



Genetics of Obesity Study

November 2013  
Volume 1, Issue 5

# GOOS Newsletter

## Winter 2013

We started our Spring newsletter with the words “winter seemed to go on forever” and here we are, heading towards another!

It has been a memorable summer here in Cambridge, not only because of the fantastic weather but with respect to some ground breaking developments that have resulted from the hard work of the entire team.

We reached the amazing milestone of entering the 5000<sup>th</sup> patient into the GOOS study which Dr Farooqi started way back in 1998. It is this study that has been the foundation for all of our research.

Also, in May, some of our MC4R patients and family members took part in the early stages of a trial of treatment in the USA (read more later). And, to top it all, we identified a new gene that has caused much excitement not only to ourselves but throughout the scientific community (see Dr Farooqi’s update).

Thanks to all of you and your families. It is only with your help that we can progress our work towards learning as much as we can about the causes and effects of severe weight problems, which we hope will lead to further treatment opportunities.

I would like to take this opportunity to thank all of you who have provided us with your up to date contact details and those of you who have signed up for our e- newsletter via our website (<http://www.goos.org.uk>). We have had to take the decision that this newsletter will be the last to be sent out by post due to the overheads involved, so if you haven’t done so, please sign up now (<http://www.goos.org.uk/resource-centre/newsletters>).

In our last newsletter, I had suggested the idea of a “Buddy Scheme” for putting people in contact with one another. Unfortunately, only 2 people expressed an interest in this, so we will need to put this on hold for now. But, if you have some ideas and suggestions or would like to share your experiences with others, please let us know. Have a look again at our “Personal Experiences” section on the website (<http://www.goos.org.uk/patients-and-families/personal-experiences>). Be inspired! We want to hear from you!



### INSIDE THIS ISSUE

News from the Professor..	2
MC4R Trial Update .....	2
GOOS Focus Group .....	3

## Latest News and Updates from Dr Farooqi

Our team has recently been in the news as we have discovered a new genetic cause of severe obesity. Although relatively rare, it is especially exciting because it is the first time a gene has been shown to reduce a person's metabolic rate – how the body burns calories. Previous studies in the USA had shown that when the KSR2 gene was deleted in mice, they became severely obese. Because of this work, we decided to investigate whether changes (mutations) in this gene might also be the cause of severe weight problems in our patients.

In collaboration with Dr Ines Barroso's team at the Wellcome Trust Sanger Institute, we looked at the DNA of over 2,000 patients and found multiple mutations in the KSR2 gene in some of these patients.

KSR2 belongs to a group of proteins called "scaffolding proteins," and are important in ensuring that signals from hormones, such as insulin, are correctly processed by cells in the body for the regulation of how cells grow, divide and use energy.

We wanted to know how KSR2 mutations might lead to obesity and our team in the laboratory were able to show that many of the mutations disrupt these cellular signals and, importantly, reduce the ability of cells to use glucose and fatty acids.

Until now, the genes we have identified that control body weight have largely had an effect on appetite. People have speculated for a long time that some people may burn calories more slowly than others, and now, for the first time, our team has demonstrated that changes in the KSR2 gene can indeed affect a person's metabolic rate and how their bodies utilise calories. In the future, modulation of KSR2 may represent a useful therapeutic strategy for both obesity and type 2 diabetes.



---

*"Our team has recently been in the news"*

---

## A Trial Treatment for MC4R Deficiency

A small group of our patients and family members went to the USA this summer as part of an early phase trial of treatment for MC4R deficiency. Thank you to those who agreed to take part.

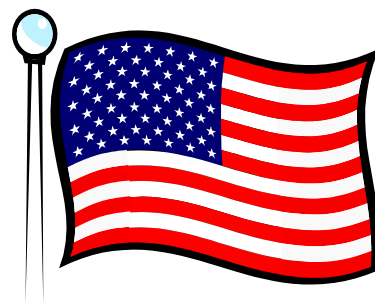
Early results from this trial are looking really good and we have just heard that the next phase of the trial will begin here in Cambridge, overseen by us.

As you can imagine, there are a lot of legal arrangements and plenty of paperwork to complete before a trial of a new treatment can take place but we do expect this to begin in 2014.

We will let you all know as soon as we have more information, probably via our website as and when we receive any updates. Meanwhile, any of you that may be interested in taking part, please make sure that we have your latest contact details. It is also not a bad idea to let us know the best way to

contact you and indeed the best times (if it is by telephone).

We've waited a long time together, let's now look forward to what 2014 has to offer!



## Focus Group

We want to start a Focus Group and we want your help.

### So what is this all about?

We want to learn more about your experiences, your problems, your needs, your expectations. It is your knowledge that can provide the insights to help us to direct our research. We want to learn from you, the experts.

### So what would this involve?

Firstly we need to see how many of you may be interested in taking part. If, as we hope, a good number of you are interested, then we will need to consider how, where and when the group/groups will meet and what will be discussed.

### What would happen at the meetings?

Focus groups normally have between seven and ten people who have been invited to discuss specific issues in an open and relaxed way. It is important to hear all sides of an issue – both the good and the bad.

### What sort of issues would be discussed?

We would want to discuss issues that are both important to you and indeed to us. Some possible areas for discussion could be:

- Taking part in a trial of treatment
- Your experience of visiting Cambridge for investigations
- How can we educate teachers, social workers, health professionals about obesity?
- Potential new studies: would you be happy to take part?
- Should we have a clinic and see you more regularly?
- Practical issues: clothing, travel, exercise, nutrition

These are just a few ideas, there are many other topics. Please think about whether you would like to take part and let us know either via our website or by contacting us directly.

Let us know what you want to see on our website and in our newsletters.

Visit GOOS at [www.goos.org.uk](http://www.goos.org.uk) to meet our team and learn more about our work.

Or email us at [info@goos.org.uk](mailto:info@goos.org.uk) to stay up-to-date with what we're doing and how you can get involved.

If you would like to know more about our new studies, contact us at [info@goos.org.uk](mailto:info@goos.org.uk)



Genetics of Obesity Study

