



Australian Society of Medical Imaging and Radiation Therapy

The national professional organisation representing medical radiation practitioners

ABN 26 924 779 836



MIAP1

2017

MEDICAL IMAGING ADVISORY PANEL 1

Policies & Procedures Manual

Magnetic Resonance



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Magnetic Resonance Imaging Introduction

Magnetic Resonance Imaging (MRI) is an imaging modality within Medical Radiation Science. MRI employs the use of high strength homogenous magnetic fields and pulsed radio frequencies. When the human body is placed within this magnetic field, processing hydrogen protons align in the field direction. Radio frequency waves are introduced to alter this alignment and as the hydrogen protons realign with the main magnetic field, a signal is produced. This signal is received by radiofrequency coils and converted via a computer into high resolution diagnostic images.

The ability to create anatomical, pathological and functional images with this non-ionising radiation modality has led to rapid expansion and development of this modality. The increasing availability and constant evolution of MRI has intensified the community and professional demand for high levels of technology and professional standards.

The MRI practitioner is required to make decisions regarding the nature and extent of individual procedures and, when requested, to provide medical practitioners with informed opinions regarding the results of these procedures. The MRI practitioner is responsible for the welfare of patients whilst they are in their care and must be familiar with all emergency procedures associated with MRI.

A variety of imaging systems are available worldwide and within Australia. The Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) expect that all MRI systems be equipped with fast imaging techniques and that equipment is appropriately upgraded, maintained and monitored.

The ASMIRT supports that all MRI performed on humans whether in clinical or research centres be undertaken by MRI practitioners that have undertaken ASMIRT certification.

Certification of the MRI Practitioner

In early 1997, an initial steering committee of radiographers practicing MRI, under the auspices of the ASMIRT began formulating accreditation levels for those radiographers working in this imaging modality. In January 1998, this clinical specialist committee became a formal advisory panel of the ASMIRT, under the Memorandum and Articles of Association of this body, and in September of that year the first Level 1 Accreditation examinations were conducted throughout Australia. The first Level 2 Accreditations were awarded in March 1999.

The Medical Imaging Advisory Panel 1 (MIAP1) now sets and maintains the standards for certification of MRI and CT practitioners.

Legislation

There is currently no legislative requirement to be registered as an MRI practitioner in Australia, however it is recommended that MRI practitioners possess a specific level of training or experience prior to operating MRI equipment. MIAP1 recommends that any radiographer undertaking MRI holds Level 1 Certification.

MIAP1

The Medical Imaging Advisory Panel 1 (MIAP1) is made up of 10 volunteers who donate their time, knowledge and experience to the ASMIRT and the progression and development of medical imaging.



Certification Policies

Certification Eligibility

Level 1 Application

Level 1 Certification comprises a theoretical (part A) and a clinical component (part B). Certification is valid for a 3 year period.

MRI Level 1 Certification is awarded to persons who have successfully completed part A and part B. Both part A and part B must be completed by the candidate within a 3-year period.

Part A – Theoretical Component. Is a written examination set by MIAP1, which involves a paper not exceeding 200 multiple-choice questions covering topics such as: Safety, Patient Screening, Equipment, Pulse sequences, Basic theory of MRI, MRI Anatomy and Pathology.

For further information regarding the MRI Level 1 Certification Examination, please see Page 10 of this document.

Part B – Clinical Component. Requires the candidate’s supervisor to acknowledge completion of 300 clinical MRI examinations. These 300 examinations must have taken place within a 12-month period. This period must have occurred within the 3 years prior to application submission.

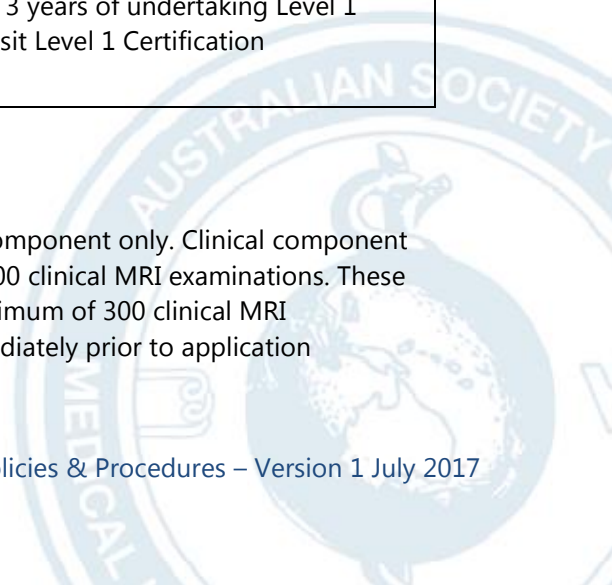
Table 1.

