

## Handy Fact Sheet Smoking and clozapine

### What is the problem with smoking and clozapine?

The main problem with smoking and taking clozapine is that smoking reduces the amount of clozapine in your body. This can mean the clozapine can stop working. Also, if you stop smoking, the amount of clozapine in your body can increase. This means you can get more side effects.

### What causes the problem?

- Clozapine is broken down (metabolised) in the body by several enzymes in the liver
- The main one of these enzymes is called CYP1A2 (or sometimes P450-1A2).
- Chemicals in the smoke get into the body and make this enzyme work faster
- That means the enzyme breaks clozapine down quicker, so you get less effect from it.

If you have the same dose of clozapine and your daily smoking habit doesn't change, there is no big problem. Other than smoking not being very healthy of course. The problem comes if you stop or start smoking.

By the way:

- Smoking cannabis has the same effect as smoking tobacco
- E-cigarettes do not produce tobacco smoke and so switching to an E-cig is the same as stopping smoking

### So how might this affect me?

#### Stopping smoking:

- When you smoke, chemicals in the smoke get into the lungs and then your body. These make the CYP1A2 enzyme work faster
- That means the enzyme breaks down clozapine quicker, so you get less effect from it
- But **if you stop smoking** that means that the enzyme slows back down to its normal speed
- This means that:
  - The liver doesn't break clozapine down as fast as it did before
  - Your blood level of clozapine goes up (because the body isn't getting rid of it as fast)
  - You may get side effects from having too high a blood level of clozapine (the same as having a higher dose)
- The effect can be huge, sometimes the same effect as almost doubling your dose
- This effect can be even more marked if you are also taking a medicine called sodium valproate
- If you stop smoking this effect may start in 3-5 days. It can also build gradually over 2-4 weeks.

#### Starting smoking:

- Chemicals in the smoke get into the body and make the CYP1A2 enzyme work faster
- That means the enzyme breaks clozapine down quicker, so you get less effect from it
- As a result of this clozapine will not work as well and you may become unwell again or your symptoms come back.
- If you start smoking this effect may start in 3-5 days or even sooner.

### What should I do if I think I might stop smoking?

- Firstly, make sure your nurse or doctor knows
- Secondly, it is a good idea to have a blood test to check on the amount of clozapine in your blood before you stop (or start) smoking. This is different to your regular blood tests and the blood sample is normally sent away. The result may take a week or two to come back.
- It would be best to stop smoking slowly over several weeks if you can
- If you are cutting down first, there may not be too much of an effect until you get down to about 10 cigarettes a day. It is cutting out the last 10 cigarettes a day that seems to cause most of the problems
- Using an E-Cig may help you give up smoking but an E-cig does not produce tobacco smoke. So, switching to an E-cig has the same effect as quitting smoking
- Be very wary of any increase in side effects that occur. Keep in contact with your nurse or doctor.

### What should I do if I think I might start smoking?

Please don't! Inform your nurse or doctor if you do start smoking again.

### What are the symptoms of a problem?

Symptoms of your clozapine blood levels going up can include sleepiness, constipation, hypersalivation (too much saliva in your mouth), feeling very tired and feeling dizzy when you stand up.

If your levels go too high you might also have a seizure or fit. If this happens you **must** see your doctor straight away. Also see your doctor if you have constipation for more than 3-4 days.

### What should I do if I have this problem?

You will need to have a reduced dose of clozapine. There are ways of working out what your new dose might need to be. But, you will probably just need to reduce your dose slowly. Having another blood test to see how much clozapine there is in your blood can help get the dose right for you.

### What about nicotine replacement?

It is the smoke that causes the problem. So, nicotine patches, gum, sprays and lozenges have no effect on clozapine levels. Chewing tobacco and snuff have no effect either.

### Is this effect important?

Yes, because it might make you very unwell. There have been a few cases of people becoming very toxic on clozapine when stopping smoking and some have nearly died. Your nurse, pharmacist or doctor can help you stop smoking safely but make sure you say that you are on clozapine.

**The small print:** This leaflet is to help you understand about smoking and clozapine. Many thanks to Bob Flanagan for doing the research to help us write this correctly. Go to our website for fuller answers to these and many other questions e.g. driving, women's health, how it works, doses and interactions, and about the conditions.