

THIS ISSUE

★ Gemini in
2014

★ Twin within
the Gemini
team!

★ Gemini in
the press

★ Sleep and
diet studies

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NEWSLETTER

GEMINI RESEARCH IN 2014



Gemini Twins Esther and Ruby

Gemini news in 2014

Stephanie Schrempf, one of the Gemini PhD students, passed her PhD viva examination in the summer with flying colours. Dr Schrempf is now a post-doctoral researcher at UCL, and continues to be involved in Gemini as well as other projects. We have a new addition to the team – Andrea Smith has just joined Gemini as a PhD student. We are particularly excited as Andrea is an identical twin herself! You can read an interview with her about life as an identical twin, and her research interests on page 2.

Using our findings from Tiny Tastes

In last year's newsletter we told you about our results from the Tiny Tastes study - a game that encourages children to eat more vegetables, by making it fun. This year Hayley Syrad, one of the Gemini PhD students, spent two months working with Nutricia Ltd and used Gemini research to inform health care professionals about the importance of starting weaning with vegetables. Your participation in Gemini is having a big impact so thank you all so much for your help!

Welcome to the 7th Gemini newsletter

It's now seven years since the Gemini study began. In this time we have been extremely active in research; resulting in the Gemini study becoming increasingly well-established among researchers in the area of childhood growth and development. We would like to take this opportunity to thank you for your longstanding involvement in the study, and for continuing to send in your twins' heights and weights, and other information to keep the research moving forward. 2014 has been an exciting year for Gemini - we have published new research which has had widespread press coverage, attended scientific conferences, won awards for our research, and sent you another 3-day diet diary for your twins. A small number of families have also received packs to collect poo samples from your twins! We hope you enjoy reading about the highlights of 2014 in this newsletter.

Research into sleep and early diet

Many parents are interested in the topic of children's sleep; as many of you will know when children are poor sleepers the whole family can be affected. Laura McDonald, one of our PhD students published a number of studies about sleep this year. She explored the reasons why some toddlers are poorer sleepers, and whether children who are worse sleepers have different eating habits. Her research had a lot of press coverage; you can read about it in more detail on page 3.

Further work by Hayley Syrad used information from the 3-day diet diaries that you completed when your twins were around 2 years old, to find out the role of formula milk in some children's diet at this age. You can read about this research on page 2.

Clare Llewellyn, Gemini Study Coordinator.

INTERVIEW WITH NEW TWIN PHD STUDENT

I recently joined the Gemini team after completing a Masters Degree in Public Health at Cambridge University. My undergraduate degree was in Biomedical Science, and I have always been fascinated by research into genetic and environmental influences on health, behaviour and weight. The reason for this enthusiasm is quite simple: I myself am an identical twin. I have always been intrigued by the observation that twins can be so alike in certain aspects, but so different in others. For example, my mother has told us that as a baby I had a much larger appetite than my twin sister (even though we are genetically identical) and that I would regularly pinch her food! I was also born bigger and am 4 cm taller than her now.



*Andrea Smith is a PhD student studying food preferences in Gemini.
Andrea is on the right, and her identical twin sister is on the left*

What will your research focus on?

My PhD research will focus on understanding where food preferences come from, and how they relate to weight. In particular, I will use the twins and the DNA that you sent us to understand whether genes or environments are more important in shaping the development of food preferences in children.

Why is this important?

At the moment we know very little about food preferences, and how they relate to weight and actual eating behaviour in early life. Gemini provides an exciting avenue to advance research into the relative importance of genes and environments to food preferences, and to explore how they relate to the development of weight over time. We hope that this research will help us to improve parental feeding advice. I am looking forward to being part of the Gemini team!



FORMULA MILK AND APPETITE

Some of you took part in an interview with me last year to explore the role that formula milk played in your twins' diets when they were toddlers. This research showed that toddlers who were still having formula milk generally had a poorer appetite for food, and ate less solid food than toddlers who had moved onto cows milk.

These findings suggest that formula milk may be being used as a substitute for food when toddlers are poorer feeders. This research was presented at the UK's annual conference for the Association for the Study of Obesity (ASO), and is about to be published in a scientific journal.

Hayley Syrad is a PhD student studying eating behaviour and weight in Gemini

GEMINI IN THE PRESS!

Earlier this year we published a paper using the diet diaries and sleep questionnaires you completed when the twins were around 15-20 months old. Recently a number of studies have come out showing that children who are shorter sleepers are more likely to be overweight, but we weren't sure why. We showed that children who were shorter sleepers tended to eat a little more. These findings were really novel and important, and were picked up by the media. The study was on the front page of the Telegraph, along with other papers.

The Telegraph

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Toddlers who sleep less eat more

Toddlers who sleep for less than 10 hours consume far more calories, study finds



Previous research has linked lack of sleep with obesity but this is the first study to show a direct link between the two

calories consumed in children so young. Photo: Alamy

By Laura Donnelly, Health Editor

7:00AM GMT 25 Mar 2014

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Sleep link to obesity

BABIES who sleep less end up eating more which puts them at a greater risk of becoming obese, a study has revealed.

