1) Hello, my fellow workers. Today I am going to talk about **sleep**

2) My talk will be in three parts and will take five minutes. Now let’s move to the first part which is .

3) New research is giving scientists an insight into why we sleep and what happens when we do it.

At the end of each day we become unconscious and paralysed. Sleep made our ancestors vulnerable to attack from wild animals. So the potential risks of this process, which is universal among mammals and many other groups, must offer some sort of evolutionary advantage.Research in this area was slow to take off. But recently there has been a series of intriguing results that are giving researchers a new insight into why we sleep and what happens when we do it.

**Why do I sleep?**

Scientists simply don't know for sure. In broad terms researchers believe it is to enable our bodies and especially our brains to recover. Recently researchers have been able to find out some of the detailed processes involved.

During the day brain cells build connections with other parts of the brain as a result of new experiences. During sleep it seems that important connections are strengthened and unimportant ones are pruned. Experiments with sleep-deprived rats have shown that this process of strengthening and pruning happens mostly while they sleep.

And sleep is also an opportunity for the brain to be cleared of waste.

"You can think of it like having a house party. You can either entertain the guests or clean up the house, but you can't really do both at the same time."

**What happens when I don't get enough sleep?**

Researchers at Surrey University in Guildford have found that genes involved in inflammation seem to increase their activity. Dr Malcolm von Schantz, who is involved with the Surrey research, believes that the genes are responding to lack of sleep as if the body is under stress. In modern times though preparing for an injury that never happens has no beneficial effect - in fact the consequent activation of the immune system might increase the risk of heart disease and stroke.

**Why is it hard to think when I am tired?**

The expression "half asleep" might be an accurate description of what is going on in the brain when you are feeling slow-witted. Research suggests that parts of the human brain may well be asleep when it is sleep-deprived. Studies on whales and dolphins show that when asleep they continue to use half of their brain to swim and come up to the surface for air. A [**study on human patients**](http://www.hfsp.org/frontier-science/awardees-articles/local-sleep-brain-regions-go-offline-different-moments) showed that something similar goes on in our brains. As they became more sleep-deprived, parts of their brain became inactive while they were still awake.

**What is the role of dreaming?**

That's a question that psychiatrists, notably Carl Jung and Sigmund Freud, have tried to answer but with limited success. More recently, a team at the ATR Computational Neuroscience Laboratories in Kyoto in Japan has begun trying to answer some of these questions by building the beginnings of a [**dream-reading machine**](http://www.the-scientist.com/?articles.view/articleNo/33726/title/Decoding-Dreams).

They asked volunteers to doze off in an MRI scanner and recorded their brain patterns. The volunteers were then woken up and asked to tell researchers what they were dreaming about. The researchers then compared the accounts with the pattern of activity in the area of the brain responsible for processing visual information - and to their amazement they found that there was a correlation. So much so that they could predict which of the 20 different categories they had listed the patient had dreamt of with 80% accuracy.

7) To sum up, The investigators hope that "early to bed and early to rise" really does make us, if not "wealthy and wise", at least "healthy and wise".

8) That is all, thank you for your attention!