

Risks of Physical Restraint and Positional Asphyxia –Guidance

In some circumstances physical restraint is the only option available to staff to protect the patient or others from serious harm. However physical restraint is not without risks and staff working in areas in which restraint may be required must make an assessment of these risks balanced against the risks of not implementing physical restraint.

Over the past 30 years there have been more than 15 restraint related deaths in health and social care settings in the UK. Some of these deaths have been attributed to positional asphyxia or this had been cited as a contributory factor (asphyxiation due to the position and individual is left or held in). The aim of this guidance document is to ensure that staff are aware of the risks of physical restraint and informed to make risk assessments where restraint may be necessary. NHS Lothian's Restraint the alternatives and considerations policy should also be accessed for direction and guidance.

Of the 15 cases of restraint related death there were common themes that emerged:

- Method of restraint – neck hold's, hog tying, basket holds and prone restraint (face down)
- Multiple staff restraining a patient (more than 4) resulting in pressure on the back and neck of the patient. Staff applying restraint incorrectly or with poor technique resulting in pressure on the neck and back of the patient
- Restraints on beds and sofas face down
- Clinical issues – Obesity, illicit drug use, and mental illness
- Prolonged struggles (between a few minutes and 90 minutes of full exertion)
- Excited or agitated delirium

Each of the above issues will be discussed in further detail in this guidance

NHS Lothian use physical intervention techniques specifically for use in health care that do not use deliberate infliction of pain to gain compliance, ensures that the patient is able to breathe effectively during restraint and have been medically risk assessed for safety.

The physical restraint methods of neck holds, hog tying and basket holds should not be used in NHS Lothian due to the risks they present.

Neck holds – Pressure exerted on the wind pipe and/or on the carotid arteries can rapidly induce unconsciousness and death.



Hog tying – Patients legs and arms are both held or tied behind their back with the patient in a face down position. This position results in hyper-expansion of the chest wall which makes effective breathing difficult. If the patient is carrying excess abdominal weight, this weight is pushed upwards into the diaphragm further restricting breathing. If the patient is been held and downwards pressure is exerted through the back this may result in severely limited respiration.



Basket holds – in this position a patients arms are cross across the front of their body and secured by a member of staff from behind. This can be done in a seated or standing position by one or two staff. Again the inwards and upwards pressure exerted across the patients abdomen pushes up towards the diaphragm limiting the lung capacity. If the patient is bent over (seated or standing) lung capacity is reduced even more.



Multiple Staff restraining a patient

In NHS Lothian this means more than 4 people in a take down to a floor restraint (one restraining each arm, one restraining the legs and one person leading the restraint, protecting the head and monitoring breathing). For a take down to the floor four members of staff is best practice, for face up trolley and bed restraint three staff are required and for standing holds and seated restraint two members of staff are required.

In extreme circumstances further staff may be brought in to reinforce existing restraints however there must not be any pressure on the neck or back area of the patient. If staff are struggling to maintain restraint, technique should be checked and the option of another member of staff taking over the restraint should be considered before using additional staff in the restraint.

When staff are not trained or apply restraint incorrectly there is a risk that in order to maintain control they get more and more staff involved. When staff are not trained and do not understand the risks there is potential that they control the patient by using their body weight to restrict movement. This results in compromised breathing ability and the risk of fatality.

Restraints on sofa's and beds face down

There is no safe technique to get a patient face down onto a bed for restraint, neither is there a safe technique to get them from a sitting position on the side of a bed to a face down position. When patients are restrained on beds or sofas it is very difficult for staff to gauge the amount of pressure being applied. A far greater pressure can be applied to a patient on a bed or sofa than can be applied to a patient on the floor without causing discomfort. As the bed or sofa yield under the weight of the patient and prevents the patient from being able to lift their chest and shoulder to enable them to fill their lungs effectively. There have also been deaths during restraint in which the patient has been able to bite down onto pillows, bed clothes or towels placed under the heads which has limited breathing due to the restriction of airway.

Clinical Issues

There is a range of clinical issues that can have an impact on the safety of physical restraint for patients:

- **Obesity**

As mentioned earlier, for patients who are obese or carrying excess abdominal weight, face down restraint carries the risks of weight being displaced upwards into the diaphragm limiting lung capacity.

- **Mental illness**

The delusional ideas that a mentally ill patient may be experiencing can result in extreme fear, this leads to catecholamine stress on the heart and this fight or flight response may drive prolonged struggles.

- **Medication and drugs**

CNS depressants such as alcohol, benzodiazepines, barbiturates, GHB and opiates can all cause respiratory depression.

Neuroleptics have been linked to sudden death in psychiatric patients due to cardiac arrhythmia and respiratory failure.

Administration of neuroleptic medication particularly during restraint may pose a risk by impairing the patient's ability to swallow and expectorate effectively.

Neuroleptic malignant syndrome (NMS) is rare however there are concerns that if its symptoms are not recognised then there is potential that it is managed using restraint and additional neuroleptic medication.

