

## STANDARD OPERATING PROCEDURE:

### Use of Centrifuges and Handling of Bodily Fluids for Centrifuging in Research

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<b>SOP SUMMARY</b>		
<p>When using a centrifuge and handling bodily fluids, it is essential to minimise the risk of injury to staff and cross-infection. This Standard Operating Procedure describes safe practice and must be followed by all staff involved in the use of centrifuges for research purposes.</p>		
<b>The Trust monitors the implementation of and compliance with this policy in the following ways:</b>		
Monitoring of implementation and compliance with this procedure will be undertaken by the Executive Medical Director, Research manager, Research lead, R&D department staff and R&D group.		
<b>Services</b>	<b>Applicable</b>	<b>Comments</b>
Trustwide	✓	
Essex MH&LD		
CHS		

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## 1. INTRODUCTION

When using a centrifuge and handling bodily fluids, it is essential to minimise the risk of injury to staff and cross-infection. This Standard Operating Procedure describes safe practice and must be followed by all staff involved in the use of centrifuges.

## 2. PROCEDURE

1. Prepare blood/urine bottles, freezing tubes and documentation prior to collecting samples.
2. When handling **all** samples, gloves, apron, and eye protection must be worn at all times. Do not leave clinical area whilst still wearing gloves – they must be removed and hands washed immediately at designated area.
3. Ensure there is allocated responsibility for the reordering of clinical equipment (gloves, aprons, sharps bin etc.)
4. If sharps bin is full please seal the bin and discard in accordance with local policy, in the appropriate clinical waste bin.
5. Place blood/sample bottle(s) in rotor/bucket within centrifuge, counter balance with exactly the same size blood/sample bottle (containing the same amount of water as the blood bottle contains blood, e.g. 4mls) and ensure lid is screwed down firmly. **No** samples should be loose within the rotor.
6. Adjust setting to required speed and time, as required per trial protocol. Press start if required.
7. If load is unbalanced and machine starts to shake, switch off immediately and clear the area until the machine stops. Some centrifuges will cut out if the load is unbalanced. Rearrange the load, so it is balanced and restart the centrifuge.
8. The centrifuge lid should not open whilst the rotor is spinning. **NEVER** try to open the centrifuge while the rotor is spinning.
9. Once centrifuge has finished spinning, release door and put gloves and apron on. Unscrew lid of rotor/bucket carefully (in case of breakage see below).
10. Switch on laminar airflow, place blood sample under hood and remove blood/sample bottle cap. With a clean pipette, at eye level, place into blood bottle without disturbing bottom layer of sample. Withdraw clear/straw coloured fluid and place into already prepared aliquots/tubes that are required.
11. Ensure all tubes/aliquots for freezing are correctly and clearly labelled with indelible pen prior to storing in freezer.
12. Discard pipettes and blood bottles no longer needed into sharps bin, gloves and aprons into yellow clinical waste bin.
13. Update Freezer Log.

### 3. MAINTENANCE

1. Please refer to manufacturers manual and guidelines.
2. To maintain good appearance and prevent dirt build up, the rotor/buckets should be removed every 6 months from the machines and placed into a bucket containing bleach/detergent, soaked for approximately 30 minutes and then cleaned. The rest of the centrifuge also needs to be cleaned with detergent and the keypad once cleaned, should be dried straight away.
3. Centrifuges to be serviced as per manual or on a yearly basis.

#### **Never use a centrifuge if:-**

- a. You have not been fully trained.
- b. The lid does not shut properly.
- c. There is any sign of corrosion on the buckets, or any parts or screws are missing off the rotor head.
- d. It is unbalanced.
- e. Any visible wearing in the electrical wires.

### 4. BREAKAGES

In the event of specimens breaking in the centrifuge, do not remove the bucket/rotor lid. If the lid has been removed, replace it as soon as possible.

If you have any queries, please contact the R&D manager.

1. Wear gloves, apron and eye protection. Remove sealed bucket/rotor from centrifuge (spanner/equipment should be located near the machine for this) and submerge into a bucket containing diluted bleach/detergent.
2. Remove lid whilst submerged in the bucket of diluted cleaning fluid – aerosols therefore will not be released into the air and leave to soak for approximately one hour.
3. Any broken glass or plastic from the blood/sample bottles is to be handled with extreme care and placed into a sharps bin. Discard bucket contents down the sluice/toilet and flush twice.
4. Clean the rotor/bucket with detergent, dry and replace into centrifuge.

A summary of this SOP (Appendix A) must be displayed adjacent to all centrifuges used for research purposes.

## Appendix A

### HANDLING OF BODILY FLUIDS AND CENTRIFUGE

- When handling **all** samples, gloves, apron, and eye protection must be worn at all times. If any item is unavailable please inform R&D department.
- **Do not leave clinical area whilst still wearing gloves.** Remove gloves, wash your hands and replace with new gloves when you return.
- **Do not overfill the sharps bin.** If it is full please seal the bin and discard in the appropriate clinical waste bin.
- Make sure you balance all samples in the centrifuge. If load is unbalanced and machine starts to shake, switch off immediately and clear the area until the machine stops. Rearrange the load, so it is balanced and restart the centrifuge.
- **NEVER** try to open the centrifuge while the rotor is spinning.
- Laminar airflow must be used when handling all blood samples.
- All tubes/aliquots must be clearly labelled with indelible pen prior to storing in freezer.
- Place all **used pipettes and bottles into sharps bin.** If almost full please empty.
- **Place used gloves and aprons into yellow clinical waste bin.**
- If a specimen breaks, leave the specimen in place in the centrifuge and contact the R&D Department for advice.