Environmental Risk Longitudinal Twin Study
(TEDS-Environment Study)

E-RiSK Environmental Risk Longitudinal Twin Study

Summer 2018

We're Rebranding!

From now on we will be known as the Environmental Risk (E-Risk) Longitudinal Twin Study or E-Risk for short.

Our decision to change follows your growth and our growth; as you enter your twenties, we have grown alongside you through research and discovery.

Along with the new name change comes a different colour scheme from red to purple and a new logo which appears in the top right-hand corner. Did you notice the double 'i'? We hope you like it!

All About You

You have devoted lots of time and effort to our study since 1998, giving us valuable hours of your time!

- You told us that you sleep for 7 hours on average, per night—this is in line with the National Sleep Foundation's suggestion of 7-9hrs a night for individuals your age!
- 18% of you could speak a second language when we last came to visit you at age 18, we hope you keep it up!
- 4 out of 5 of you gave blood the last time we saw you, which we have now used to look at your DNA
- 3/4 of you had applied for a job the last time we saw you, and 3/4 of you got an interview!

All About Us

We aim to build knowledge about the development of behaviour as a result of the environment in which you live, and we want to learn what makes some twins similar to each other and some twins different from each other.

- We visited 2,066 of you when you were 18 years old
- Your commitment has contributed to the success of over 113 written research articles
- Our research has featured in the likes of Wall Street Journal, BBC Radio, New York Magazine, and the London Evening Standard
- We have collaborators from over 15 different countries, including USA, New Zealand, Canada and Brazil!

Turn to page 4 to find out about our upcoming study...

Can you recognise who came to visit you?

Contact us via Facebook!

You can find us on Facebook, just follow the link below:

https://www.facebook.com/janis.attedsenvironment

Or if you have a smart phone, simply go to Facebook messenger, and scan the code below, this will take you to the page ready to send us a new message.

FUN FACTS ABOUT TWINS!

Male twins will not have twins unless their partners have the ability to produce two eggs.

22% percent of twins are left handed, compared to 10% of singletons.

EPIGEN

Until recently, many believed that all of our characteristics were shaped by nature (our genetic information inherited from our parents), or nurture (the influence of our environment). However recent research findings have suggested that it may be a combination of both nature *and* nurture that shape our development.

Epigenetics, the science of how the environment influences the expression of genes, has evolved as a new way of studying changes in your body, proposing that the experience of our parents and grandparents may be passed down to us. Your genes are short sections of DNA, and act as a set of instructions for your cells. Throughout your life, different genes are switched on (are 'expressed') and off in response to biological factors such as ageing, or environmental factors like stress, nutrition and smoking.

Findings from E-Risk

Asthma

How epigenetics can help scientists to better understand this common disorder.

Asthma is a long-term health condition that inflames and narrows the airways, causing recurring periods of wheezing, shortness of breath, and coughing. It is the most common of its type in children, and affects around 235 million people worldwide.

It can be triggered by many things such as a cold or flu, allergens, weather conditions, or exercise, and these will cause the airways to become narrow, and clogged with a sticky mucus.

Asthma has been thought to involve nature (genetics) and nurture (the environment), both of which play critical roles in its development.

Decoding your complete gene set was the first step in our journey in understanding how involved genes are in causing asthma.

Recently, scientists have identified the link between genes and the environment in asthma, using a mechanism called epigenetics (explained above).

Since then, they have also identified a layer of information that sits on top of our DNA, that can tell our DNA what to do. This is called the epigenome.

Here at E-Risk, we have been looking at asthma and the different ways in which our genes are told what to do by examining the mechanism that controls how much a gene is turned on or off. Understanding this will facilitate the identification of young people at an increased risk of asthma.

Our results have been published in the scientific journal 'Clinical Epigenetics', and suggest that people with long term asthma from childhood to early adulthood show different patterns at certain genes, than those with asthma that disappeared in early adulthood.

We have now continued this study to look at both changes and differences in individuals at age 18 with asthma, and have also started thinking about people with nasal allergies to things like dust or pollen, and we are comparing their epigenetic patterns to individuals without a history of either asthma or nasal allergies.

We hope that this work will further our biological understanding of asthma and nasal allergies in early adulthood, and such knowledge may help scientists develop new tools to better detect or treat these disorders in the future.

Follow this link to read more of our research on asthma: https://goo.gl/oU5lBI

NETICS

This dynamic biological process, governed mainly by epigenetic mechanisms, demonstrates how genes and the environment interact continuously to produce characteristics during a lifetime.

Here at E-Risk, we are using epigenetics to examine how social exposures such as stressful life events can 'get under the skin'. Stress is a normal adaptive response; however, prolonged exposure to severe stress may have immediate as well as long-lasting damaging effects on learning, behaviour, and health. We hope that the findings from our study will help us with early detection of the biological impact of severe stress exposure which will ultimately aid prevention efforts.