MRI Level 1 Certification Requirements.

	Eligibility Requirements	Time to Acquire	Certification Duration	Extension
Level 1 Application	Part A - Undertake Level 1 Certification Examination. Part B - Complete 300 clinical MRI examinations.	Part A and Part B must be completed within a 3-year period. Application submission must occur within 3-years of sitting Part A examination.	3-year expiry for Level 1 Certification.	N/A
Level 1 Application Lapsed	If application submission does not occur within 3 years of undertaking Level 1 Certification Examination, applications must re-sit Level 1 Certification Examination.			

Level 1 Renewal

Renewal of Level 1 Certification requires completion of the clinical component only. Clinical component requires the candidate’s supervisor to acknowledge completion of 900 clinical MRI examinations. These 900 examinations must have taken place within a 3-year period (minimum of 300 clinical MRI examinations per year). This 3-year period must have occurred immediately prior to application submission.



Renewal submissions must be received by the Secretariat no later than 6 months after expiry of previous MRI Level 1 Certification. If this timeline is not adhered to, Certification will be deemed as expired and participants will be required to reapply and complete both part A and part B.

Table 2.
MRI Level 1 Certification Renewal Requirements.

	Eligibility Requirements	Time to Acquire	Certification Duration	Extension
Level 1 Renewal	Complete 900 clinical MRI examinations.	900 clinical MRI examinations must be completed within a 3-year period. A minimum of 300 clinical MRI examinations must be completed every 12-months within this 3-year period. This 3-year period must have occurred immediately prior to application submission.	As for Level 1 Application. 6-month grace period for lapsed Level 1 Certification.	Apply before Level 1 Certification expiry.
Level 1 Renewal Lapsed	Re-sit Level 1 Certification Examination. Complete 300 clinical MRI examinations.	Must be completed within a 3-year period.	As for Level 1 Application.	N/A

Level 2 Application

Level 2 Certification comprises a points component (part A) and a clinical component (part B). To be eligible to apply for Level 2 Certification, applicants must hold current Level 1 MRI Certification. Certification is valid for a 3 year period.

MRI Level 2 Certification is awarded to persons who have successfully completed part A and part B and have had 3 years full-time equivalent MRI experience.

Part A – Points Component. Evidence of accrual of 100 MR-related Level 2 points (please refer to MRI Level 2 Part A Points Table). The points must be accrued over the 5-year period immediately prior to application date. The points must be submitted on the MRI Level 2 Application/Renewal Points Accrual Log on page 3 of the Application Form or can be found at <http://www.asmirt.org/mri.php>.

Part B – Clinical Component. Requires the candidate’s supervisor to acknowledge completion of 1000 clinical MRI examinations. These 1000 examinations must have taken place within a 3-year period. This period must have occurred immediately prior to application submission.

Table 3.
MRI Level 2 Certification Requirements.

	Eligibility Requirements	Time to Acquire	Certification Duration	Extension
Level 2 Application	Part A – Accrue 100 MR-Related Level 2 Points. Part B – Complete 1000 clinical MRI examinations.	Part A and B must be completed over the 5-year period immediately prior to application submission.	3-year expiry for Level 2 Certification.	N/A

Level 2 Renewal

Renewal of Level 2 Certification requires completion of a points component (part C) and a clinical component (part D).

Part C – Points Component. Evidence of accrual of 45 MR-related Level 2 points (please refer to Renewal MRI Level 2 Part C Points Table). The points must be accrued over the 3-year period immediately prior to application date. The points must be submitted on the MRI Level 2 Application/Renewal Points Accrual Log at <http://www.asmirt.org/mri.php>.