Cocaine and other stimulant recreational drugs have been linked to agitated and excited delirium (see below).

- **Physical conditions**

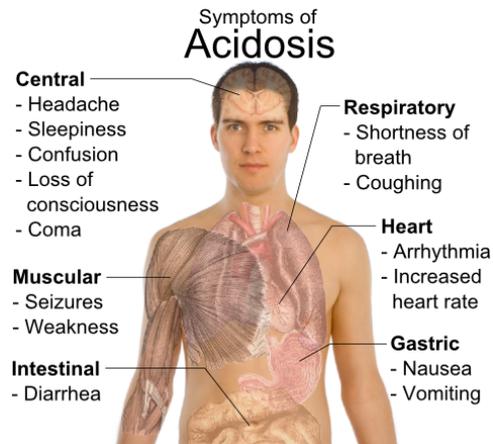
Medical conditions that effect cardio-respiratory function ranging from the common cold to chronic obstructive pulmonary disease will have an impact on a person's ability to breathe during a restraint.

Sickle cell anaemia causes blood cells to stick together which can block blood vessels and reduce oxygen and blood flow.

Pregnant woman cannot be restrained in a face down position and should not be restrained in a face up position as lying flat on the back cause's compression of the anterior vena cava restricting blood flow in the mother and baby. Pregnant woman should be restrained in a seated or semi-recumbent position (using specially designed furniture).

Prolonged or intense struggles

Prolonged or intense struggles were a factor in many of the restraint related deaths in the UK. The time factor in cases of restraint related death varies from a few minutes to 90 minutes of intense struggle. Intense struggling increases the body's requirement for oxygen if the patient in being restrained breathing may already be compromised. Excessive and continuous muscle metabolism resulting from an intense struggle leads to severe acidosis (see below):



When patients are admitted following contact with the police staff should find out what has happened to the patient whilst in police custody as this will have an impact on the risk factors once the patient is receiving care and treatment.

Excited or agitated delirium

Excited or agitated delirium can result in death due to exhaustion from mental excitement. This condition can occur due to mania, psychosis and stimulant use. The symptoms commonly exhibited are:

- Sustained mental and motor excitement
- Confusion
- Agitation
- Hyperthermia and clammy perspiration (Patients often strip off clothing)
- Hyperactivity (involving potentially extreme exertion)
- Falling blood pressure
- Delirium and death

Patients experiencing excited delirium often need to be restrained as their behaviour may cause risk of harm to themselves or others. Altered pain perception combined with extreme fear may them result in intense and prolonged struggle until the patient collapses or dies.

Prevention of restraint related death

- NHS Lothian's restraint policy gives staff direction in relation to the decision making process around restraint intervention.
- This policy makes it clear that all staff who may be expected to restrain patients should be competently trained to implement physical restraint. The Management of Aggression Team provides training for staff in both high and low level restraint techniques according to the needs of the clinical area.
- The Management of Aggression Team also run Advisor training courses for staff so that expertise can be developed and applied in the clinical area.

- The NHS Lothian Restraint policy dictates that risk assessments should be undertaken and documented in relation to individual patients restraint needs. This should be done via consultative decision making involving the multi-disciplinary team, the patient and their family or carers.
- This guidance document aims to explain the risks to staff who may be required to restrain patients so that they make an informed assessment of the potential risks.
- Restraint should be avoided where possible as there is no type of physical restraint that is 'safe' or risk free. Prone (face down) restraint has been cited as a factor in restraint related deaths however prone only refers to the face down position of the patient and not the type of restraint applied.
- Prone restraint is the most secure physical restraint intervention option, and is often the only option when managing extreme aggression. Lower level options such as seated restraint are encouraged when the risks can be safely managed in this way. There may be patients who due to physical conditions, drugs (prescribed and illicit) and mental state it would present too great a risk to place in a prone restraint.
- When implemented as taught by the Management of Aggression Team prone restraint is secure, there is no pressure placed on the patients back or neck and every opportunity for the patient to breathe freely is promoted. Observation of the patient's airway, breathing and circulation is reinforced during training as an essential component of restraint.

Evidence base and further reading:

- Paterson B, Stark C, Saddler D, Leadbetter D, Allan D, **Deaths associated with restraint use in health and social care in the UK. The results of a preliminary Survey**, Journal of Psychiatric Mental Health Nursing, 10, 3-15, 2003
- Morrison A, Sadler D, **Death of a psychiatric patient during physical restraint. Excited Delirium – a case report**, Medical Science Law, 41 (1), 46- 50, 2001
- **The lethal hazard of prone restraint: positional asphyxiation**, Protection and Advocacy INC Investigations Unit California, Publication number 7018.01, 2002
- NHS South Central, Board Paper HA06/037, **Report into the Treatment and Care of Geoffrey Hodgkins**, South Central Strategic Health Authority 2006

- Royal College of Nursing **“Let’s Talk About Restraint”**