

- If more than one person is carrying out the procedure, agree a safe system of work in advance to ensure the person holding the needle does not inadvertently stick the hand of the person assisting.

### 3) Other cuts and abrasions

Cuts from scalpel, razor or other blades, sustained while cutting plastic tubes or tubing; opening packages; scraping off adhesive labels; etc frequently occur because of misuse of scalpel or razor blades, which are not designed for any of these tasks.

- Use only the correct tool for the job. Do not use scalpel blades and razor blades unless absolutely necessary and when it is then handle with care.
- Wherever possible use single unit disposable scalpels rather than changing the blades on a re-useable holder.
- Where a blade is used in a holder, take particular care when changing the blade and avoid holding with fingers and applying force or excessive pressure in case it slips or gives way suddenly.
- Dispose of used scalpels, razors, blades etc in a sharps bin.
- Use labels that can be easily peeled-off avoiding the need for scraping etc.

### 4) Splashes and contamination in eyes and on skin and mucous membranes

These types of incidents often arise in conjunction with some sort of spillage or breakage and many of the measures detailed above will also minimise the risk of these types of injuries. Where working practices are such that splashing may occur wear eye and face protection (goggles/safety glasses and mask or a full face visor).

## B) ACCIDENT PROCEDURE

### 1) First Aid measures

In the event of sustaining an accident resulting in a wound:

- Immediately wash the wound liberally with soap and water but without scrubbing.
- Gently encourage free bleeding of puncture wounds but do not suck the wound.
- Dry the area and apply a waterproof dressing.

In the event of contaminating skin, conjunctivae or mucous membranes:

- Immediately irrigate the area copiously with water.
- In the case of eye contamination, irrigate both before and after removing any contact lenses.

In the event of a serious injury requiring medical attention:

- Attend the Accident and Emergency Department of the local hospital.

### 2) Additional priority actions

In the event of any accident where exposure to a pathogen, genetically modified micro-organism or potentially infectious material may have occurred (including when this is unknown):

- Identify the possible infection risk and retain any items involved in the accident. Tracing the source of any infectious or potentially infectious material will enable an informed assessment of the risk of infection to be made and may be key to deciding on prophylactic treatment etc.
- **IMMEDIATELY** inform the Occupational Health Service - it is important that medical personnel assess the need for any prophylactic treatment or health surveillance on a case by case basis.
- Alternatively, for example out of normal working hours, contact the Accident and Emergency Department of the local hospital.

### 3) Reporting

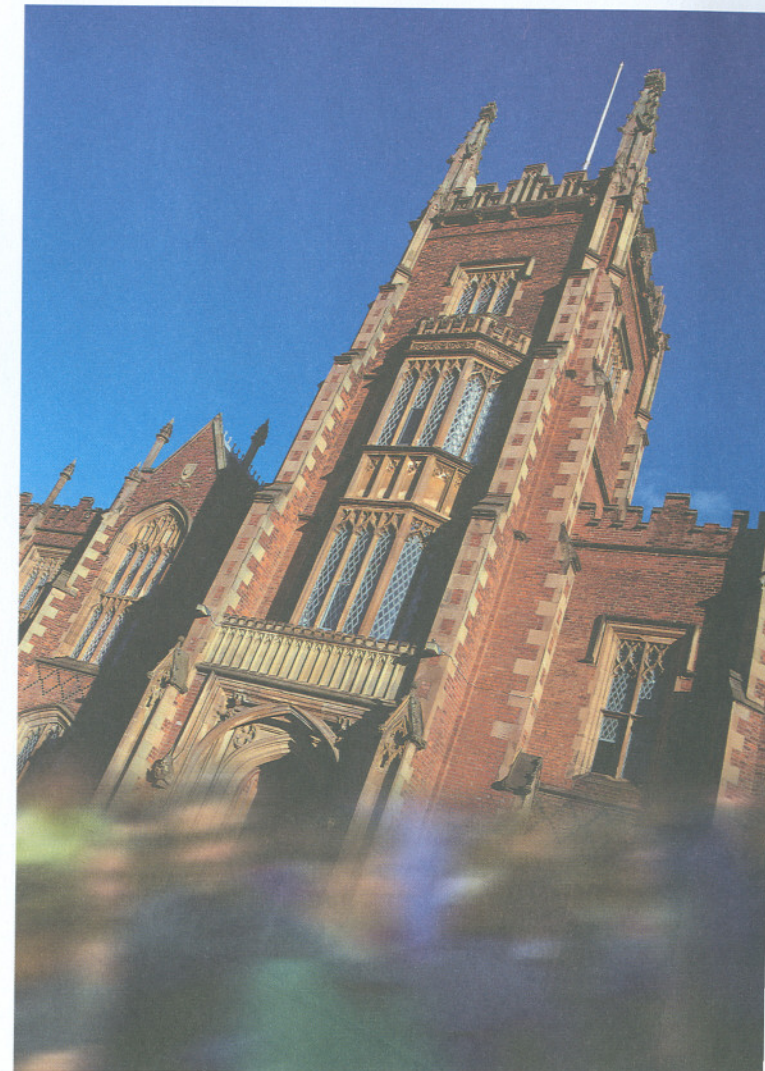
Needlestick and sharps injuries are potentially very serious and must **always** be reported, recorded and followed up. All accidents and incidents should be reported to and recorded by the person responsible for the work. Report all incidents to your supervisor and/or the School/Dept Safety Adviser. They in conjunction with the individual(s) involved will investigate the circumstances of the incident to establish the cause of the accident or incident and identify what should be done to prevent any recurrence. An accident report should then be forwarded to the University Safety Service as soon as possible. In the event of any accident where exposure to a pathogen or genetically modified micro-organism may have occurred, the Supervisor or responsible person in charge must inform the University Safety Service as soon as possible – it may be necessary to report any such incident promptly to the enforcing authorities. Where required, further advice can be obtained from the University Biological Safety Officer or the University Occupational Health Physician, ☎ 5520.

