



Genetics of Obesity Study

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GOOS Newsletter

Winter 2015

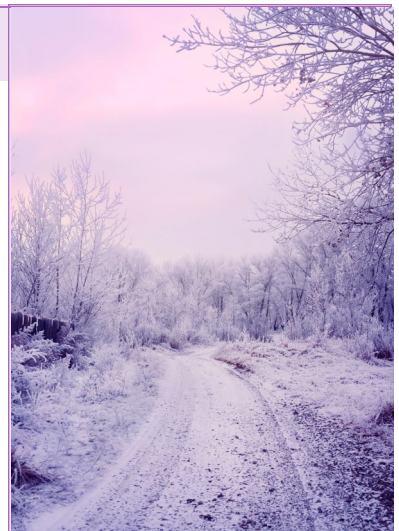
Belated Happy New Year Greetings, it's now 2015! Where does the time go?

Unbelievably it is over 16 years since we first discovered the MC4R gene as a cause of severe weight problems and now, thanks to our patients, we know a lot about the condition. As a result, we have produced our first information leaflet for patients and families with this condition. We decided that the Xmas holidays might be a good time to place it on our website so you might see it when you "surf the net". It seems we were right, as we have heard from quite a few of you and so far everything has been complimentary, so that's great.

I really can't express just how good it is to hear from you, our MC4R patients, and other patients too! We were never really sure if you received our newsletters when we first posted them out. Unfortunately, posting became too costly, which is a real shame as one of you recently told us that you got quite excited when a newsletter "dropped through the letterbox". So now we place everything on the website but of course just how many of you look at the website, is something we can't know? So please keep in contact, tell us what you think about the newsletter and anything else. Please just keep in touch!

By the way, we haven't forgotten those of you with a different gene problem from MC4R. Some genes are very new, but all the time our knowledge is growing thanks to people who come to see us in Cambridge and have taken part in our studies. We plan to keep adding information leaflets about the different genes to the website, so please keep a look out.

On a quite different note, have you noticed how many TV programmes there seem to be about weight problems these days? Most of them to my mind are not particularly informative or helpful, in fact downright insulting! Please have a look at the video link at the end of "News from the Professor:" no sensationalism here, just the facts!



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Latest News and Updates from Dr Farooqi

For many people, trying to lose weight is a constant battle. But some people manage to eat what they like and don't have to worry about their weight at all! What's their secret? If we could find out, this could lead to new ways to help people with weight problems.

Why do some people remain slim when we are all surrounded by tempting high calorie food 24/7 and are generally less active than we used to be? There must be more to it than that.

Surprisingly, thinness can run in families so this made us think that there might be genes that keep people slim, just like there are genes that contribute to some people being overweight. After getting funding from the European Research Council (ERC), we were able to launch a major UK-wide research study called STILTS (STudy Into Lean and Thin Subjects) with the aim of finding genes for thinness.

The first step was to find people who are thin but otherwise healthy. This seemed quite difficult to do, but we decided to work with GP surgeries as one of the great things about the NHS is that all surgeries have electronic records and can work together to invite people to take part in research. Working with Doctors and Nurses in over 600 surgeries, we were able to identify over 20,000 people who were thin and healthy. We then invited them to take part in our research by providing a DNA sample using a mouthswab and giving us some information about

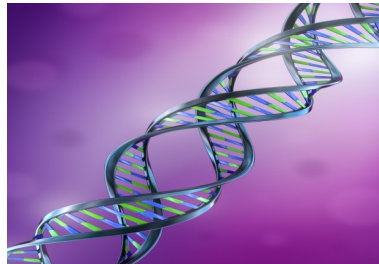
their medical and family history.

We were delighted that over 2,000 people volunteered to take part. We are now testing their DNA to look for genes that might contribute to thinness. We will compare their genes to people who are normal weight and some of our patients who are overweight to see if we can find patterns that are different between the groups. This is a very exciting opportunity for us to take a completely new approach to tackling weight problems - no one in the world has looked at thinness as a way of helping people with weight problems before.

We would like to thank everyone involved in GOOS and STILTS and all those volunteers who contribute to our research into weight problems. We will keep you posted on this work!

To find out more, see my podcast interview at our Media Centre:

www.goos.org.uk/resource-centre/media-centre



Update on Trial Treatment for MC4R Deficiency

OK, so it is now 2015 and we said that a Trial of treatment would take place here in Cambridge in 2014!

We are just as disappointed as you that this is taking so long. Our hands are tied; we have to wait for the company producing the drug to complete all the necessary legislation, tests etc, that are involved in a clinical trial. There is no reason to think that the trial will not take place so fingers crossed that we shall hear some good news soon. We will let you know once we have some positive information.

We have been trying very hard to make sure we have all your latest contact details by checking with hospital doctors and GP's but we think some of you have moved and we don't know where you are. Please make sure we have your contact details if you are interested in this trial. Contact us and register your interest on our website: www.goos.org.uk

Latest Research Highlights

Discovery of the link between weight and blood pressure

Working with researchers in Australia, we have recently discovered that leptin, a hormone that regulates the amount of fat we store in the body, also drives the increase in blood pressure that often occurs when people gain weight.

Being overweight is a major risk factor for the development of high blood pressure and heart disease. Indeed, this is often the argument used by many healthcare professionals when advising people trying to lose weight. If you were to ask them why losing weight will help lower blood pressure, they may struggle to provide you with a clear explanation. Our research has now shown that the hormone leptin is the link.

Leptin is made by our fat cells and circulates in the bloodstream to reach the brain. It then acts as a signal for our energy reserves, adjusting both the energy we use in our everyday lives and the sensation of hunger that we feel when our energy levels are low and we need to eat—hence it is sometimes referred to as the 'satiety hormone.'

We showed that severely overweight children who were lacking the hormone leptin because of a genetic disorder had low blood pressure despite being very heavy. This was also the case for children lacking the gene for the leptin receptor in the brain, meaning that the brain was unable to respond to the hormone.

The team in Australia showed that animals with normal leptin levels develop high blood pressure as they gain weight on a high fat diet. These effects were not seen if they lacked leptin or where leptin was unable to work because of a defect or block on the leptin receptor. These studies demonstrated that leptin signalling is necessary for what could be termed "obesity- induced high blood pressure".

Professor Farooqi says "we now know that leptin regulates both our weight and our blood pressure through its action on the brain. Targeting this action could offer a useful way of helping people fight obesity and associated problems such as high blood pressure and heart disease."

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



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