

**Anosmia Following Traumatic Brain Injury**

**Patient Information Booklet**



**Talis Consulting Limited**

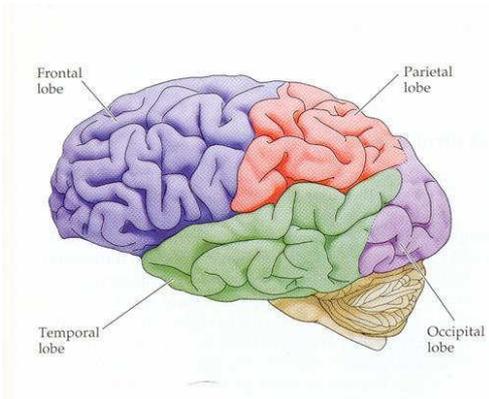
## What is Anosmia?

Anosmia literally means “no smell” and refers to any condition whereby a person loses their sense of smell. This can be for a variety of reasons, including infection, the actions of noxious chemicals, and genetics however it is also possible following a head injury.

There are two main forms of anosmia; a general anosmia where a person can no longer perceive any smells, and specific anosmia, where one or a few smells in particular can no longer be perceived. Following a head injury general anosmia is far more common, as specific anosmia tends to arise from genetic causes, or trauma directly to the receptors in the nose.



## Why can a Head Injury Cause Anosmia?



Nerves from smell receptors in the nose travel to the frontal lobes of the brain (the bit behind your forehead) and are then processed in olfactory centres in the orbitofrontal cortex (the lower portion of the frontal lobes) and certain areas in the temporal cortex (the areas on the side of your brain).

The nerve which carries information from your nose to the olfactory centres must pass between the frontal lobes and the bony protrusions from the base of the skull. This unfortunately makes the nerve vulnerable to damage from a blow to the head.

Anosmia can also occur from direct damage to the olfactory centres in the orbitofrontal cortex, as this area of the brain may grind against the rough surface of the front of your skull.

Another reason is that following a head injury bleeding in the front of the head may place pressure on the nerves travelling from the nose and the olfactory centres in the brain, meaning they cannot work properly. This form of anosmia is usually temporary as when the bleeding subsides pressure upon the nerves and brain is released.

Anosmia can occur from injury to any part of the head, however it is most common following a blow to the back of the head. This is because it causes the front of the brain to grind against the rough front portion of the skull.

Anosmia is more common following more severe head injuries. However this is not a completely clear-cut relationship. Anosmia can occur following very slight head injuries in which the injured person may not have experienced any loss of consciousness.

## Why is Anosmia Important?



Unfortunately anosmia has received less research attention than many other problems which arise following a head injury, this is largely due to the fact that anosmia may not seem to have any real impact on day-to-day functioning or for treatment success. However the importance of anosmia should not be overlooked.

Anosmia is important because it is generally associated with an injury to the front of the brain. This means that it may provide a clue as to where in the brain damage has occurred.

This also means that anosmia usually coincides with other problems which can arise following damage to the front of the brain. For example problems with planning, problem solving, attention or inhibition of behaviours. Therefore anosmia can sometimes help guide clinicians towards what other problems to investigate.

However it is important to get your anosmia tested. Only a minority of those who have anosmia actually realise they have a problem. It may also be important that your anosmia is diagnosed properly, as if it has arisen for reasons other than your head injury then the correct course of action to deal with it may be different.

Finally, anosmia is important because it impacts upon your sense of taste. Most of the 'taste' of food and drink actually comes from smell receptors in the nose, as the smell of the food or drink in your mouth travels through the back of your throat to the nose. This means that our ability to taste and enjoy food relies upon our sense of smell.



## **What are the Some of the Problems Anosmia Can Cause?**

### ***Weight Loss or Gain, and a Change in Appetite***

Because anosmia reduces our ability to taste foods, this can reduce enjoyment in eating. This can lead to a lack of appetite and weight loss. However some people find they put on weight as they eat foods higher in salt, sugar and fat to try and gain some more pleasure out of their diet.



It is important that you recognise that this may be a problem as any involuntary change in weight can have consequences for your general health.

### ***Sexual Problems***

In a minority of cases, people have reported that they do not gain the same enjoyment out of sex following the onset of anosmia. This may not be as surprising as it sounds, as numerous theories point to the importance of pheromones and scent in physical attraction.

However sexual problems can occur for a variety of reasons following a brain injury, and are often emotional or psychological in nature, so it is important that you recognise the true cause of any sexual problems so they can be dealt with appropriately.

