**MEDICAL EMERGENCIES WITHIN THE DENTAL PRACTICE**

**SYNCOPE (FAINT)**

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**DEFINITION** A loss of consciousness caused by a temporary insufficient blood supply to the brain.

When a casualty faints, the blood vessels in the lower body dilate and the heart rate decreases, resulting in a sudden drop in blood pressure. A faint is also known as syncope, vasovagal syncope or vasovagal attack. The word syncope means “a sudden loss of consciousness” and vasovagal is referring to the action of the vagus nerve in causing a faint. An increase in vagal activity causes a drop in heart rate and blood pressure. A faint is usually caused by a “trigger” and this has an effect on a particular area of the brain stem in the central nervous system, which leads to an increased activity of the parasympathetic nervous system, which includes the vagal nerve. This increased vagal activity causes a drop in heart rate and a significant drop in blood pressure. There is also a reduction in the sympathetic nervous system activity which causes a dilation of the blood vessels, leading to a “pooling” of the blood volume in the limbs, which reduces the volume of blood reaching the heart, resulting in a further drop in blood pressure. This means that there is now less blood flowing to the brain, and this lack of oxygenated blood leads to unconsciousness.

Faints are common, 50 percent of the population will experience a faint at least once in their lifetime.

A faint is usually caused by a trigger and some of these are listed below. The most common triggers in the dental surgery are stress, anxiety and pain. Most people will experience some or all of the signs and symptoms which are also listed below.

**Faints can sometimes be avoided if action is taken early enough.**

**Typical causes of fainting include:**

Pain and/or fright

Lack of food/fluid

Emotional stress

Long periods of inactivity (such as sitting or standing)

Prolonged exposure to heat

**POSSIBLE SIGNS AND SYMPTOMS**

Feeling hot and sweaty

Pale, clammy skin

Auditory and/or visual disturbances

Feeling light-headed and dizzy

Slow pulse (bradycardia)

Temporary loss of consciousness

The symptoms vary between individuals, but usually include a feeling of becoming very warm and light-headed. The person will look quite pale and sweaty, and may mention that any sounds seem “very far away”, and that their vision is disturbed. The pulse rate will be slow (an average pulse rate in a healthy adult at rest is **60 – 90 beats per minute**) which is a useful diagnostic tool. After a few seconds the person will lose consciousness.

As soon as the blood flow to the brain is restored the casualty will begin to make a recovery. A faint is rarely life-threatening, but it can be very unpleasant for the individual and they may continue to feel unwell for a time afterwards. There may be a pathological cause for the faint which would need to be excluded, especially if the person is having repeated episodes, so if the person is pregnant or elderly, has any other medical condition, or if there is any concern as to their recovery, it is best practice to send for the emergency services. It is also important to remember that a sudden collapse may result in an injury to the casualty.

**MANAGEMENT**

 As one of the factors of a faint is the pooling of blood in the lower limbs, this can be reversed quickly by laying the casualty flat and if possible, elevating the lower limbs above the level of the heart as soon as they show any of the signs or mention any of the symptoms mentioned above. This can be done safely if the casualty feels faint whilst sat in the dental chair as it is possible to gently move the chair back to a head down position with the headrest lowered and the leg rest elevated. This should encourage the blood flow towards the vital organs. However, elevating the legs is not recommended if the casualty has fallen, as injuries may have been sustained. A spontaneous recovery should still be expected as it is very rare for someone to faint when lying down because it is impossible for blood to pool in the limbs. **Never** prop the casualty upright as this will result in a loss of cerebral blood flow, which could be life-threatening. High – flow oxygen should be quickly administered using the non - re-breathing facemask. This will help to restore the cerebral oxygen concentration quickly.

**A person who is pregnant needs to be placed onto their left side if possible, as this prevents compression of the inferior vena cava by the uterus, which could be fatal for both mother and child. If this is difficult, then laying her onto the right side is preferable to** **on her back, as pregnancy increases the abdominal pressure making the person more prone to gastric regurgitation**.

As the casualty begins to recover, leave them in the prone position for a few minutes and then allow them to return to a sitting position. **This should be done slowly, especially if the person is elderly or pregnant.** Reassure them as they are likely to feel embarrassed, and encourage them to continue receiving the oxygen until they are feeling “back to normal”.

It is helpful to monitor the pulse rate because there will be an increase in the rate as the person recovers – after a minute it may become rapid but will return to normal quickly after that.

If the casualty loses consciousness at any time **OPEN THE AIRWAY** using the head tilt/chin lift manoeuvre and quickly **CHECK FOR BREATHING** taking no longer than **10 seconds** to do this. **IF THE CASUALTY IS BREATHING NORMALLY.**  Place them into the recovery position and telephone for an ambulance. Continue to administer high-flow oxygen. **IF THE CASUALTY IS NOT BREATHING, OR IS NOT BREATHING NORMALLY.** Send someone to call for the emergency services and **quickly start** **CPR** at the rate of **30 chest compressions** followed by **2 inflations** of high-flow oxygen via the Bag-Valve-Mask. The AED (Automated External Defibrillator) should be made available if there is one on site.

**PREVENTION**

It is always better to avoid an incident altogether, than have to deal with one when it arises, so it is always useful to know what the triggers are if someone has a history of fainting. Ensuring that the patient is adequately hydrated and has eaten recently can help to minimise the likelihood of a faint. If it is a hot day, then make sure that the air-conditioning is on, or the windows are open and a fan is available to use in the surgery.

 Do remember to reassure the patient and explain what treatment you are about to do to try to keep their stress level to a minimum.

As soon as the patient complains of feeling hot and/or dizzy, stop any dental treatment immediately, alter the chair position as mentioned earlier, and give high – flow oxygen.

When stress and anxiety is associated with dental treatment then the value of using sedation may have to be considered.