

## Teachers' notes; addiction and nicotine withdrawal

**Addiction** is defined as not having control over doing, taking or using something to the point where it could be harmful to you. Addiction is most commonly associated with gambling, drugs, alcohol and nicotine, but it's possible to be addicted to just about anything, including:

- Work – some people are obsessed with their work to the extent that they become physically exhausted; if your relationship, family and social life are affected and you never take holidays, you may be addicted to work
- Internet – as computer and mobile phone use has increased, so too have computer and internet addictions; people may spend hours each day and night surfing the internet or gaming while neglecting other aspects of their lives
- Solvents – volatile substance abuse is when you inhale substances such as glue, aerosols, petrol or lighter fuel to give you a feeling of intoxication
- Shopping – shopping becomes an addiction when you buy things you don't need or want to achieve a buzz; this is quickly followed by feelings of guilt, shame or despair
- Exercise – exercising obsessively to make themselves feel good, but in fact are actually harming their bodies. Professional athletes need to train a lot to keep their bodies ready to compete, but they are following fitness programs which include food, exercise and sports psychology, based on their sport and themselves.

### Causes of addiction:

There are lots of reasons why addictions begin, it can be a way of blocking out difficult issues. Unemployment and poverty can trigger addiction, along with stress and emotional or professional pressure. In the case of drugs, alcohol and nicotine, these substances affect the way you feel, both **physically and mentally**. These feelings can be enjoyable and create a powerful urge or craving to use the substances again.

Some addictions also involve an inability to stop partaking in activities which create a similar mental "high", such as gambling, eating, or working followed by a strong urge to try to recreate that feeling repeatedly. In these circumstances, a person has an **emotional and behavioural addiction**. This can develop into a habit that becomes very hard to stop. Being addicted to something means not having it causes withdrawal symptoms, or a "come down". Because this can be unpleasant, it's easier to carry on having or doing what you crave, and so the cycle continues. Often, an addiction gets out of control because you need more and more to satisfy a craving and achieve the "high". When a person experiences addiction, they cannot control how they use a substance or partake in an activity, and they become dependent on it to cope with daily life.

Most people start using a drug or first engage in an activity voluntarily. However, addiction can take over and reduce self-control. Someone with an addiction will continue to misuse the substance in spite of the harmful effects. The strain of managing an addiction can seriously damage your work life and relationships. In the case of substance misuse (for example, drugs and alcohol), an addiction can have serious psychological (emotional) and physical effects. Addiction is a treatable condition. Whatever the addiction, there are lots of ways to seek help.

The person can see their GP for advice or contact an organisation that specialises in helping people with addictions. For example, Quit Your way Stop Smoking Service.

**Smoking facts:**

- Smoking is the biggest single cause of preventable chronic illness, disability and premature death in Scotland
- Two thirds of smokers start by age 18yrs
- Globally tobacco use has killed 100 million people in the 20th century, much more than all deaths in world wars 1 and 2 combined. Tobacco related deaths will number around 1 billion in the 21st century if current smoking patterns continue (The Tobacco Atlas, 2015)

**So, why is nicotine addictive?**

Tobacco contains the chemical nicotine and e-cigarettes contain nicotine if chosen by the user. Nicotine is highly addictive, remember information and triangle of chemicals lesson plan from P5, Lesson 1; Activity 2. Even if a person wants to quit smoking or an e-cigarette containing nicotine they may find it difficult because they're addicted to the effects of nicotine. However, unlike a cigarette the dose of nicotine in an e-cigarette can be reduced at intervals if desired, as the user becomes accustomed to weaning off nicotine use. Equally, a person wishing to quit smoking can use medication called Nicotine Replacement Therapy (NRT) in the form of gum, patches, sprays, inhalator with cartridges or lozenges – which does not contain the other harmful chemicals in tobacco. NRT can help relieve some of the physical withdrawal symptoms so that the person can focus on the psychological (emotional) aspects of quitting.

Nicotine alters the balance of 2 chemicals called dopamine and adrenaline by bonding to receptors which become active in the brain. When nicotine changes the levels of these chemicals, the person's mood and concentration levels change with many smokers or e-cigarette users finding this enjoyable. Nicotine can reach peak levels in the bloodstream and brain rapidly; cigarette smoking results in nicotine reaching the brain within 10 to 20 seconds of inhalation, where it produces feelings of pleasure and a feeling of reduced stress and anxiety. This is why many smokers/e-cigarette users enjoy the nicotine rush and become dependent on it. The more they inhale nicotine the more their brain becomes used to the nicotine, and therefore they have to inhale more and more nicotine to get the same effect. Dopamine is a "feel good" hormone that gives us a sense of wellbeing or a feeling of calm and reward. Dopamine release in the nucleus accumbens of the brain is also responsible for generating an automatic impulse to smoke in the presence of smoking cues (watching someone smoke or smelling smoke). This release of Dopamine provides pleasure and satisfaction associated with smoking (feeling of reward) and makes other experiences associated with smoking more pleasurable (use of alcohol when socialising). However, dopamine release is brief and when the levels drop below the level the user is comfortable with, it leads to symptoms of stress and anxiety (nicotine hunger and cravings). The body therefore triggers the desire for another cigarette in order to get the levels of dopamine up again. Other chronic changes to brain chemistry resulting in: adverse mood and physical symptoms such as anger, depression and difficulty concentrating generate an additional need to smoke. Nicotine increases flow of adrenaline in the body, a stimulating hormone and neurotransmitter which causes an increase in heart rate,

blood pressure and respiration, as well as higher blood glucose levels and restricts flow to the heart muscle. The feeling is sometimes referred to as a “Nicotine buzz”.

**Withdrawal from quitting Nicotine:**

It's normal to crave nicotine when you quit, as smoking or vaping from an e-cigarette provides an immediate fix to these unpleasant feelings. Cravings happen because the body misses its regular hits of nicotine. Quitters experience the steady and constant background craving for nicotine which decreases in intensity over several weeks after quitting. In addition, there can be sudden burst of an intense desire or urge to smoke/use an e-cigarette often triggered by a cue, such as having a few drinks, feeling very happy, sad or stressed, having an argument, or even having a cup of coffee. These sudden urges to smoke/use an e-cigarette with nicotine tend to get less frequent over time, but their intensity can remain strong even after many months of quitting.

There is also the behavioural addiction associated with nicotine use, as most smokers/e-cigarette users will have an established pattern of smoking or vaping throughout the day at set times. Cravings don't last long and usually subside within 5 minutes. So, changing daily routines, habits or finding something to distract the mind and/or occupy hands does help.

**Other symptoms from nicotine withdrawal include:**

- cravings to smoke
- irritability, crankiness
- insomnia
- fatigue
- inability to concentrate
- headache
- cough
- sore throat
- constipation, gas, stomach pain
- dry mouth
- sore tongue and/or gums
- postnasal drip
- tightness in the chest

The nicotine has to leave your body and with that will come unpleasant and uncomfortable symptoms of withdrawal. However, the key word is temporary. It won't feel temporary while in the midst of withdrawal, but nicotine withdrawal will pass as long as the person does not smoke or use an e-cigarette with nicotine.

Encourage pupils to think and say, “no”, to trying a cigarette or e-cigarette