



# 12 INFORMATION FOR DRUG WORKERS FROM ISDD PROZAC

Recently in the news as a new kind of 'feel good' drug, Prozac is now turning up among the drugs used by drug agency clients. Prozac (fluoxetine hydrochloride) is an antidepressant introduced by Eli Lilly in 1987. It is a Prescription Only Medicine available as a 20mg green and white capsule but is not controlled under the Misuse of Drugs Act. The two main groups of antidepressants are tricyclics and monoamine oxidase inhibitors (MAOIs). Prozac is related to tricyclics in that it blocks the re-uptake of a neurotransmitter (NT) in the brain.

## How does it work?

Electrical messages move around the brain from cell to cell. When a message reaches a gap (or 'synapse') between cells, it needs to be 'ferried across' by a neurotransmitter chemical released by the cell. Once the job is done, the NT is reabsorbed by the nerve cell to await the next message.

Once released, NTs also appear to affect physical and psychological functions such as temperature control, appetite, sexual functioning and mood states. Serotonin is one such neurotransmitter, low brain levels of which are thought to be linked to depression. Prozac selectively prevents serotonin being reabsorbed, making it more 'available' in the brain and (it's thought) inducing the drug's 'feel good factor'.

Most antidepressants ameliorate symptoms of depression and make patients feel drowsy. In contrast, Prozac's action on serotonin gives it a stimulant rather than a sedative quality. Even people not diagnosed as suffering from depression claim to feel 'better' having taken it, hence its reputation as a mass market 'happy pill'.

However, many more people experience mild, chronic depression than are diagnosed as such. These people may simply be responding to the effects of an antidepressant in the same way as a diagnosed patient would. (All this supposes that depression and 'feeling good' are related to levels of serotonin, far from proven.)

## What is it prescribed for?

At its recommended daily dose of 20mg, Prozac has been prescribed for a range of depressive states, plus conditions such as bulimia and obsessive compulsive disorders.

Case reports and at least one controlled study suggest that drugs such as Prozac which stop serotonin being reabsorbed might have a role in addiction treatment, for example, by lessening the reinforcing properties of the drug of addiction.

Prozac has been prescribed to relieve the 'comedown' from using cocaine or crack; to help methadone maintenance patients who use cocaine to reduce this use by reducing their craving for cocaine and the 'quality of the high'; and in the treatment of heroin addiction, again to curb craving and to relieve withdrawal symptoms such as sleep disturbance and depression.

## What are the risks?

**Physical** The most likely side-effects of Prozac include insomnia, headaches, nausea, dryness of the mouth and jitteriness – not unlike those associated with amphetamine. Other possible effects include skin rashes, loss of coordination and tremor. The drug is not recommended for those with liver or kidney problems or epilepsy and should not be given to pregnant women or breastfeeding women. So far there does not appear to be a withdrawal syndrome associated with Prozac nor is it easy to overdose on. One case report records that a psychiatric patient with a history of drug misuse injected Prozac daily.

It is very dangerous to take Prozac while taking MAOIs such as Nardil, Marplan or Manerix. This can cause very high blood pressure, vomiting and shock and should be treated as a hospital emergency. Prozac has an exceptionally long half-life of two to three days and one of its metabolites is still detectable up to five weeks after last use. Official advice is that someone on Prozac should not switch to MAOIs without a break of at least five weeks.

**Psychological** Here the picture becomes confused. There is a best-selling book in praise of the drug and a Prozac Survivors' Support Group – an indication of how far 'out' the jury is on Prozac.

It takes around two weeks for the drug to start working. Some people give up before that because of the side-effects. Some continue but feel no improvement in their condition. There have been a number of press reports about patients committing suicide or acts of violence due to the effects of Prozac and some case reports on Prozac-induced mania. In this state, patients might become very agitated and over-excited with grandiose delusions. From the limited literature, those who have reacted most dramatically to the drug are on higher than recommended doses and/or have a long history of psychological disturbance. However, medical advice is to carefully monitor anybody on Prozac who might have suicidal tendencies.

Arguing against Prozac being seen as 'addictive' is the fact that its use does not seem to result in drug-seeking behaviour. Those who take it regularly may wish to carry on doing so because it alleviates their depression.

## Non-medical use

Prozac increases levels of serotonin; serotonin, LSD and ecstasy all act similarly on the brain. This may be related to evidence that Prozac has a presence on the drug scene. It would seem prudent to suggest people do not mix Prozac with other drugs or alcohol, though the literature on possible outcomes is sparse. Two case studies suggest a possible link between mania and the use of Prozac with LSD and cannabis respectively. Because fluoxetine has been shown to block MDMA neurotoxicity, some users in America take Prozac before ecstasy as a 'harm-reduction' measure which does not lessen the ecstasy experience.