ME FAMILY FRIENDSHIP FOCUS FUTURE UNIQUE MOTHER FATHER YOUR NEWS...

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2015-2016

HELLO!

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Welcome to our latest newsletter. We are as busy as ever in Children of the 90s.

FATHERS

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We are crunching all the data we have collected from study mothers over the last five years. COCO90s, which is recruiting and collecting information about the children of the Children of the 90s, is expanding. You can read more about this on page 6. On page 7 we explain what we are doing for other important family members, including fathers, grandparents, brothers and sisters. Children of the 90s truly is a family study!

The big news is that we will be running new Focus visits for our original participants. It's called Focus@24+ and will run for two years from June 2015.

Can you believe that it has been seven years since our last Focus visits? Doesn't time fly? Back then, our study young people were in their late teens, the Labour Party was in government, Blue Peter celebrated its 50th birthday and Britain won 47 medals at the Beijing Olympics. Over 5,000 participants attended Focus@17+ and we hope that just as many will come to Focus@24+.

Our early adult years are critical to later health. Just like a piece of a jigsaw, who we are now fits with our earlier life to influence our health 10, 20, even 50 years from now, so it's really important that as many participants as possible take part. Information gathered at Focus@24+ will help researchers piece together the great puzzle of human health, from infancy to adulthood, to understand what keeps us healthy (or not) in body and mind.

None of this would be possible without our participants. So, thank you for your incredible commitment and dedication.

Ms Lynn Molloy, Executive Director Children of the 90s





Turn to page 4 to find out more about Focus@24+

EWE'LL NEVER BELIEVE IT!

We're delighted to announce that we are supporting our friends at the Wallace and Gromit Grand Appeal and the Bristol Children's Hospital by sponsoring a giant Shaun the Sheep sculpture as part of the 'Shaun in the City' fundraising appeal. Look out for the Children of the 90s sheep when Shaun takes to the streets in **July and August 2015!**



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THANK YOU

More than 2,300 participants got in touch after our last newsletter to help us with our research. Here's how they've helped.

YOUNG PEOPLE

WHAT WE ALREADY KNOW

Schizophrenia affects one in every 100 people and a person's risk of developing it is influenced by their genes.

WHAT YOU DID

By September 2015, almost two hundred participants will have travelled to Cardiff to have brain scans, perform activities and complete questionnaires.

WHAT WE HOPE TO FIND OUT

We want to learn more about the effect of genetic differences in people who **do** not have schizophrenia or other mental illness. This will help us understand more about the effect they have on people who do have schizophrenia.

GENES, SLEEP AND MEMORY

WHAT WE ALREADY KNOW

Different parts of our brains communicate with one another as we gather information during the day. Overnight, our brain files away our memories. Evidence suggests that this process varies naturally in everyone.

WHAT YOU DID

At the end of 2014 and the beginning of 2015, 24 participants stayed overnight in a sleep laboratory. They did memory-based tasks and completed questionnaires. This let us measure how genetic differences relate to memory and brain activity during sleep. The participants wore an 'actiwatch' for two weeks. This records activity and sleep information. It told us when they usually go to sleep and wake up. Participants also filled out a sleep diary, recording sleep patterns.

WHAT WE HOPE TO FIND OUT

We want to find out more about how genes influence overnight brain activity in healthy individuals. We are looking at how natural changes in our genes affect our memory when we are asleep Understanding how this works in healthy people can help scientists develop new treatments to help those who are ill.

BEATING BREAST CANCER

WHAT WE **ALREADY KNOW**

Breast cancer affects about 48,000 women in the UK each year and is the most common cancer among women in the UK and worldwide.

WHAT YOU DID

By the end of 2014, 500 participants underwent a breast MRI and other tests. More than 400 mothers gave consent for us to get a copy of their breastscreening mammogram from the Avon Breast Screening Service. Now we can compare the mother's mammogram with her daughter's results. We are now checking all the data and getting it ready for the scientists to analyse.

