

Runner-up in General Category – National Brain Science Writing Prize 2008 Philip Strange

Professor brain booster

What a life! Jetting round the world from conference to conference staying in posh hotels. That is how David Lodge portrayed the life of a university professor in his seminal campus novel *Small World*. Coping with jet lag included booze, sex and adulation by your peers. Well, that was a few years ago and now it seems they are using drugs as well. A recent article in the science journal *Nature* highlighted the use of a drug called modafinil to overcome jet lag and cited several professors as users of the drug.

Modafinil is one of a new class of drugs termed ‘smart drugs’. These are not drugs taken for illness, these are drugs taken by well people to improve the way they think. People report that these drugs will enhance memory, concentration, planning and other brain functions, collectively referred to as cognition.

Modafinil is one of the more interesting smart drugs. It is licensed to improve wakefulness in adults who experience excessive sleepiness, for example in the condition termed narcolepsy where people fall asleep during the day. It is not really known how modafinil works although it has been described as an enhancer of brain function. Our brains depend on the release and detection of a host of chemicals termed neurotransmitters. Modafinil has been shown to alter the levels of several of these.

It is also being taken by some perfectly healthy people to counter the effects of jet lag where it has a moderate effect on attention and working memory. It has been taken by others in their normal lives to enhance productivity, increase mental energy and to improve sustained hard thinking. The wakefulness enhancing effects of modafinil have been exploited by the military in several countries to improve attention in troops during long periods without sleep such as in active combat missions lasting 48 hours or more. In the US, the professional poker player, Paul Phillips, claimed that Modafinil had improved his concentration, making him a better player and helped him earn large sums of money.

Boosting brain function in this way makes many people uneasy as it seems like tinkering with nature. But who is to say that our brain functions at an optimal level normally and that this cannot be improved upon? We should probably, however, be cautious as we don’t know much about the long-term effects of Modafinil. One very contentious area is the use of these drugs by students when revising and before exams. Some people might consider that this would confer an unfair advantage but others may think it does not matter. The drugs may be banned or it may become the norm to take them. In a recent survey on the use of these kinds of smart drugs, a third of respondents said they would feel pressure to give them to their children if other children at school were taking them.

These are difficult issues that will need to be considered and dealt with by society as a whole. Don’t forget, however, that we do not object to people taking a large espresso or an energy drink with caffeine in it to enhance concentration. You can now buy a

caffeinated lip balm (Spazzstick) which not only stops chapped lips but also gives you a boost. Caffeine has been well studied and is probably the most widely used brain-active drug. Although excessive use of caffeine can be addictive, when it is taken in normal amounts its effects are transient and modest and don't seem to do any harm. How long will it be before other smart drugs are available at Starbucks?