It showed infants aged 16 months who slept less than ten hours a day consumed a tenth more calories than those who slept 13 hours.

Dr Abi Fisher, of University College London, said: "The key message here is shorter sleeping children may be prone to consume too many calories. It's something parents should be aware of."

Children getting less than ten hours ate on average 105 calories more a day than those sleeping 13 hours or over.

The Child Growth Foundation's Tam Fry said: "Babies become irritable so parents give them more food to soothe them believing that it's an act of love. It's an easy solution because they are getting on their nerves and it's a form of pester power." The

Warning ... Tam

By NICK McDERMOTT
Health Editor

research – which looked at 2,500 twins – is published in the International Journal of Obesity.

A second study suggests GPs should prescribe sleep to adults to combat obesity and diabetes.

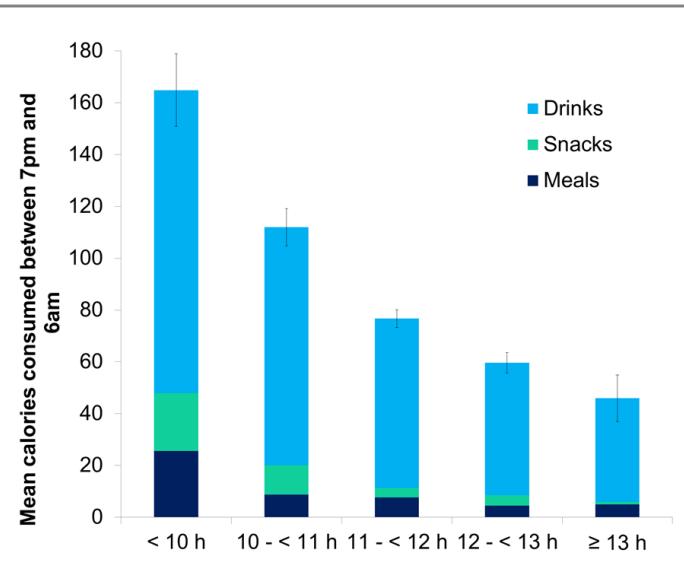
● **MUMS** to-be who eat a lot of fat during their pregnancies increase their child's risk of developing Alzheimer's in later life, experts warn.

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the-sun.co.uk

In Gemini, we have been very interested in understanding your twins' sleep; in particular what determines how long your twins sleep for at night, and what impact this might have on other behaviours important to health. Some of our most recent work has tried to understand whether how much sleep your twins get at night influences how much, when and what they eat. In last year's newsletter we presented some findings showing that shorter sleeping children tend to consume more calories throughout the day. Using the diet diary data you provided, we showed that children sleeping less than 10 hours a night consumed about 100 calories more each day compared to children sleeping more than 13 hours a night. This information was collected when your twins were around 16 months old; at this age most children sleep around 11 hours each night.

This year, we explored the diet diaries further to try and identify the time of day shorter sleeping children were consuming the extra calories, and what types of foods they came from. We found that shorter sleeping children were consuming all their extra calories at night, and they came almost entirely from milk drinks. We know from other studies that this is a common strategy used by parents to help children get to sleep at night.

The graph below shows calorie intake at night (after 7pm) by sleep duration. This illustrates that as children sleep less, their night-time calorie intake increases, and that the vast majority of calories at night were from drinks.



We know that shorter sleeping children are at greater risk of unhealthy weight gain, so we think these findings could lead to simple advice to parents to avoid excess calories in night-time drinks for young children, particularly among those children who have difficulties settling at night. The key message here is that parents should be encouraged to soothe to sleep rather than feed to sleep.

Laura McDonald is a PhD student studying sleep and eating behaviour in Gemini



THE 3-DAY DIET DIARIES



Gemini twins Jack and Thomas

Many of you will remember completing 3-day diet diaries for your twins when they were about 2 years old. We are extremely grateful; you created the richest dietary dataset in the UK for children of that age with detailed dietary information on more than 2700 2-year old children. It was such a successful task that we have decided to collect them again now that the children are 7 years old. This will allow us to understand how early diet relates to later diet, and explore childhood eating habits and growth. We know that this is a big challenge and very time consuming so **THANK YOU VERY MUCH** if you have done it a second time!

The diaries will be converted into food and nutrient intakes very soon by experts in nutrition at the Human Nutrition Research Centre, at the University of Cambridge. If you still have a diary at home 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!

THANK YOU FOR MEASURING GROWTH

We are continuing to collect height and weight information, as this will allow us to track important growth patterns, and see how the information we collected between birth and 5 years relates to your twins' on-going growth and development. So please do keep sending in your measurements. You can use our online form to submit measurements: www.geministudy.co.uk/gemweight or email them to us at: gemini@ucl.ac.uk.



Twins: Rudy and Trey

Thank you all for your continued support and providing us with measurements as it is extremely important for our study. If you have found it hard to submit heights and weights every three months, please remember that providing any measurements at all is still very helpful for our study. If your Gemini weighing scales or height charts need to be replaced, please don't hesitate to contact us and we will happily send you some more.