WHAT WE HOPE TO FIND OUT

HEI

More about the hormones and genes that affect the structure of breast tissue so we can improve our understanding of what causes breast cancer later in life - we hope this will help prevent the disease in the future.

Lots of participants have already helped

us with our research into how memory

works, but we'd like more people to get

involved. Interested? Available? Read

on to find out more and get in touch if

UNDERSTANDING HOW MEMORY WORKS

WHAT WE ALREADY KNOW

People have different versions of genes. This is what makes everyone unique and why everyone who takes part in Children of the 90s is so important. Variations in a version of a gene called APOE have been linked to differences in how people over 60 think and remember things.

WHAT WE'D LIKE YOU TO DO

We would like some young people and some mothers (they don't have to be related) to complete a series of computer and paper-based tasks to look at different aspects of their thinking abilities. We'll compare the results with the participants' DNA and blood samples.

WHAT WE HOPE TO FIND OUT

How differences in the gene APOE affect younger people's ability to think. In time we hope our research will lead to better treatments for people who suffer from conditions associated with thinking and memory loss.

To find out if you are eligible to take part in this project, please get in touch with your name, date of birth and the reference 'memory research'. **117 331 0010**

07789 753722 info@childrenofthe90s.ac.uk

you'd like to take part.

ABOUT YOUR RECORDS

Over the last few years we have written to all the young adults in Children of the 90s asking them if they would allow us

to use their official records - for example, their education or medical history records - in our research. We have collected and anonymised many of these records, except from people who told us they didn't want us to.

Here's what we've been doing with them:

- Hospital records
 - We have used these to research self-harm. You can find out more about this on our website: www.childrenofthe90s. ac.uk/participants/usingyourrecords
- Education records
- We are looking to see how people's health and life affect their education. This includes looking at whether people who were in care have different education or health patterns to people who were not in care

Because of the public benefits that can come from using official records in research, we have been given permission to collect official records from everyone in Children of the 90s unless someone has told us they don't want us to.

If you don't want us to use your records, either for a specific project or in general, please let us know. We will always respect your decision.

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HOW YOUR RECORDS HELP OUR RESEARCI

Deciding whether or not to go to university is down to personal choice and ability. Many young people choose to go to university but for others this is not the right option. We know that people from certain backgrounds are more likely to go to university than others. Recently, the Department for Business, Innovation and Skills (BIS) funded research using information from Children of the 90s. They want to understand what choices young people make about their education and why.

First we processed our participants' information to make sure they couldn't be identified. Then we looked at their school and university records and information about their feelings about university choices. We also looked at what participants and their parents told us in questionnaires about life aspirations.

We are preparing a report to let BIS know what we have found out and they will use this to improve services.

LATEST DISCOVERIES

BINGE DRINKING IN PREGNANCY

We've found that binge drinking in pregnancy can increase the risk of mental health problems (particularly hyperactivity and inattention) in children aged 11 and can affect their school exam results.

WHAT WE DID

- We looked at what study mothers told us in questionnaires about their drinking habits. They did this twice during pregnancy and once more when their child was five years old
- We compared what they told us with information about the child's mental health provided by parents/carers and teachers in questionnaires when the child was 11
- We compared all this information with Key Stage 2 (KS2) exam results from the National Pupil Database

BMI AND ASTHMA

We've discovered that the increase in asthma risk in children may be explained by the rise in body mass index (BMI). The number of people with asthma has been rising steadily over the last few decades. According to Asthma UK, 1.1 million children (1 in 11) and 4.3 million adults (1 in 12) receive treatment for asthma at a cost of £1 billion a year to the NHS.

