



**University Learning in Schools**

# **Biology**

**My Brain During the Day:  
Infosheet Anosmia**

## **Lesson 2**



## Anosmia or Loss of Smell from Brain Injury

Nathan Zasler, MD, FAAPM&R, FAADEP, DAAPM, CBIST, BrainLine



### Question:

My friend had a brain haemorrhage from a blow to the head 10 years ago and has completely lost his sense of smell. Apparently, the part of his brain that controls his sense of smell was permanently damaged.

Is it possible that even though the brain does not recognise or register any kind of smell, the effects of that smell can still be experienced? For example, even though he can't smell coffee or lavender, could he still experience the stimulating effects of the coffee aroma or the relaxation effects of the scent of lavender?

### Answer:

Smell loss following traumatic brain injury is often overlooked as doctors tend not to bother to ask about or test for loss or change in smell — or taste for that matter. Many times, people with brain injury first report changes in taste when they lose or notice a change in their ability to smell. Typically, complete loss of smell — or what is called anosmia — will be quite noticeable to a person following a traumatic brain injury and may affect numerous aspects of their life. Unfortunately, there is no good treatment cure for post-traumatic anosmia. Typically, if a person doesn't regain his ability to smell six months after the injury, the loss will likely be permanent.

Because of the complex mechanisms involved in olfaction — a person's sense of smell — it's difficult to determine the reason for the loss. Problems with smell loss can result from craniofacial trauma, specifically damage to nasal passage ways, shearing injury of the olfactory nerve, or injury to primary or secondary smell centres in the frontotemporal regions of the brain. There are also other non-traumatic causes for smell impairment,

including Alzheimer's disease and smoking, to name just two. This is why it's important for people with this type of problem to seek out appropriate evaluation by a doctor familiar with post-traumatic smell loss.

If your friend is truly anosmic, that is, he has totally lost his sense of smell, then he would probably not recognise or register any kind of smell, since the olfactory nerve is responsible for scent recognition. Therefore, your friend would not benefit from smelling any substance. That said, we don't have a lot of research on this. Some people have anecdotally described "blind smell" similar to blind sight (a phenomenon in which people who are perceptually blind in a certain area of their visual field demonstrate some response to visual stimuli), and it wouldn't hurt for your friend to try and experiment with smells.