Part D – Clinical Component. Requires the candidate’s supervisor to acknowledge completion of 1000 clinical MRI examinations. These 1000 examinations must have taken place within a 3-year period. This period must have occurred immediately prior to the application.

Renewal submissions must be received by the Secretariat no later than 6 months after expiry of previous MRI Level 2 Certification. If this timeline is not adhered to, Level 2 MRI Certification will be deemed as expired. Participants have the opportunity to submit a renewal for Level 1 MRI Certification Renewal within 6 months of MRI Level 2 expiry.

Table 3.
MRI Level 2 Certification Requirements.

	Eligibility Requirements	Time to Acquire	Certification Duration	Extension
Level 2 Renewal	Part C – Accrue 45 MR-Related Level 2 Points. Part D – Complete 1000 clinical MRI examinations.	Part C and B must be completed over the 3-year period immediately prior to application submission.	As for Level 2 Application. 6-month grace period for lapsed Level 2 Certification.	Apply before Level 2 Certification expiry.
Level 2 Renewal Lapsed	Revert back to MRI Level 1 Certification for 6 months. Applicants must reapply for MRI Level 1 Certification Renewal within this 6-month period. If renewal is not received, applicants will be required to re-sit the MRI Level 1 Certification Examination.			

Application Procedures

MRI Level 2 Certification/Renewal Applications should be submitted electronically to mri@asmirt.org .

The documentation must contain scanned copies/electronic versions of:

1. Application Form
2. Completed MRI Level 2 Application/Renewal Points Accrual Log
3. Accurately numbered Folders with labelled and referenced Files/ Documents within each folder

- 1. Clinical Experience**
- 2. MRI Education Courses**
- 3. MRI Presentations**
- 4. Attendance MRI Conference**
- 5. Publications**
- 6. Other related Post-Graduate Courses**
- 7. Other Related MRI Activities**

For example: Create Folder numbered as above.

2. MRI Education Courses

- 2.1 Tertiary post grad MRI course- University Masters in MRI (Insert degree name), Units passed
- 2.2- Minor Course - provide examples

3. MRI Presentations

- 3.1 Major International Conference – RSNA 2017
- 3.2 Minor Conference - RADIAM 2017

Any submitted Documentation that is not clearly labelled and identified will not be considered.

All original documentation must be retained by the applicant for the duration of the entire certification program and any renewal periods.

