

## **Are you getting enough sleep?**

### **Grabbing an extra hour's sleep**

I've come to meet our sleep volunteers. They've now all spent a week sleeping six and a half hours a night, and a week sleeping seven and a half. Even this longer sleep was disruptive for those not used to it.

"It was perhaps an hour or so more than I would normally get of sleep and I found myself really lethargic during the course of the week."

"It was really noticeable. I say things suffered but I ran out of time during my day."

This analysis should reveal if that single hour's difference in sleep over just a week has really made a significant impact on the volunteers.

The computer tests they undertook revealed that most were struggling with mental ability tasks when their sleep was restricted by just an hour.

It just shows how sensitive our brains are to lack of sleep.

Next are the blood test results.

The researchers here have been looking at the genes switched on in our volunteers' cells, depending on whether they were either getting six and a half hours' sleep a night or an hour more, and I'm hoping to find out if there's a difference between the two.

Simon Archer and his team have been hard at work all night analysing the blood samples.

So, Simon what did we find?

"We found that overall there were around 500 genes that were affected.

So the same genes that are there in the cells all the time but depending on how much sleep the subject had, they were either...

"Increased or decreased in their levels."

And what were you able to say about the kinds of genes that were increased or decreased between those two sleep groups?

"We find that genes whose expression increases are associated with processes like inflammation, immune response and response to stress."

Long-term sleep deprivation has been linked to health problems but it now seems that in just a week of sleeping six and a half hours a night, our volunteers' cells switched on cells that are associated with an increased risk of heart disease.

We also saw an increase in the levels of genes associated with diabetes and risk of cancer.

“Sleep isn’t something that you just have to do every night. It has an important biological function and somebody may not even think that their sleep is necessarily altered when in fact what’s going on inside their body says otherwise.”

So it’s not just our weight and metabolism but the health of our hearts, the repair of our cells and even our risk of getting cancer.

All could be improved by getting just around seven and half to eight hours’ sleep a night.