

NDMRB-RA-067

Risk Assessment: Safe Use of Laboratory centrifuges

Scope

Only trained personnel are allowed to use centrifuges – please contact the lab manager to arrange training

Centrifuges are used to separate substances within liquid samples. They are driven by a motor, which can spin at high speed and subsequently high g. Centrifuges are powerful and specialist pieces of laboratory equipment and should be treated as such. The most serious incident that could occur would be the rotor separating from the spindle and smashing into the side.

The use of centrifuges outside of core working hours (8am-6pm) is permitted by trained personnel. In the event of a failure of a centrifuge (regardless of when the failure occurs) the lab manager must be informed. The centrifuge must be left with clear signage indicating that there has been a failure and where it is safe to do so the power must be switched off.

This replaces TDI-RA-003

Name of assessor:	Andrea Keepence-Keyte – Laboratory Manager	Date of Assessment:	January 2015	Review Date:	Every 3 years
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Risk Matrix:

Risk Matrix		Likelihood			
		High	Medium	Low	Negligible
Consequence	Severe	High	High	Medium	Effectively Zero
	Moderate	High	Medium	Medium/low	Effectively Zero
	Insignificant	Medium/Low	Low	Low	Effectively Zero
	Negligible	Effectively Zero	Effectively Zero	Effectively Zero	Effectively Zero

Risk Assessment:

Hazard (Cause and consequence)	Affected Groups	Existing controls	Risk	Further Action
Mechanical failure of rotating parts (often violent).	Staff Students Visitors	<ul style="list-style-type: none"> Ensure that centrifuges are cleaned properly and with non-corrosive detergents Ensure that usage of rotors and centrifuge is recorded where relevant Ensure that centrifuges are serviced on a regular basis Ensure that end users are trained in the proper and safe use of centrifuges 	Medium	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges
Contact with rotating parts.	Staff Students Visitors	<ul style="list-style-type: none"> Ensure that end users are trained in the proper and safe use of centrifuges Ensure that the lid lock is in good working order Ensure that end users NEVER to attempt to open a centrifuge whilst a program is running Ensure that end users know how to load and balance a centrifuge correctly 	Medium	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges

Sample leaks causing aerosols, stress corrosion, contamination	Staff Students	<ul style="list-style-type: none"> • Ensure that end users are using the appropriate tubes for samples • Ensure that centrifuges, rotors and buckets are cleaned and dried after every use • Ensure that end users clear any spillages 	Medium Low	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges
Fire and/or explosion gases or fluids	Staff Students Visitors	<ul style="list-style-type: none"> • Ensure that end users are using the appropriate tubes for samples • Ensure that the centrifuge is turned off after every use/at the end of each day 	Medium	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges
Contact with contaminated components / vapours	Staff Students	<ul style="list-style-type: none"> • Ensure that end users are using the appropriate tubes for samples • Ensure that centrifuges, rotors and buckets are cleaned and dried after every use • Ensure that end users clear any spillages • Where possible use centrifuges with clear lids so that any split tubes can be spotted before opening the centrifuge and correct PPE and/or fume hood can be used before opening 	Medium Low	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges
Exposure to aerosols from spilt tubes when spinning blood/plasma	Staff Students	<ul style="list-style-type: none"> • ALWAYS spin bloods/plasma samples using lids to avoid exposure to aerosols formed if a tube splits. • Use centrifuges with clear lids so that any split tubes can be spotted before opening the centrifuge and correct PPE and/or fume hood can be used before opening 		All users must have read NDMRB-RA-103 Work with human blood and tissue

Manual handling injuries (Musculoskeletal Disorders)	Staff Students	<ul style="list-style-type: none"> • All staff using centrifuges must be adequately trained, read and understood relevant SOP • Ensure that adequate training regarding lifting of heavy equipment is provided • Store heavy rotors at bench height where possible 	Medium	Ensure all users are trained before use. All users must read and understand the SOP and RA before use of any centrifuges
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Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: