

MR Research Suite Process Baycrest ~ RRI

Revised June 2022

~ **MR Suite Zones** ~ (Reference to the 2020 ACR MR Safety Document, 2011 CAR Standard for Magnetic Resonance Imaging and MOHLTC OHTAC)

<https://www.acr.org/-/media/ACR/Files/Radiology-Safety/MR-Safety/Manual-on-MR-Safety.pdf>

<https://car.ca/wp-content/uploads/Magnetic-Resonance-Imaging-2011.pdf>

http://www.health.gov.on.ca/english/providers/program/ohtac/tech/recommend/rec_mri_041806.pdf

The MR suite is divided into **4 Zones** as follows:

Zone 1 ~ Public Access ~ No restrictions ~ The MR waiting area immediately outside the suite doors.

Zone 2 ~ Limited Access ~ Interview room, washroom, change room, simulator room, offices.

Zone 3 ~ Restricted Access ~ MR control room / console area / Mechanical Room.

Zone 4 ~ Restricted Access ~ MR scanner room.

Magnet information

~ Siemens 3.0 Tesla Magnetom **Prisma^{fit}** Whole Body MR Scanner ~ Installed December 2020

~ XA 30 Software April 2022 ~ 60 cm Bore aperture ~ Maximum weight of 200 kgs, XR 80mT/m @/200 T/m/s gradients. Pulse Sequences; Standard MR Sequences including Advance Neuroimaging and functional sequences, MRS, DSI, ASL, DWI, DTI, SWI, epi-BOLD. ~ 20, 32 & 64 channel Matrix Head Coils.

Infection control

Everyone is responsible for infection control. Hand washing is essential to prevent the spread of infectious diseases ~ All persons are required to wash their hands on entry and exit from the Lab. The researcher is also required to wash hands after each physical contact with the participant and prior to utilizing any MR Lab equipment.



No eating or drinking in the MR suite

No eating or drinking is permitted in the MR control area. Participants & researchers are encouraged to drink and eat in the cafeteria or elsewhere if necessary and not in the interview, simulator or MR Control rooms.

Facility Maintenance

Environmental Maintenance of the suite is scheduled for Monday, Wednesday & Friday from 08:00 – 08:30 hrs. To avoid any accidents please do not walk on the floors when wet. Allow 5 minutes for floors to dry.

Cellular / Phone access MR suite

Depending on your cellular provider, there is limited cellular access in the basement level @ Baycrest. The phones located in the interview room and simulator room may be utilized for brief calls by the researcher or participant. Please dial 9, prior to the area code for external access.

Waiting area outside of MR suite ~ public access ~ Zone 1

There is a small waiting area outside the suite for your utilization ~ i.e. early arrival, filling of forms (consent & MR screening) and waiting area for participant relative or companion etc. Please do not discuss or leave sensitive information in this public area.

Interview room utilization ~ limited access ~ Zone 2

This is a shared resource ~ The interview room is utilized by the Level 11 MR Personnel to interview the participant in private with respect to their MR screening form and medical history prior to changing for the MR exam. The Participant will wait in the interview room prior to their MR exam and after being scanned as required for debriefing (up to 5 minutes post scan). This room is also utilized to equip your participant with MR safe eye glasses, if required. (An eye chart is available just outside the interview room adjacent to the change room. Position your participant at marker on change room door facing the eye chart ~ this represents the approximate distance the participant will be from the projector screen when in the magnet bore ~ select the appropriate font size based on your experiment presentation and verify visibility with the participant). Inform the Level 11 MR Personnel of the prescription required. This can be written at the top of the screening form.

MR control room / console area ~ restricted access ~ Zone 3 ~ Must be accompanied to this area by Level 11 trained MR Personnel (MR Technologist)

This area is restricted to the Researcher, Level 1 MR Personnel, and the MR Technologist / Level 11 MR Personnel. Entry to Zone 3 is restricted and under the supervision and control of the MR Technologist / Level 11 MR Personnel. Transition zone to magnet room Zone 4 for participant.

MR Scanner Room ~ restricted access Zoon 4 ~ Under the constant direct supervision of Level 11 MR Personnel ~ Level 11 MR Personnel must be present at all times.

