Genetics of Obesity Study

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Preparation for the Future

I have called this introduction "preparation for the future" although I could have equally called it "what makes us to come into work every day?" Let me explain:

If you have read any of our previous newsletters and had a look at our website (www.goos.org.uk), you will have seen that our team has been growing and changing, reflecting the on-going success of our work. New technologies have been available to us and we are not only making new discoveries but learning about what this means to you, our patients. We have been busy undertaking a number of new studies here in Cambridge, thanks to the help of the many willing local volunteers.

You may wonder why we invite volunteers to take part in our studies? Well, such studies allow us to compare what we find in people without a gene problem to what we see in our patients that do have a problem with a particular gene. We can learn a lot about what a particular gene may or indeed may not do from such studies. On page 4 you will be able to read about one of our more recent studies. We hope this will be a regular feature.

Of course, we want to find out the cause of weight problems in all our patients and so every new finding, no matter how small, is exciting to us. It adds another piece to what could be seen as a rather large jigsaw puzzle, making the final picture just a bit easier to see!

But of course, what really drives us on and makes us come into work everyday, is the aim of finding a treatment for you, our patients. So if you don't hear from us for a while, don't worry, we have not forgotten you, we are just working hard on your behalf. And, please, keep in contact with us, let us know how you are, whether there has been any changes in your health or if you have moved house or changed your telephone number.

We want to be prepared for the future, so please, make sure we can contact you.

INSIDE THIS ISSUE

SPECIAL POINTS OF INTEREST

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

Visit GOOS at www.goos.org.uk to meet our team and learn more about our work.

Or email us at 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

News From The Professor

I recently spoke at a meeting in New York which was held to celebrate the 20th anniversary of the discovery of leptin. The meeting was held at the Rockefellar University which is in New York City, infact on Manhattan Island close to the Empire State Building and Central Park. Professor Jeffrey Friedman, a Physician and Scientist, was the man who first discovered leptin in 1994 after several years of painstaking work. When others had given up, he persisted convinced that the finding would be important. And, of course, he was right. The discovery of leptin paved the way for understanding how the body regulates the food we eat and the calories we burn. As it turned out, the discovery of leptin was only the beginning. Professor Jeffrey Flier, from Harvard Medical School in Boston made another key advance when he worked out that leptin levels fall when people lose weight and that this fall in leptin triggers hunger and weight regain. This turns out to be the reason why people gain the weight they lose after a diet - sometimes called yo-yo dieting.

At the meeting, I was able to present our findings from treating patients who lack leptin as we have the most expertise of anyone in the world. Our work was the first to show how leptin works in people and how our weight is linked to our hormones, immune system and brain.

It was amazing to meet all the key people who have dedicated their careers to understanding weight problems – all in one room. We all agreed that there is a lot more to do as it seems the body's system for controlling weight is much more complicated than we imagined. But it's great to see how key scientists and doctors around the world are working together to help people with weight problems – it was very inspiring!

Professor Farooqi

Left-Right—Professors Jeff Friedman, Jeff Flier, Terri Flier, Sadaf Farooqi

"Our work was the first to show how leptin works in people."

Update on Trial of Treatment for MC4R Deficiency

I'm not able to give you the nod yet or a specific date with respect to a Trial of treatment happening here in Cambridge. Everything is still progressing but with the inevitable slowness that seems to surround legislation and paperwork. We are half way through the year but we remain hopeful that 2014 may still be the year that the first potential trial of treatment for MC4R deficient patients will indeed take place here in Cambridge. We will let you know once we get the news from the USA.

Draft Patient Information Leaflet

If you have looked on our website recently, you will have hopefully seen in our "Latest News" that we have a first draft of a "Patient Information Leaflet."

We wanted to be able to give our patients and families some information to take away with them as a reminder of what they heard from us when they were here in Cambridge.

We also wanted it to include all our contact details and to remind everyone to keep in touch.

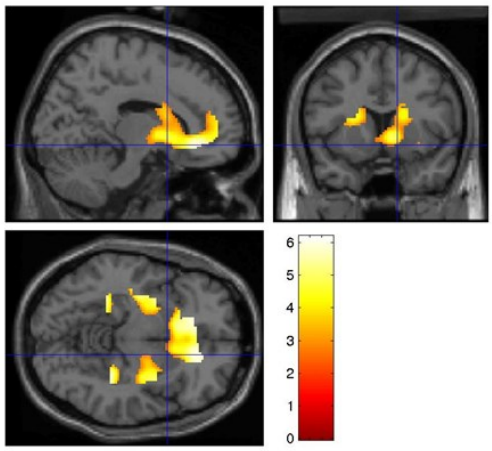
We would be keen to receive feedback (good and bad) from any of you with respect to this leaflet as of course, we think we know what you want to hear but we could be completely wrong. You can find our contact details below or on the website at http://www.goos.org.uk/contact-us

Latest Research Highlights

This summer we will publish the results of one of our latest research studies. Thanks to the MC4R patients who helped us get another step nearer to our goal! We have previously shown that the Melanocortin- 4- Receptor (MC4R) gene is important for controlling weight and that people who have a defect in this gene can become heavy from a young age.

In this study, we wanted to see if the MC4R gene was involved in the reward centres in the brain which drive people to crave certain foods. We compared three groups of people. Some people were overweight due to a problem in the Melanocortin-4-Receptor (MC4R) gene, some were overweight but the gene was normal, and some were of a normal weight. We wanted to know how a person's brain responds to food. To do this, we used something called a functional Magnetic Resonance Imaging (fMRI) scan to look at how the brain responds to pictures of nice, appetising food such as a lovely big piece of chocolate cake! We would expect to see certain areas of the brain getting more active and actually "lighting up" in the scan when people see the cake. These areas are called "reward centres" and are parts of the brain that record pleasant experiences and drive people to crave some foods.

And guess what, the reward centres in the brains of MC4R patients responded in exactly the same way as our volunteers who were "normal" weight. Surprisingly, the reward centres were underactive in overweight volunteers whose gene was working normally. This seemed a bit confusing at first, but it seems that MC4R makes the reward centres underactive when people gain weight and this may be why some people crave certain foods. Could this "underactivity" in the reward system drive people to eat more? Maybe a person without a weight problem would only have to eat one piece of chocolate cake to get a response in the reward system, whereas a severely overweight individual may want to eat two pieces of cake to get the same response?



We hope that by understanding these processes in the brain through studies like this, we will be able to help develop better treatments for obesity in the future.

Newsletter written and edited by Julia Keogh, July 2014