### ***Depression***

The majority of people do not even realise they suffer from anosmia, and for those that do, most can adapt relatively well. However for a few people the loss of their sense of smell can have a huge impact on them and cause symptoms of depression. This may be especially true as coping with difficulties can be harder when you are recovering from a head injury.

It is important to recognise if you are experiencing any depression, whether it is caused by your anosmia or not. Make sure you seek help for depression from your GP.

## What Treatments are Available for Anosmia?



Anosmia from a brain injury is not usually considered treatable. The ability of anosmia to improve may depend upon the nature of the brain injury:

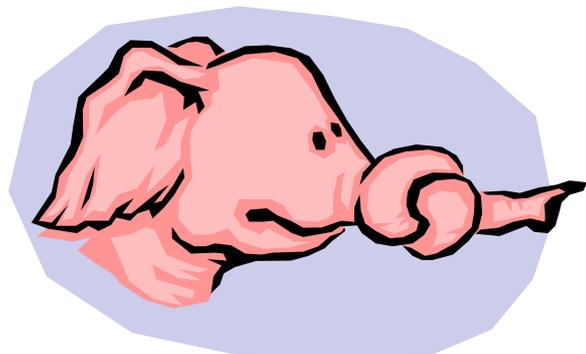
If the nerves and brain areas are under compression from bleeding, or are bruised, then sensations may gradually recover as swelling and bleeding subsides. This is usually the mechanism in those cases of anosmia which recover before three months.

However even if the nerves and brain cells suffer direct damage, your sense of smell may recover. The nerves and brain cells

responsible for smell do show some capacity for regeneration following damage; however these self-repair mechanisms may take time. It is not uncommon for recovery to still be ongoing a year following your injury. However it is rare to recover one's sense of smell if it has not started to return after one year's time.

There are some rare reports that during the recovery process people suffer parosmia or phantom odours. Parosmia is where the brain may misidentify smells, so that the smells of well-known things can seem odd or wrong. Phantom odours are where you perceive smells which are not actually there, they might be thought of as smell-illusions.

However these instances are very rare, and their cause is not yet fully understood. It is likely they are due to the activity of a partially-recovered olfactory system, although why this should happen is not clear. However in those rare cases they have been reported they seem to be temporary problems, and resolve with the recovery process.



There may be several different self-repair processes in the brain which can help to repair damaged systems responsible for smell. What processes are used can depend on the location of the damage, the type of damage, and the severity of the damage.

This makes it very difficult to predict who will recover their sense of smell, and when they might recover it.

## What Can be Done to Help?

The following section describes a number of practical changes you may want to implement to help you deal with any problems arising from anosmia. You may want to try some or all of the following tips, depending on your individual needs and problems.

### *Make eating fun again*

If you find problems with your appetite and weight loss or gain, then you might want to consider different ways to make eating fun once more. The texture of foods becomes very important, particularly how you combine them. You may want to mix cooked and raw vegetables for a texture comparison, or eat a hot meal with a cold salad for different temperature experiences.



Also remember that the sense of taste is actually often preserved, however is dulled. Therefore strong tasting foods (such as spicy Indian foods) can still cause sensations upon the tongue, giving more of an impact to the foods you eat.

### *Install smoke detectors*



Anosmia can have important implications for your safety. With an impaired sense of smell you may not be able to notice the smell of smoke or burning quite so readily. Therefore you should install smoke detectors in every room to reduce the risk of a fire going unnoticed.

You might also want to consider switching from a gas fire to an electric one, as you may not always be aware if you accidentally leave the gas on. Whether it is a gas fire or cooker or other appliance.

### *Check labelling on chemical substances*

Some substances such as glue or aerosols may require ventilation in order to be safely used. When someone has anosmia they may be less aware when a chemical they are using is noxious and harmful. Therefore check the labels of anything using chemicals in order to make sure you're not breathing in harmful substances.

### *Check use-by dates on food*

Without a sense of smell it can be very hard to tell when food has gone off. Pay attention to any use-by labels and if in doubt get a friend or relative to check whether the food is past its best. Because your sense of taste may also be impaired it can be very difficult to know whether something you are

### **Useful Websites:**

**www.headway.org.uk**

**- A useful web site with much information about brain injury and rehabilitation in the UK.**

**www.birt.co.uk**

**- Another useful web site concerning brain injury, with downloadable leaflets about brain injury and its implications.**

**<http://braininjuryt.org.au/portal/sensory/motor/anosmia-losing-your-sense-of-smel---fact-sheet.html>**

**- A fact sheet devoted specifically to the problems of anosmia following a brain injury.**

**<http://www.cardiff.ac.uk/biosi/staffinfo/jacob/Anosmia/anosmia.html>**

**- A page of information about anosmia generally, and current stances on the research on treatments for anosmia.**