Level 11 MR Personnel, MR Screened Participant and Level 1 MR Personnel as required to assist or set up ancillary equipment.

Creating an account for the Baycrest MR Web Scheduler

Contact the Senior Research MR Technologist, Garry @ gdetzler@research.baycrest.org
<http://rotman-baycrest.on.ca/index.php?section=340>

- 1) If you **don't** already have an account at rotman-baycrest.on.ca, please create one (visit "Create an account" at the top right of the site). Please note if you are on staff at RRI, an account and user name has already been created for you.
- 2) Once you have created an account, email the (Senior MR Technologist, Garry) @ gdetzler@research.baycrest.org with your user name.
- 3) When Garry confirms that he has added you to a project, you will be able to access the scheduler at: <http://www.rotman-baycrest.on.ca/index.php?section=340> when logged in.
- 4) To view the scheduler, visit the "Reservations" link.
 - a) If you are in multiple projects, you can select which project you are making a reservation for using the drop down menu and click "View Project Schedule".
 - b) You will be able to create a reservation everywhere that the timetable is marked Green. Your ability to modify your project's existing reservations will depend upon your project's settings.

~Please note~

- **Web scheduler project access** ~ Access is granted to members of active projects, as outlined on your REB / IOC forms.
- **Web scheduler weekly hours quotas** ~ The number of hours available weekly is based on your IOC application request ~ the default for most projects is 2 hrs / wk. However if you are over your weekly quota and there is an opening available within two weeks of the scan date, contact the MR Technologist via email, OR if within 72 hrs of the scan date via phone @ 3320, with your project ID # and participant ID # to make the reservation for you.
- **Cancellations** ~ Cancellations are completed on line by the researcher up to 72 hrs prior to schedule reservation (***No charge***). To cancel your reservation on line ~ open the reservation and select ~ click here to delete reservation (top left hand corner).
Cancellations / Changes within 72 hrs of scheduled reservation should be phoned to (416) 785 2500 ext 3320 (***Full charges will apply***). There is no access to cancel or make changes on-line, within 72 hrs of your reservation.
- **No shows ~ (at the MR suite)** ~ billed at half rate.
- **Maximum advanced reservation time** ~ 30 days.
- **Minimum time required to self schedule** ~ 72 hrs. Please note that if there is an open reservation and you are inside of the 72 hrs requirement you may contact the MR Technologist @ (416) 785 2500 ext 3320 with your project ID, and participant ID # to reserve the time slot for you.
- **Emergency reservations** ~ Tuesday, 10:30 – 12:00hrs & Thursday, 13:00 - 14:30hrs. ~ reserved for studies requiring an MR within a 48 hour time frame prior to start of treatment. Contact the MR Technologist @ 3320 to reserve these slots.
- **Subject ID #** ~ A valid subject ID assigned to your MR project is required on your web scheduler reservation to submit your reservation.
- **MR Simulator hours of operation**~ Monday–Friday, 08:30– 20:00hrs*, Sunday, 08:30-20:00 hrs.* If assistance is required to set up stimulus computer or other devices for your experiment, contact our MR Lab Specialist, Jacob Matthews @ jmatthews@research.bacystest.org or at (416) 785 2500 ext 3322 at least 72 hrs in advance.
- ***After hours Simulator Use:** See Process at end of this document.
- **MR scanner hours of operation** ~ Monday – Friday, ~ 08:30 - 12:00, 13:00 -15:30hrs. Additional hours ~ Sunday, 09:00 – 12:30, 13:30 -16:00hrs & Monday – Thursday, evenings, 15:30 – 17:30 hrs. (*based on demand and Relief MR Technologists schedule*)
- **Interview Room** ~ automatically reserved with your scanner reservation and is available to the Researcher and participant 15 minutes prior to table time and 5 minutes after completion of study.
- **fMRI Stimulus computer and accessories (MR control area)** ~ available for reservations Monday – Thursday 15:30 – 17:00 hrs (*if no afternoon shift*) and Friday 16:00 -17:00hrs.