WHAT WE DID

- We used a special technique called 'Mendelian Randomization' that has been pioneered in Bristol
- We worked out how much of each person's body mass index (BMI), a measure of fatness, could be explained by their genes
- Using only the BMI that we could explain genetically (inherited from parents), we could ignore other things like diet or exercise that could affect both BMI and asthma
- In this way we were able to show that asthma can be caused by being overweight

SMOKING IN PREGNANCY

Smoking during pregnancy can change certain 'marks' on a child's 'genome' (set of genetic instructions) when it is developing in the womb. These changes are radical and can't be reversed. We've found that these marks - known as 'epigenetic' marks - are still apparent almost two decades later.

WHAT WE DID

- We analysed blood from the baby's umbilical cord and blood taken from the same person when they were seven and 17
- We split participants into two groups depending on whether or not their mother smoked during pregnancy and compared their blood samples
- We found persistent epigenetic marks on parts of the genome that we know from previous research are linked to cigarette-smoke exposure

Children of the 90s is the only project in the world where this analysis is possible because it is the only one with DNA samples taken from the same person many times over almost 20 years.

FOCUS@24+

Focus@24+ starts in June 2015 and will run for two years. We'd love you to come and see us for a half-day Focus visit. We can help with your travel and accommodation costs and we'll give you a £30 shopping voucher as a thank you for taking part.

Check out the table to get an idea of what we'd like you to do and why. Some things, like being weighed and measured, will be familiar if you've been to a Focus visit before. Others, like the state-of-the-art 3D body scanner, are new.

THANKS

All the incredible information you have given us over the years means we know an enormous amount about how children grow and develop, and about how early life relates to health now and in the future.

Children of the 90s is a living laboratory, in which each person contributes unique and valuable data. Each piece of information you give us, whether during Focus visits, by completing questionnaires or by giving us permission to access your official records, is vital to our research and will help future generations lead healthier lives.

If you take part in Focus@24+ you will be contributing a crucial piece to the puzzle of human health, and helping us make important discoveries that inform guidelines and policies for health and education.

> Please keep an eye on the post for your invitation to attend Focus@24+ and check out our website and Facebook page for updates. See back page for details.

JUST SOME OF THE THINGS WE'VE DONE BEFORE

HEIGHT & WEIGHT



BODY SCAN

JUST SOME OF

WHAT'S NEW

3D SCAN

THINKING TASKS

WHY?

We use weight and height to calculate body mass index (BMI). This can tell us about many physical and mental health conditions people may develop as they get older.

This type of scan tells us about the body's makeup - how much is bone, fat, tissue, muscle, and so on. Tracking growth patterns over time has shown that rapid weight gain in early childhood is linked with a higher chance of developing asthma.

WHAT WE'VE

FOUND OUT

When a person does vigorous exercise like running or trampolining, their bones get thicker and stronger. We call this 'bone mass'. Higher bone mass now may mean fewer fractures in later life.

WHAT'S NEXT?

As our participants start to have families of their own and enrol them in COCO90s (see page 6), we will weigh and measure their children and compare their growth patterns to their parents.

We will compare our participants' body makeup now and in the future with how it was when they were younger. We will also compare their scan with their parents' scans to see how similar or different body makeup is within families.

WHAT'S NEXT?

WHY?

The measurements from this

WHAT WE'VE FOUND OUT

We will look at the results and see how the body's proportions are connected to health. Do childhood illnesses play a role? What about later health, or chronic illnesses like diabetes?

We will compare the information from these and other Focus@24+ tasks with existing information about our participants to see how different things can affect a person's ability to solve problems.

Some of the mothers in Children of the 90s had a 3D scan so we can look at the similarities and differences between mother and child to see how similar or different family members are.

Lots of things – like experiences, behaviours, and health - can affect how people approach problem solving. Repeating these same tasks at future Focus visits will tell us a lot about how people's ability to figure out problems changes as they get older.

scan tell us about the length of a person's torso (the middle of the body), limbs and the width of their chest.

We solve lots of problems every day. The new thinking tasks will tell us how each person approaches solving different problems, from making sense of images to predicting the outcome of a game or an event.

ARE YOUR DETAILS UP TO DATE?

In order to keep you informed about Focus@24+, we need to know where you are. Please let us know if you've moved recently or changed your phone number or email address by completing and returning the enclosed 'Get in Touch' form or contact us using the details on the back page.

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GET IN TOUCH WITH THE COCO90s TEAM

We would love to hear from you if you or your partner are pregnant, planning a pregnancy or already have a family.

To find out more, please contact our friendly COCO90s team by texting COCO90NL and your name and date of birth to 07772 102649 and someone will call you back for a chat.

WE'VE EXPANDED!

COCO90s

now collect birth samples and carry out reviews of pregnancy records much further afield than Bristol or Weston. If you are due to have your baby at any of the following places you could really help us 'deliver' our research.



WHAT TO EXPECT WHEN YOU'RE EXPECTING

- When you come and visit us, our friendly team will welcome you and your family and help make your visit as enjoyable and relaxing as possible
- Our staff are used to looking after everyone from a first-time mum on her own to a family with several children
- We will start the visit by telling you about the things we would like you to do and asking which you are happy to complete



COCO90s gifts

• Most visits take about 21/2 hours but if you have more than one child or your partner comes too it can take a bit longer

- We want you to feel as relaxed as possible, so everything we do will be carried out at the pace and in the order that best suits you and vour child
- At the end we will give you a £20 voucher to thank you for your time and your child will be able to choose from a range of • We have toys for children to play with and a wide range of free refreshments

FATHERS LIKE FATHER. LIKE SON?

Thanks to all the information Children of the 90s fathers have given us in recent years, we're able to look and see whether the condition of a man's arteries is linked to how his child's blood pressure changes as he or she gets older.

WORI FIRST

When 2,000 fathers came for a clinic visit between 2011 and 2013, we measured how fast their blood travelled down the arteries from the heart. This speed tells us how stiff their arteries are. Stiffer arteries are less elastic and stretchy, so every time our heart pumps out blood, it travels faster if the arteries are stiff. We know from other research that stiff arteries are considered less healthy as they are often linked with high blood pressure and possibly future heart attacks.

By comparing information about the fathers with the wealth of data we have about their child, we can see if fathers with stiffer arteries have children with higher blood pressure.

We are in a unique position to examine whether increases in blood pressure during adolescence are also related to stiffer arteries. No other study in the world has ever done this. If we find a link, then knowing how elastic a man's arteries are could help predict what will happen to his child when he or she gets older. To do this, we will need to carry on seeing our participants and checking their blood pressures over the next few decades.

TIME OF OUR LIVES

MOTHERS

Five thousand mothers have attended at least one of our Focus on Mothers clinics since 2009. Thank you!

With these clinics we want to understand what happens to women as they go through major life changes, like the menopause, children leaving home or parents getting older. We're also really interested in all aspects of their physical and mental health.

As well as Focus on Mothers, we have been working with Dr Isabel de Salis, a medical anthropologist, who has interviewed some mothers at home, and Ian Beesley, a photographer, who has taken pictures of some mothers and their families with the theme of 'Empty Nest'.

Next we are planning a series of creative workshops in April, July and October 2015 and January 2016. There is an opportunity for study mothers to work with lan and Isabel as well as with Ian McMillan (poet). Tony Husband (cartoonist) and Professor Debbie Lawlor (head of the mothers study) to produce a series of short books that reflect what is most important to women and their wellbeing.

Would you like to get involved? Get in touch using the contact details on the back page to find out more.

COMING SOON

One of the biggest health problems affecting the UK at the moment is obesity but little is known about how being overweight during pregnancy can affect the future health of both baby and mum. We are excited to be working with researchers developing new technologies to research this health issue.

From spring 2015 we will be asking participants to help us test a number of exciting new technologies to look more closely at things that can affect a mother and her child during pregnancy. This will include continuous glucose (blood sugar) monitoring, a special diet 'app', a custommade activity monitor that is worn on the wrist, and additional ultrasound scans.