FUN FACTS ABOUT TWINS!

40% of twins invent their own language.

Once you give birth to twins, you are 3 to 4 times more likely to have another set of twins!

Findings from E-Risk

ADHD

Does ADHD always start in childhood? New results from E-Risk suggest maybe not.

ADHD (attention deficit hyperactivity disorder) is characterised by problems in keeping still, trouble concentrating, and being impulsive. Someone with ADHD may not be able to sit still or concentrate for a long period of time, have difficulty in paying attention and get easily distracted, or always appear to be 'on the go'.

While we know now that adults can have ADHD, it is still widely accepted that ADHD begins in childhood. However, here at E-Risk we have found that ADHD may not be apparent until young adulthood- nearly 70% of you who met criteria for ADHD at age 18 did not have the disorder according to mums and teachers when you were children!

We also found that many of you with childhood ADHD grew out of the disorder as you got older. Amongst those of you who had ADHD as children, 78% of you no longer met the criteria for ADHD at age 18. So, it seems that ADHD does not necessarily always last until adulthood!

These findings suggest that adult ADHD is more complex than simply the continuation of the disorder in childhood. Our research has important implications for young adults living with ADHD. Given that the majority of you with ADHD at age 18 did not show the disorder in childhood, we hope that these discoveries will raise awareness that ADHD can occur beyond childhood, and encourage adults to seek support even if they did not have an ADHD diagnosis as a child.

Jessica Agnew-Blais receiving an award from the Mental Health Foundation, for her research on ADHD.

What is late-onset ADHD?

Late-onset ADHD is the term used to describe the development of ADHD after childhood. We have been thinking about why later appearance in ADHD might happen...

It could be that those with late-onset ADHD did in fact have ADHD as a child but it was masked by a particular family environment. Or maybe symptoms of inattention or restlessness come from other disorders like depression or anxiety. Finally it may be that late-onset ADHD is different to childhood ADHD and needs to be treated as a distinct disorder. More research is needed to find the possible explanations!

Follow the link to find out more : https://goo.gl/yiuwde

Mental Health Foundation

Studying for a PhD

Here at E-Risk, we have many students training in post-graduate study. Here are some top tips from a student who has completed her PhD with us!

How did you get there?

I grew up in Germany and was always interested in psychological research, so decided to study psychology at university. The research topic I was most curious about was to do with development, such as why people turn out the way they do and how childhood experiences influence the course of people's lives. I moved to the UK to start my MSc in Neuroscience and knew as this neared its end, that I wanted to stay in academia. No one in my family had ever even gone to university so I thought it was nearly impossible to get on to a post-grad programme. However, I ended up applying and was lucky enough to get accepted at Kings College London for Developmental Psychopathology.

What is it like studying as a post-graduate?

The majority of post-graduate students spend a lot of time collecting their data to analyse for their research.
Most of my time however is spent analysing the data that was collected by the research workers who came to visit you. With the data, we can analyse how various experiences impact the course of development from childhood through to teenage years and young adulthood and write up a research paper.

Research papers make other researchers, policy makers, clinicians, and the general public more aware of the need to promote individual health and wellbeing. Presenting my work at conferences all over the world gives me the opportunity to travel to new places and meet researchers from a number of different countries.

What should I do now?...

The first step is to find a study discipline that you are interested in and that you would like to study at university.
If you enjoy university and decide to stay in academia, look out for projects and funding advertisements that you can apply for with academics who share your interests... And finally, good luck!

- Jasmin Wertz

We Are Planning to be In Touch....

We will be sending out a short survey which you will be able to answer electronically through your mobiles. The survey will help us to keep in touch and to learn more about how you are spending your time these days – both online with respect to social media and internet usage and offline in terms of school, work, and other activities. We are also interested in your views on what the future holds for you and for the country. We are excited to start this new project and can't wait to hear from you!

Thank You

The E-Risk team would like to thank you for all of your support and cooperation over the last few years! Twins like you are so important to research as you help to reveal the importance of environmental and genetic influences. Without your help, none of our research could have happened!

Stay in Touch!

Here at E-Risk we love keeping up to date with what you're up to.

If you know that you or your twin are moving house any time soon, let us know! Just fill in the Change of Address card, and send it back to us using the freepost label, to this address:

E-Risk Study Research Centre
Department Box Number PO80
FREEPOST LON7567
London
SE5 8AF

If it is easier for you, you can always send us a message via Facebook using the link below, or scanning the code above with a smart phone

https://www.facebook.com/janis.attedsenvironment

Or simply call us on **0207 848 0021**

MRC Medical Research Council

KING'S College LONDON