Active Project

A project is considered active when the following requirements are met:

- (1) The REB and IOC approval documents are received in the MR Lab
- (2) The Virtual MR Safety Training & Orientation session and in-person suite tour is completed
- (3) The MR project # is issued to the primary investigator and associates, with your project activated on the web scheduler for reservations.

Application Forms

Forms on the Web ~ *Ethics form*; www.rotman-baycrest.on.ca/index.php?section=324

MRI documents; <https://www.rotman-baycrest.on.ca/>

MR application form (Imaging Oversight Committee ~ IOC form) Fillable PDF, PDF & word; Baycrest MRI equipment list; MRI lab equipment information; Baycrest 3.0T participant MR safety screening form; MR process; MRI (blank) protocol template; 3.0T MR generic consent template; MRI lab access flow chart; MR Safety document etc.

Participant Database ~ Registration and request of research participants from the database; <http://www.rotman-baycrest.on.ca/index.php?section=670>

Please check the Website to ensure that you are using the most up to date participant MR screening form.

Pilot scanning

Coordinate with the Senior MR Technologist (Garry, gdetzler@research.baycrest.org) Pilot scanning is conducted Monday – Friday 08:30 - 12:00 and 13:00 - 15:30hrs. Please indicate on your reservation under user's note that it is a pilot scan.

Please email the Senior MR Technologist (gdetzler@research.baycrest.org) your protocol 72 hrs (not including Saturday, Sunday) prior to your first scheduled pilot scan. This should include the number of functional runs, structural and any other sequences required, i.e. Field Maps, ASL, DTI, etc., visual or auditory stimulus or both, finger placement for the response box (unilateral or bilateral), whether you will be collecting physiological data and any additional equipment you will be using i.e. eye tracker, motion tracking, writing tablet, EEG, GSR, EMG etc. You may reference types of scans, etc. by using this link: [MRI Scanning at the Rotman Research Institute](#)

Participant's arrival

All participants are expected to arrive 15 minutes prior to their scheduled table time with their coordinator/research assistant. i.e. Scheduled time of 14:00hrs which represents table time, participant is required to be here @ 13:45 to allow for screening and changing.

The only exception to this arrival time is if you are scheduled directly following the lunch hour on a Sunday ~ Please arrive at your scheduled table time i.e. 14:00 hrs on Sunday and NOT 13:45hrs as the Technologist's lunch hour is 13:00 - 14:00hrs.

There is a small waiting area outside the suite for your convenience ~ i.e. early arrival, wait area for participant relative or companion etc.

Participant scanning requirements

MR screening form with participant ID # filled in - **Required** - participant ID # can be obtained by creating a request on the Participant data base @ <http://www.rotman-baycrest.on.ca/index.php?section=670> ~ Subject coordinator @ 416 785 2500 ext 3634.

The MR screening form is to be completed by the ***Participant*** prior to arrival. *The date on the screening form is the **scheduled date** of the MR Scan.*

Project ID # (i.e. MRI 00) on the screening form - **Required**

Copy of signed Consent Form (signature section page only) should include information with respect to PI and who the subject should contact - **Required**

Flow process ~ Participant changing ~ Restocking of Locker ~

On arrival, AFTER the MR Technologist reviews the MR screening form with your participant in the interview room, you may get your participant changed.

All participants are required to remove all jewelry, metallic and electronic items, all clothing except for underwear (i.e. panties & boxers). A hospital gown tied at the back and a pair of PJ bottoms tied in the front are provided for all participants to change into. Remind your participants to use the bathroom facilities after changing. Changing instructions are posted next to the mirror in the change room.

Once your participant is changed, please direct them back to the interview room. The MR Technologist will escort the research participant into the magnet room and the researcher into the control area from the interview room.