HEALTHY MUMS, DADS AND BABIES





We can learn a huge amount about the causes of health and well-being by comparing children from the same family. We also want to gather some information so that we can study siblings in their own right. Many brothers and sisters have already said they want to be involved now is their chance!

A big thank you to the many hundreds of siblings who have already signed up to take part in Children of the 90s. In 2015 we will be sending a questionnaire and saliva sample pack to everyone who has already enrolled. If you've signed up to take part but haven't yet received anything, keep an eye on the post. Your pack is on its way!



Another big thank you, this time to the study mothers who told us in their last questionnaire about other children they have who would like to take part. We'll be contacting them in 2015 too.

If you have a brother or sister who is 16 or older and who would like to get involved, please get in touch. www.childrenofthe90s.ac.uk/participants/siblings **2 0117 331 0010**

info@childrenofthe90s.ac.uk



In 2015, we'll be contacting all the original Children of the 90s mothers and fathers to ask them if they can help us to involve their parents too. Where we can collect DNA from grandparents, we will in many cases have genetic material on three generations of the same family – and in some cases four generations where COCO90s are enrolled too. This puts us in a unique position among studies of our kind and will provide an incredibly powerful resource to look at the importance of our genes across four generations.

WELL DONE!

Congratulations to our scientific director, Professor George Davey Smith, and our head of DNA collections, Dr Wendy McArdle, who have been named by Thomson Reuters in their report, *The world's most influential scientific minds:* 2014. It lists 3,200 people across 21 fields who have published the highestimpact work that is most frequently acknowledged by other academics. Only the top one per cent of scientists were selected for inclusion in the report.



Professor George Davey Smith



Dr Wendy McArdle (front row, 2nd from right) with her lab team

DID YOU KNOW?

We have more than 1,000 Twitter followers.



We've updated our privacy policy. It explains how we use your personal information (like your name and address). The new policy is available by calling 0117 331 0010, or on our website at www.childrenofthe90s.ac.uk/participants.

We run regular coffee mornings for our COCO90s families. It's a great opportunity to meet and chat with other parents the same age. Keep an eye on our website and Facebook page for forthcoming dates.



HELLO, STRETCHYGENE!

Recognise this little yellow fellow?

You might if you've attended one of our Focus visits in the past. You might even have one gathering dust at home. His name is stretchygene and he's just joined the world of Twitter (@stretchygene).

He's curious about everything that goes on at Children of the 90s and loves to travel. If you have a stretchygene why not share your pics of him on our Facebook page (facebook.com/childrenofthe90s), on Instagram (Children of the 90s) or tweet them with the hashtag #stretchygene.







It's not too late to complete our latest questionnaire online at www.childrenofthe90s.ac.uk/ questionnaires or get in touch (contact details below) if you'd like us to post one to you. We'll send you a £10 voucher as a thank you when you've completed it.

GENERAL ELECTION 2015

In our latest questionnaire, we asked study participants some questions about the 2015 General Election. We asked whether they planned to vote, which party they might support and which political issues are most important to them. Based on answers from 2,000 participants, almost two thirds (63%) said that they plan to vote but nearly one in five (18%) said they didn't plan to, with another 19% unsure.

Males are more likely to intend to vote (69% vs 59%), while females are more likely to be unsure (22% vs 15%).

Which issues are most important to you?

Of those who don't plan to vote, nearly two thirds (62%) said it was because they had no interest in politics (57% male, 64% female) and just over a quarter (28%) said it was because it will make no difference (34% male, 26% female).

Check out our website after 7 May 2015 to see how our participants' voting intentions and priorities compare with the national picture!

www.childrenofthe90s.ac.uk/participants



Will you

Children of the 90s, Oakfield House, Oakfield Grove, Bristol, BS8 2BN

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- Watch us on YouTube at children90s
- Listen to us on SoundCloud

HAVE ANY OF YOUR DETAILS CHANGED? NEED MORE INFORMATION?

Please get in touch!



Scan this QR code to go straight to our website





Avon Longitudinal Study of Parents and Children