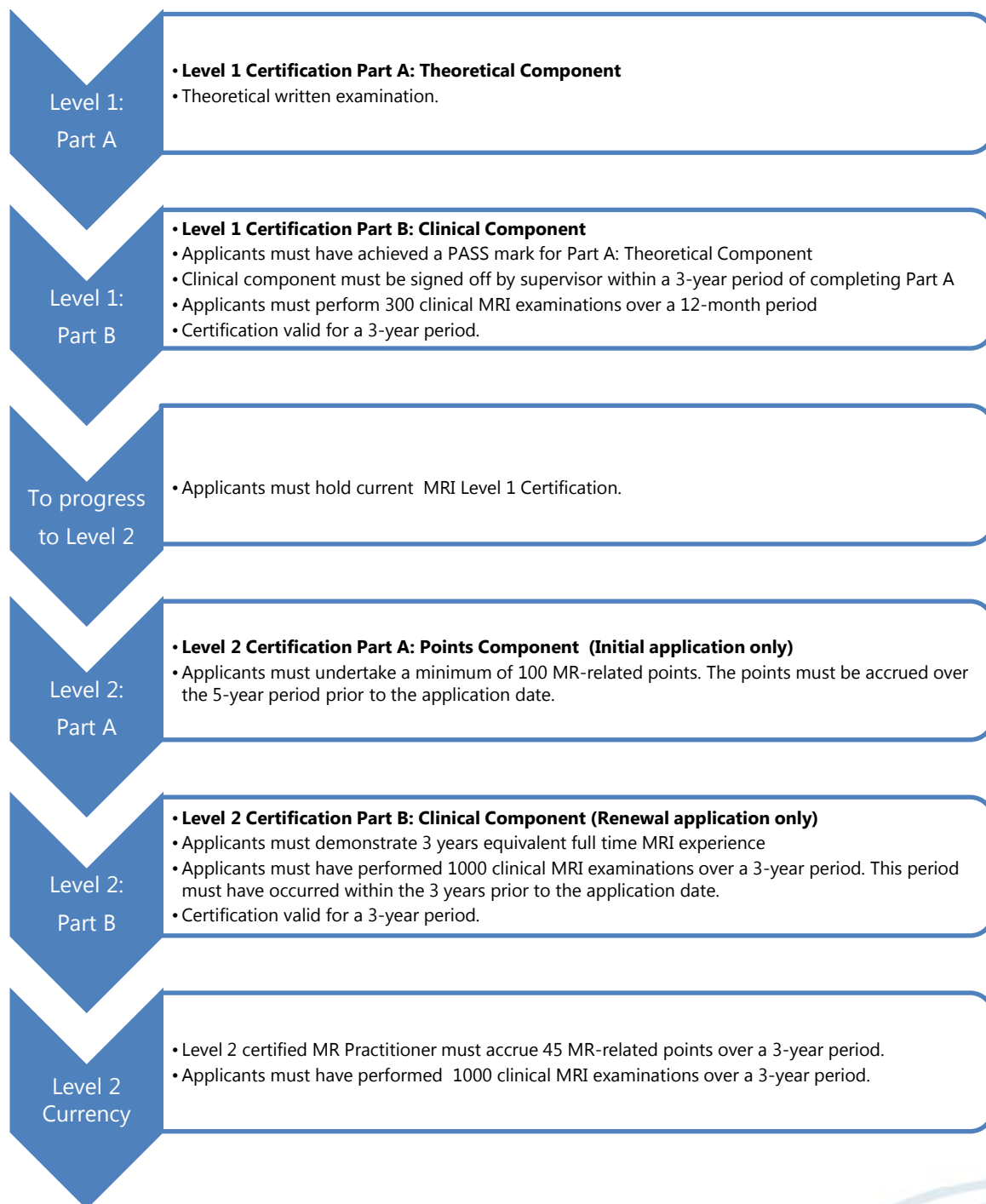
Points claimed by the applicant will be allocated at the discretion of MIAP1. Evidence of all points claimed must be documented on submission.

Only current Application Forms and Points Accrual Log will be accepted. Forms are available at <http://www.asmirt.org/mri.php>.

Applicants who submit hard copies will be asked to resubmit electronically.



Figure 1.
 Process of Application for MRI Level 1 and 2 Certification.



Signatory on Part B of Level 1 and Level 2 Certification Applications

The Supervisor MRI Radiographer is defined as a practitioner who holds MRPBA registration, appropriate radiation licenses and has a minimum of 5 years' experience in medical imaging with at least 2 years of full time equivalent supervisory MRI experience.

These practitioners represent the minimum standard of practitioner which is able to be signatory on Part B of Level 1 and Level 2 Certification applications.



Supervisors are preferably practitioners who hold MRI certification at Level 1 or Level 2.

Certification Length

Level 1 and Level 2 Certification certificates have a 3-year expiry from date of issue by MIAP1. Renewed Level 1 and Level 2 Certification certificates will coincide with the original date of issue and will also have a 3-year expiry.

Practitioners who pass the theoretical written examination (part A) have a 3-year period to apply for their MR1 Level 1 Certification.

Certification Renewals

Notification of a forthcoming Certification expiry will be emailed 4 months prior to the expiry date. This email will contain a link to the MIAP1 policies and procedures/renewal guidelines and application form. Renewals will only be sent to practitioners who are current financial members of ASMIRT (this includes Ordinary Members and Non-Member CPD participants) and is dependent on registered email address being maintained by the member.