We operate a clean locker system, therefore all shoes / boots are to remain outside the lockers, placed under the bench. Dirty linen is disposed of in the bin provided. You will need to restock the locker after use. Please take supplies from the bottom left locker which is stacked one PJ bottom and one hospital gown. Participants ~ 250 lbs and over may require a 2 gowns ~ one tied in the back and one tied in the front ~ No PJ bottoms as they may not fit. Socks must be removed ~ Paper shoes are stored in the bottom right locker

The single washroom in the MR suite, is a shared resource ~ therefore, please ensure that your participant remove all their possessions from the washroom prior to and after being scanned. Please check prior to departure. Additional washrooms for staff use are located across the hall (Men's Locker room) and beside the MR suite (Women's Locker Room).

Examination completion ~

The MR Technologist will remove the participant from the scanner and hand over to the researcher ~ the researcher monitors the change process, restocking of locker, removal of all belongings from lockers and exit from the suite. The interview room is available for debriefing etc. up to 5 minutes post scan if required and available.

Flow process ~ MR simulator

On arrival, instruct your participant to wait in the waiting area just outside the MR suite. Verify that the simulator room is vacant. If the room is vacant, take your participant directly to simulator room.

Please change the linen on the simulator table after use and dispose of the dirty linen in the hamper provided. All skin contact surfaces should be cleaned using the Cavi wipes provided. Use gloves when using the Cavi wipes.

Flow process ~ MR simulator and scanner

If your participant is scheduled on the scanner directly after the simulator session ~ on arrival direct your participant to the interview room ~ The MR Technologist will review the screening form with the participant, after which the participant may be changed.

All participants are required to remove all jewelry, metallic and electronic items, all clothing except for underwear (i.e. panties & boxers). A hospital gown tied at the back and a pair of PJ bottoms tied in the front are provided for all participants to change into. Remind your participants to use the bathroom facilities after changing and after simulator session prior to going into the magnet room. Changing instructions are posted next to the mirror in the change room.

Once your participant is changed, please direct them to the simulator room for your simulator session prior to their scan. The MR Technologist will escort the participant into the magnet room and the researcher into the control area from the simulator room at the scheduled scan time.

Please change the linen on the simulator table after use and dispose of the dirty linen in the hamper provided, located next to the door.

All skin contact surfaces should be cleaned using the Cavi wipes provided. Use gloves when using the Cavi wipes.

Data transfer

Physiological Data ~ uploaded to XNAT prior to removal of participant from scanner.

Scanning Data ~ uploaded immediately post scan. Contact Barry Brisley (bbrisley@research.baycrest.org) Image Analyst Technician @ 416 785 2500 ext 3355. Please let Barry know which server you would like your data transferred to.

The above MR Lab flow process allows us to:

- a) Maintain an efficient operational flow within a constrained space.
- b) Maintain confidentiality of information in the MR Lab.
- c) Maintain privacy for the participants being scanned.

MR Technologist contact information

Monday – Friday (08:00 – 16:00 ~ Lunch 12:00 – 13:00 hrs)

Garry Detzler, MRT, MR AC (R)
Senior MR Research Technologist & MR Safety Officer, RRI ~ Baycrest
3560 Bathurst Street, BB 17, Toronto
Ontario, M6A 2E1, Canada
(416) 785 2500 ext 3321
(416) 785 4299 – Fax
gdetzler@research.baycrest.org

Sundays, Evenings & Vacation Relief (08:30 – 16:30 ~ Lunch 12:30 – 13:30 hrs)

Ruth Weiss, MRT, MR
MR Research Technologist, RRI ~ Baycrest
rweiss@research.baycrest.org

Sundays, Evenings & Vacation Relief (08:30 – 16:30 ~ Lunch 12:30 – 13:30 hrs)

Andrea Young, MRT, MR
MR Research Technologist, RRI ~ Baycrest
ayoung@research.baycrest.org

Mailing Address, Telephone # and Fax #

3560 Bathurst Street, BB 17, Toronto
Ontario, M6A 2E1, Canada
(416) 785 2500 ext 3320 ~ MR Control
(416) 785 4299 – Fax

MR Specialist contact information

Monday – Friday 09:00 – 17:00 hrs

Jacob Matthews, MSc.
MR Specialist, RRI ~ Baycrest
3560 Bathurst Street, BB17, Toronto
Ontario, M6A 2E1, Canada
(416) 785 2500 ext 3322
(416) 785 4299 – Fax
jmatthews@research.baycrest.org

Jacob completed his MSc in Medical Biophysics at the University of Western Ontario. In his current role, he maintains a variety of hardware and software environments for the Rotman MRI, as well as provides acquisition and analysis support to Rotman MRI Users. He is also involved in a handful of ongoing technical development projects with several Rotman scientists.

