



gemini

health and development in twins

Newsletter

ISSUE 2

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Gemini

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Hello from the Gemini team!

Welcome to the Gemini Newsletter. 2009 has seen the Gemini twins celebrate their 2nd birthdays! Meanwhile the Gemini team has been celebrating the amazing dedication and enthusiasm of all the families taking part. We would like to take this opportunity to thank you for your invaluable help with this ground-breaking study! Happy reading...



Geminites Julianne & Rachel

RESULTS so far...

Many of you have expressed interest in hearing about what we have found so far in Gemini. We now have some exciting new results to share. Do you remember answering questions about your babies' appetites in the very first questionnaire? We have used this information to find out whether genes or the environment play a more important role in the development of appetite in very early life.

The first questionnaire measured 4 aspects of appetite during the first few months of life when most babies are only fed milk: 'enjoyment of food' finds out how much babies like milk and feeding; 'satiety responsiveness' captures how easily babies get full during feeding; 'food responsiveness' measures how demanding babies are regarding being fed; 'slowness in eating' is about a baby's feeding speed. We were able to compare the identical and

non-identical twin pairs in Gemini to work out how much each of these feeding traits were influenced by genes and the environment (read the interview on page 2 to find out more about how we use twins to understand genetic and environmental influences). We have discovered that genes are playing a really important role in all aspects of appetite during this period of life. Genes were the most important influence on babies feeding speed, their tendency to get full, and how demanding they are with regard to being fed. Both genes and the environment played equally important roles in influencing babies' enjoyment of milk and feeding.

What next?

Knowing that genes play such an important role in appetite is an important finding. The next step is to find the actual genes that are influencing these traits. We are going to use the DNA samples that we recently collected to help answer this question.

Interview with a Member of the Gemini Team

Clare Llewellyn is a PhD student working on the Gemini study. Clare answers questions about Gemini and her role in the study.

"I love researching twins – they're so fascinating"



How did you become involved in Gemini?

I did my Masters at UCL on a different twin study called the Twins Early Development Study (TEDS). TEDS is a large study of older twins, who are now teenage. I looked at whether the speed at which you eat – literally, the number of bites per minute – is influenced by genes. I then wanted to continue researching with twins. I love looking at twins, they're so fascinating.

What is the Gemini study investigating?

The Gemini study is examining how our genes and the world around us shape how we eat, move and grow. There are probably lots of things that influence our weight, including a number of different genes and many things in our environment. The question that we are asking is "How much do our genes and our environments influence growth in early life?" At the moment we know very little about the basic biology that influences weight. This is why Gemini is such an important study.

Why are twins so useful for your study?

Twins are a perfect natural experiment. Identical and non-identical twins share a very similar environment; they grow up in the same house with the same parents.



The difference is identical twins share 100 per cent of their DNA, but non-identical twins on average only share about 50 per cent. This means we can compare how similar identical twins are with how similar non-identical twins are. If identical twins are more similar in a certain trait than non-identical twins then we will know genes have a big influence on this trait. Whereas, if identical twins are as similar as non-identical twins then we will know that the environment has a big influence.

When is the study scheduled to finish?

The funding that we have takes us up to 2012 when the twins will be five years old, but we're very much hoping to get funding for longer. We're finding out so much about the twins' early development it would be great to see how this affects them as they grow up.

Is there anything about Gemini so far that has surprised you?

We been thrilled by the level of interest and enthusiasm from parents – they continue to complete the questionnaires and the diaries, and if they get stuck they ring us. We've had really great feedback.

Thank you to Gemini Parent Amanda who came up with these questions. An extended version of this interview is featured in the Finchley Twins Club magazine and copies are available on request from the Gemini team.

TTTS Facts:

★ Twin to Twin Transfusion Syndrome (TTTS) is a disease of the placenta that affects identical twin pregnancies in rare cases.

★ TTTS only occurs in identical twins that share a single placenta.

★ The shared placenta contains abnormal blood vessels which connect the umbilical cord and circulations of the twins.

If you would like to share your story with the Gemini team we would love to hear from you. Please send your stories and photos to:

Gemini@public-health.ud.ac.uk

Gemini Family Story

A difficult beginning

We consider ourselves extremely fortunate to have our beautiful twin sons. At 25 weeks gestation we discovered the twins had developed Twin to Twin Transfusion Syndrome (TTTS). Medical intervention was not an option and we endured a five week waiting game. Alexander had little blood supply and relied on his brother's heart to pump the blood back to him. The increased blood supply to Zachary put him in danger of cardiac arrest and should that have happened we would have certainly lost both boys. A huge thank you to the John Radcliffe Hospital in Oxford who made a very emotional journey a little easier to understand and bear. The twins were delivered via Caesarian section at 31 weeks and spent a further five weeks in the Special Care Baby Unit. Alexander weighed 3lb & Zachary 4lb 1oz.

'A magnificent gift'

The twins are now approaching their second birthday and are the most magnificent gift we could have ever wished for. They are both very in tune with each other and certainly have a "Twin Thing" going on. They have an older brother who is four & two half brothers of fifteen & six-



Alexander and Zachary

teen. All the boys have an amazing bond together and provide a chaotic & fun environment to share.

'Twins are a human magnet'

Alexander & Zachary are exceptionally good boys and make motherhood a pleasure. In contrast my four year old would prove a good challenge for the likes of super nanny! As lots of Gemini families will understand, it is extremely tough for an older brother or sister to twins as they receive little to no attention in comparison. I often find my self avoiding public places as the twins are a human magnet which compiles the frustration for my four year old.

"Being part of the Gemini Study is wonderful"

Being a part of the Gemini study is wonderful and interesting and although time is forever occupied we shall always make time to take part in their research.

A big thank you to April Hill for sending us this story about her family.

DNA



A big THANK YOU to everyone who has collected cheek cells so far. We have been delighted by the positive reaction to the Gemini DNA study.

DNA collection is very important as it will allow us to improve understanding of the genes that influence the way we eat and grow.



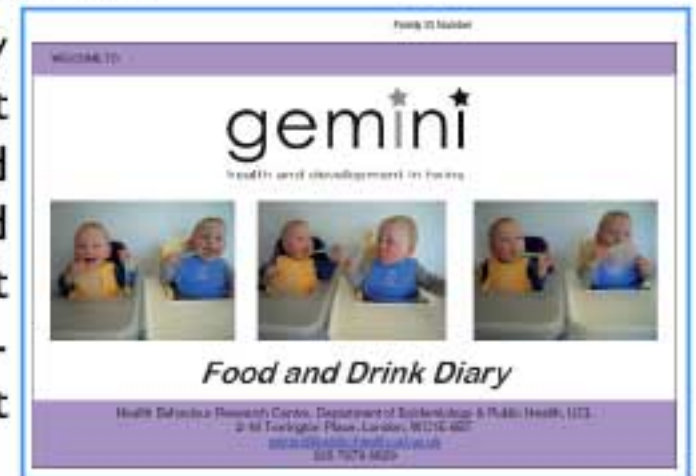
If you have not yet returned your DNA collection kit then there is still plenty of time so please get swabbing!

Food Diaries

We're so grateful to the 1300 parents that completed the diary. It was a big challenge and time consuming so THANK YOU VERY MUCH!

Now the diaries are being converted into food and nutrient intakes by experts in nutrition at the Medical Research Council in Cambridge. They have told us: "The diaries have been completed really enthusiastically. The detail in them is too good to be true, we are not used to diaries being completed so well!"

If you still have a diary at home, even with just 1 or 2 days completed it's not too late to send it in. We'll still accept any diaries you can return so please try to get them in the post to us.



Thank you for measuring Growth

We have been really pleased with the number of families using the Gemini Growth chart and weighing scales to measure their children's height and weight.

THANK YOU for letting us know how much you and your children are enjoying the process. But it seems not everyone is impressed... We have heard several amusing stories of children tearing down, drawing on and even eating the height charts!!!

If this (or something similar) has happened to you, let us know. We are more than happy to send out replacement charts!



Gemini twins Carys and Isobel enjoy measuring each other's height (but when you measure your children for the study please make sure an adult is in charge!)

If you haven't begun to measure your twins' height and weight yet then it is time to start!

It would be great if you could record your children's growth every 3 months. You can write these measurements on the Gemini growth chart. Then, next time we send you a questionnaire you can copy in all the heights and weights you have. You can also send us growth updates using our online form.

"Enter heights and weights online at:
www.geministudy.co.uk/gemweight"



Season's greetings from the Gemini team

