk to update your details.

So far, feedback has been great, and we've now also started doing our 6-month dad's visits in this way too!

"I really enjoyed the virtual visit which I was able to do from the comfort of my home! It is a shame that currently we aren't able to visit the centre to do the tasks and measurements in person, but I am really thankful it can still be done one way or another. Everything I needed was dropped to my door which made things even easier for me! If anyone is thinking about taking part in the virtual measures, you definitely should. It doesn't take much time out of your day, and every bit helps towards the amazing research Children of the 90s do."

Peek inside the box

If you are asked to take part in a virtual clinic, you'll be sent a box which, depending on what's right for you, might include equipment to measure blood pressure, circumferences of your waist, arms and head and an activity monitor.

See our research in action at 'We The Curious'

Last year we formed a partnership with Bristol's We The Curious science centre. Some of you shared your health stories as part of a brand new exhibit, the Bristol Health Map. In 2021, if COVID-19 restrictions permit, we will take our research into the centre's Open City Lab. We hope to share some of our current research and data collection in process and explore what it means to be in a longitudinal health study with visitors to the centre.

If you are a regular visitor at the centre and would either like to get involved or have suggestions as to what kind of joint events you'd like to see next year, please get in touch via info@childrenofthe90s.ac.uk. Please follow our social media channels to find out more.

We remember

Professor Michael Furmston

We are sad to announce that Professor Michael Furmston, former Chair of the ALSPAC Ethics and Law Committee, has died at the age of 87.

Michael was the first Chair of the Committee, a position he held from 1990 to 2006. He, alongside the other founding members, established the ethical principles which would ensure that participants would not come to any harm when involved in Children of the 90s. We owe him a great deal and many, not only within Children of the 90s and the University of Bristol, but throughout the world will miss his sharp intellect, warm heart and legendary anecdotes.

How and why we use your data

Harriet Mortimer is a Children of the 90s participant who sits on the Original Cohort Advisory Panel (OCAP). OCAP provide us with their views and guidance on many aspects of the study, and it is an important way for us to find out what matters most to you. Here she explains what being in OCAP involves and poses some of your common questions to our team about how we use your data.

"I've been part of OCAP for over 5 years now and I enjoy volunteering my time because I've always enjoyed being part of the Children of the 90s study, so it's nice to be able to give something back. I also like using my scientific knowledge from my psychology degree to help shape the research and questionnaires from a participant's perspective. It's also a really friendly group, and although it is a virtual session now, after COVID-19 I hope we can come together again and eat pizza!"

Harriet: How do you use our data and link to other records?

CO90s: Being part of Children of the 90s means that the health and lifestyle information which you provide could be used by researchers all over the world to help improve population health and change policy. One of the ways that we are able to ensure that researchers have as much relevant information as possible is by connecting to routine health data and official records such as NHS health records and school records. We have been doing this for over 10 years, and you are able to opt out from having your data linked in this way - we always respect any decision that you make.

You can find out more by visiting **www.childrenofthe90s.ac.uk/using-your-records**

Harriet: How do you keep our data confidential and protected?

CO90s: The data we collect as a result of this type of connection with existing records, which we call data linkage, is only made available to approved researchers, and linked data is processed using a unique ID number (like the barcode ID on your questionnaires). All your personal details (such as your name) will be removed and researchers will not be able to link your data back to you.

Avon and Somerset Police will provide us with the individual data but will not know the identity of any of our participants or be able to access individual data about the study or participants. We will not share any personal information with Avon and Somerset Police.

Harriet: What new ways have you linked our data?

CO90s: We are now able to link your COVID-19 records, and have access to testing results too.

We have also been working with Avon and Somerset Police to link information provided by our participants to records on cautions, arrests and convictions for research relating to criminal activity and rehabilitation. We are part of their initiative looking at violent crime particularly aimed at reducing knife crime in the area.

This will help researchers to better understand what social factors - including childhood adversity, substance use and mental health - may contribute to people committing crime. In doing so, the findings have the potential to inform and improve local and national policy and to help people before they reach the criminal justice system. This could, in turn, contribute to reducing crime, thus improving public safety too.

We always want to ensure there are no surprises in how we use your data, and you are free to do as much or as little as you like. If you have any questions, or you change your mind about taking part in an activity then let us know by emailing info@childrenofthe90s.ac.uk

Anyone interested in taking part in OCAP should email us at info@childrenofthe90s.ac.uk – the sessions take 2 hours and take place every 6 weeks, using a video call. If you prefer you can take part via email response too.

Recall by Genotype

There are many types of study we run here at Children of the 90s. As a participant, you may be invited to take part in a 'recall by genotype' study - which means you will be invited to take part depending on your genotype. This relates to the differences in your DNA. We want you to know as much as possible about recall-by-genotype studies, as being invited to one of these studies may raise questions for you. You can find out more at www.bit.ly/CO90genotype. If you do not want to be invited to take part in this type of study get in touch and let us know.

Children of the 90s In The News

It's been a busy year for us here at Children of the 90s. With new research published regularly using study data, along with the extraordinary work we've been doing through the COVID-19 pandemic, this has meant you may well have seen us in the news! Here's a round-up of just a few of the places we've appeared this year, and you can see even more on our website: www.bristol.ac.uk/alspac/news/news-coverage.

We're turning 30!

2021 is set to be an exciting year for us all, not least because it marks 30 years since our study started. We'll be looking at various ways to mark this milestone, and would love to hear any ideas you have too!

Our @30 clinic is set to start later in the year, and we'll keep you updated as the plans progress.

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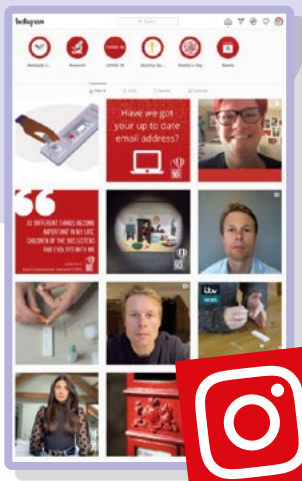
KNOWLEDGE IMPORTANT FUTURE GENERATIONS

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 over on social media.

Join in the conversation and keep up to date:

- children of the 90s
- @co90s
- @children_of_the_90s



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! In the coming months we will be doing more COVID-19 work and virtual clinic sessions with new parents. There are also studies that use your data without you needing to get involved at all.

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

info@childrenofthe90s.ac.uk

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!

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University of BRISTOL

Avon Longitudinal Study of Parents and Children

CHILDREN OF THE 90s