

## POSITIONAL (OR RESTRAINT) ASPHYXIA FACTSHEET

*This factsheet should be provided to anyone undergoing physical intervention training. Its contents should be emphasised during training to remind learners of the dangers of certain kinds of restraint and signs of impending asphyxiation.*

### INTRODUCTION

Although uncommon, deaths can and do occur following the restraint. A particular risk occurs in certain kinds of restraint. These deaths have frequently been attributed to positional or restraint asphyxia. Staff who use physical interventions must be trained and made aware of the:

- mechanism of restraint
- potential dangers associated with certain restraints
- adverse effects of restraints
- early warning signs of potential harm

### WHAT IS POSITIONAL OR RESTRAINT ASPHYXIA?

Positional or restraint asphyxia is where the subject's body position during the restraint causes asphyxiation. There are a number of adverse effects, the more common of which include:

- inability or difficulty in breathing
- feeling sick or being sick
- developing swelling to the face and neck areas
- developing pinpoint-sized haemorrhages (small blood spots) to the head, neck and chest areas brought about by asphyxiation (petechiae)

### RESTRAINT AND BREATHING

Being able to expand one's chest is essential to breathing as this serves to draw air into the lungs. Minimal chest movement is needed during periods of inactivity or rest. However, following exertion or upset the body requires a great deal more oxygen and both the rate and depth of breathing increases so as to cater for this additional oxygen requirement. Increased lung inflation is achieved by way of increased muscle activity in the chest wall and abdomen as well as in the shoulders and neck. Problems can arise in cases where the body is denied this additional oxygen requirement and this is particularly problematic during restraint where the physical demands of the body are significantly increased.

This can lead to the death of the person being restrained in as little as a few minutes even where the person is still struggling or making noises. It should be emphasised that the body requires very little oxygen to make noises from the mouth but needs considerably more to survive during a prolonged struggle or restraint episode. Thus, a person dying of positional or restraint asphyxia may well be able to some extent to communicate prior to collapse or lapsing into unconsciousness.

### POSITIONAL OR RESTRAINT ASPHYXIA

This term relates to any restraint position that compromises either the subject's airways or expansion of their lungs leading to their breathing being impaired resulting in asphyxiation. Typical positions that can lead to this include any restraint causing:

- restriction of the chest wall
- impairment of the diaphragm (which may be caused by the abdomen being compressed in a prone, seated or kneeling position)
- pressure to the area of the neck

During a violent struggle, the subject may use their arms to brace themselves in order to improve the quality and depth of their breathing. Any restriction of this 'bracing' during the restraint may also disable effective breathing in an aroused physiological state.

A degree of positional asphyxia can result from virtually any restraint position in which there is restriction of the neck, chest wall or diaphragm, particularly in those where the subject's head is forced downwards towards their knees. Restraints where the subject is seated require particular caution, since the angle between the chest wall and the lower limbs will already be partially decreased. Compression of the torso against or towards the thighs restricts the diaphragm and further compromises lung inflation. This also applies to prone restraints, where the body weight of the individual acts to restrict the chest wall and the abdomen, restricting diaphragm movement.

### **KNOWN RISK FACTORS FOR POSITIONAL OR RESTRAINT ASPHYXIA**

There are additional factors that are known to increase the risk of restraint asphyxia. If any of the following factors are identified staff should take extra caution if restraint proves necessary:

- anything that increases the body's demand for oxygen (for example, physical struggle, anxiety or emotion)
- any restriction of or pressure to the neck, chest or abdomen
- significant overweight or obesity
- intoxication (alcohol or drugs). Alcohol and drugs can affect the brain's control of breathing. An intoxicated person is less likely to reposition themselves to allow effective breathing
- psychotic states
- recent head injury or other significant injury
- prolonged restraint following physical struggle or violence causing fatigue
- restraint of a person of small stature
- physical ailments (chest deformities, conditions relating to cardiac or pulmonary functioning, such as asthma, emphysema, etc.)
- unrecognised organic disease
- presence of an excited delirium state, a state of extreme arousal often secondary to mania, schizophrenia or use of drugs such as cocaine, characterised by constant, purposeless activity, often accompanied by increased body temperature. Individuals may die of acute exhaustive mania and this may be precipitated by restraint asphyxia

### **REDUCING THE RISK**

Do not apply any restraint which restricts the subject's chest wall and abdomen in a prone, seated, kneeling or forward reclining position. A combination of chest wall and abdominal restriction in these positions is especially dangerous. Therefore, do not:

- restrain the subject in a prone position where their breathing can be impaired. The condition may be exacerbated if pressure is applied to the subject's back in order to maintain them in this position
- restrain the subject leaning forward in a seated position as this can contribute to obstruction of the airway. If a person must be restrained in a seated position, it is essential that the seated angle is kept as erect as possible
- restrain the subject by bending them forward from the waist and restraining them (hyperflexion)
- put weight on the subject's back to support the restraint procedure as this practice adds stress to the respiratory muscles and inhibits movement of the diaphragm and rib cage.

All of the above can result in restraint asphyxia.

Those under restraint should be closely monitored and observed for any of the following warning signs:

- inability or difficulty in breathing

- sudden increase or decrease in aggression
- feeling sick or being sick
- becoming limp, unresponsive, losing or lowering of consciousness
- respiratory or cardiac arrest
- developing swelling to the face and neck areas
- developing pinpoint-sized haemorrhages (small blood spots) to the head, neck and chest areas (petechiae)
- marked expansion of the veins in the neck

You should always monitor the subject's vital signs using the ABC method:

- **Airway** – ensure the path is free of obstruction and allows the flow of air to the lungs
- **Breathing** – ensure air flows to and from the lungs
- **Circulation** – ensure heartbeat and pulse are present

#### **ACTIONS TO TAKE UPON SUSPECTING ASPHYXIATION**

- immediately release, slacken or modify the restraint as far as possible to effect the immediate reduction in body wall restriction
- summon urgent medical assistance and provide appropriate first aid/CPR