After Hours Simulator Reservations / Usage Process:

The 2020 redesign of the MR Suite allows for independent access to the Simulator outside of regular operating hours, where an MR Technologist / Level 11 MR Operator is not available in the Suite.

The Simulator is located in the Basement Room BB 17D. This area may be deemed as isolated after normal operating hours. There is no personnel backup in the MR suite in case of an emergency while performing test on a participant in the Simulator after hours.

Therefore when utilizing the Simulator after hours, by yourself or with a Participant, in the absence of a Level 11 MR Personnel the following process must be adhered to:

- Independent access via your Baycrest photo ID Badge to the MR Simulator. (Simulator Badge access request via the Senior MR Technologist – gdetzler@research.baycrest.org)
Working alone Guidelines apply ~ See below:

Working Alone Principles

- The principles for all research staff to follow when working alone after hours-during the week and on the weekends are noted below.
- The rationale for the principles outlined below are:
 - (a) Baycrest, as an organization, has to ensure that staff are safe at all times.
 - (b) If staff members are working alone after hours/weekends and a serious incident were to occur, the Ministry of Labour would come onsite to investigate and Baycrest would be required to show that they have a plan in place to address staff members' safety.

Working Alone Principles: Weekdays

- If you plan on working late call ext. 2130 by 6:00 p.m. and give your estimated departure time.
- If staying longer than the estimated departure time, call ext. 2130 to give the new estimated time of departure.
- When leaving – go to Khedive entrance and let the Communications staff member know that you are leaving.
- Rationale for going to Khedive entrance: so Communications staff member can know that that you are leaving the premises.
- **If, while working alone, you believe that you are in imminent danger, and if it is possible, you should dial Baycrest's emergency extension 5555 and speak to the Communications attendant.**

Working Alone Principles: Weekends

- Sign The Working Alone and After Hours Log-In book at Khedive entrance upon arrival. The log-book includes:
 - o Name
 - o Room number
 - o Extension & Cell number
 - o Log-in Time
 - o Estimated Departure Time
 - o Log-out Time
- You must show ID badge before signing in.
- If you will be staying longer than the estimated departure time call 2130 with the new estimated time of departure.
- When leaving – go to Khedive entrance to enter log-out time.
- **If, while working alone, you believe that you are in imminent danger, and if it is possible, you should dial Baycrest's emergency extension 5555 and speak to the Communications' attendant.**
- Initiate the Panic Alarm System Process

There is a panic alarm system for the MR Simulator which is utilized when testing after hours.
- The panic alarm button for the MRI suite is located to the left of the door in the envelope in the Simulator room BB17D.
- Have the panic alarm readily available. (This can be worn around the neck ~ Sanitize after use)
- Activation of the panic alarm button will send a direct signal (silent alarm) to Security.
- If you are ever in a test session where you feel uncomfortable or threatened please leave the room and end the session, do not continue testing in that type of situation.
- Finally with respect to testing after hours please make sure that you inform someone (supervisor, lab colleague) in advance of your scheduled session. You can also send an e-mail to rguna@research.baycrest.org and Roshan will notify Security with the date / time of your session.
- Your access will be to the MR Simulator.

Access to the MR suite afterhours in the absence of an MR Technologist or Level 11 Operator is not feasible as the remainder of the suite is locked and secured.

Therefore if, you or your participant requires the use of washroom facilities, you will need to utilize the facilities located in the outer hallway. There are located on either side of the Hospital elevators. Please familiarize yourself with their locations.
- It is your responsibility to ensure the Simulator is cleaned, lights are off and the Simulator room is secured at the end of your session.
- If conducting tests on a participant, please ensure your escort your participant to the appropriate Baycrest exit.
- A breach in any of the above guidelines may result in a reversal of after-hours access to the MR Simulator.