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## A GUIDE TO PREVENTING INJURIES FROM GLASS AND SHARPS





## INTRODUCTION

Some of the most common injuries reported to the University Safety Service are those caused by accidents with glass or sharps. Most are not too serious but a significant proportion will require hospital treatment. Usually this is just stitches though incidents involving tendon or nerve damage, or even cut arteries, may result. Of note is that some, especially those involving sharps used in containment laboratories, carry an associated risk of infection. In containment laboratories where the micro-organisms being handled infect via the percutaneous route, the use of sharps and glass items should be avoided wherever possible. When these types of accidents are investigated it is apparent that most incidents can be avoided with good management systems in place, consisting of initial instruction and training on correct procedures and with ongoing supervision and monitoring. In order to minimise the likelihood of accidents arising as a result of poor working practices, all individuals using sharps items should receive appropriate instruction and training on how to work safely when handling glass and sharps and, in particular, how to avoid needle-stick injury. The following instructions on preventing sharps injuries should be supplemented with on-the-job training.

## INJURIES FROM GLASS AND SHARPS

When you work with needles, glass and other sharp items you are at risk of sharps injury. If you also work with blood or human tissues, such injuries can lead to life threatening infections such as hepatitis B, hepatitis C and HIV. If you also work with micro-organisms, an injury could result from a significant exposure with the risk of a related infection.

In order to minimise the likelihood of accidents arising as a result of poor working practices and to take the correct action in the event of any accident that may occur, ALL individuals using sharps should be aware of, and use, the following which must be regarded as standard working practices when handling glass, needles and other sharps.

### A) PREVENTION

#### 1) Glass injuries

Injuries from broken glass are often sustained while inserting pipettes into pipetting aids or Pasteur pipettes into teats; attaching glass to or removing glass from rubber or plastic tubing; removing "frozen" stoppers from glass bottles; breaking glass tubing; and handling or washing up broken glassware. These injuries may be largely avoided by instruction in correct techniques and by ensuring glassware is in good condition (without chips or cracks) before use.

#### REMEMBER TO:-

- Use plastic alternatives to glass wherever possible.
- Repair or dispose of broken or chipped glassware in accordance with local procedures.
- Avoid applying force or excessive pressure when handling glass items in case the item slips or gives way suddenly and breaks.
- Carry glass items in a box or something similar to minimise the risk of dropping them.

#### 2) Needle-stick injuries

These usually occur as a result of poor handling techniques or incorrect disposal with the latter often affecting someone other than the original user. Where an individual receives a needlestick injury from something they haven't been working with, it can be particularly worrying if it is not possible to trace the source of the item and allay fears of infection with HIV, hepB etc. The most common point at which a needlestick injury arises is after use at the point of disposal because of unnecessary additional handling by users – **a used needle should be placed directly in a sharps bin at the point of use without either detaching the needle or re-sheathing.**

- Use a needle or sharp item only if it is necessary to do so and then use it only for the purpose it was designed. Always consider less hazardous alternatives wherever possible.
- Once the seal on the sheath of a needle has been broken, carry out any subsequent handling with extreme care and keep handling to a minimum.
- If it is necessary to carry needles or syringes, place them on a tray or in a sealed container.
- **Never re-sheath needles** following use unless a safe system for doing this has been adopted - never hold the sheath with your fingers as if the needle misses the sheath it will puncture a finger.
- Do not detach the needle from the syringe unless absolutely necessary and a safe system for doing this has been adopted.
- Do not put needles and syringes being used on the bench mixed with other items, only put them in something like a tray and make sure they are clearly visible.

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- Do not re-use needles so it is always known what a particular needle has been used for.
  - Place used needles and syringes, or any other types of sharps, directly into a sharps bin for disposal. Do not detach the needle prior to disposal.
  - Have a sharps bin available at the point of use to enable immediate disposal - it is your responsibility to dispose of the sharps you have used, do not leave them for someone else to clear up.
  - Dispose of used sharps only in a sharps bin or container which conforms to British Standard 7320:1990 and is UN type-approved for transport - **cardboard-type Cin-Bins do not meet this specification and must not be used.**
  - Use a sharps bins only until the contents reach the fill line marked on the side of the bin – do not overfill, used sharps protruding from bins are very dangerous for those who have to handle them.
  - **Never place sharps or sharps bins in plastic bags for disposal** - sharps bins are clearly identifiable whereas handlers of bags would not expect them to contain sharps. Putting a sharps bin in a bag is particularly hazardous as it is not readily visible if the lid has come off resulting in sharps being loose in the bag.
  - Clearly label sharps bins for disposal prior to them leaving the area in which they are generated. If there is an incident at any point in the waste disposal chain it must be possible to trace the item back to where it was produced in order that any infection risk associated with the contents can be assessed.
- When using needles to inoculate animals with infectious materials:
- Wherever possible immobilise or restrain the animal to minimise any unexpected movement.
  - Position hands carefully such that the needle is not pointed either towards your hands or the hands of anyone who may be assisting.
  - Ensure you are not likely to be disturbed during the procedure - someone knocking on the door or making a sudden entry could cause you or the animal to jump so increasing the risk of needle-stick injury.
  - Always wear eye protection.