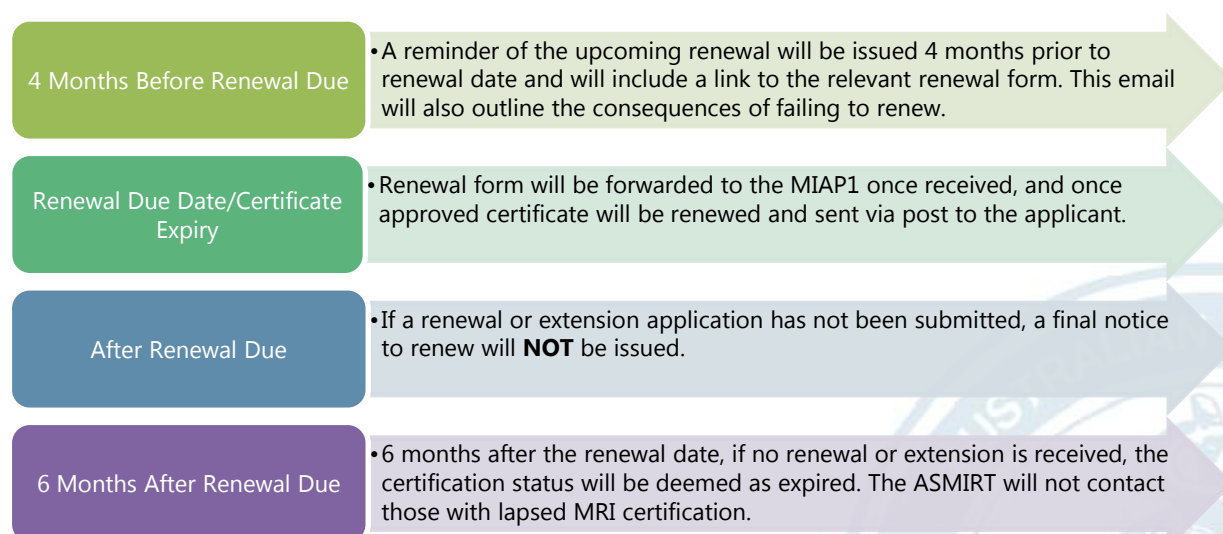
If the practitioner fails to return the renewal application form for Level 1 or 2 Certification, a final notice will **NOT** be issued. Practitioners must ensure that their details are current and up to date in their member profile. Those who are not members or enrolled in the ASMIRT's CPD program and have a lapsed MRI certification will **NOT** be contacted by ASMIRT with a renewal notice.

If practitioners neglect to renew their Certification for Level 1 or 2 within 6 months of the expiry date, their certification will be deemed lapsed by MIAP1.

Practitioners with lapsed Level 1 or Level 2 Certification are expected to follow the procedures outlined under Certification Eligibility. Lapsed certification cannot be re-instated without the candidate correctly following all of the outlined criteria for a Level 1 Certification application (see Page 4 of this document).

Figure 2.

Outline of the Renewal Process for MRI Level 1 and 2 Certification.



Extensions

Practitioners who are unable to fulfil the requirements of renewing their Level 1 or Level 2 Certification before the renewal due date are able to apply for an MRI Certification Extension. Supporting documentation **must** be attached to the application for review by MIAP1 (Doctor's certificates, letter from employer, Statutory Declaration etc).

Extension applications will be assessed on a case-by-case basis by MIAP1. The extension period granted is at the discretion of MIAP1.

Certification Entitlements

Practitioners who progress to a Level 2 Certification will have their Level 1 Certification run concurrently for the duration of their Level 2 Certification. Level 1 renewal form is not required. Please note that practitioners will not receive a Level 1 certificate while Level 2 is current, despite being renewed.

Practitioners, who fail to meet the requirements of their Level 2 Certification renewal, or decide not to continue renewing their Level 2 Certification, must apply for renewal of their Level 1 Certification. This renewal will not be treated or assessed any differently to standard Level 1 renewals.



MRI Level 1 Certification

Part A: Theoretical Component - Written Examination

MRI Level 1 Certification Examination

The theoretical written examination involves a paper not exceeding 200 multiple-choice questions covering topics such as: Safety, Patient Screening, Equipment, Pulse sequences, Basic theory of NMR, MRI Anatomy and Pathology.

The approximate percentage of questions (rounded down) related to each module is listed below:

- Part A: Hardware and Instrumentation – 12%
- Part B: Imaging Procedures and Relative Anatomy/Pathology – 30%
- Part C: Patient Care and Safety/Contrast Media – 15%
- Part D: Pulse Sequences/Artefacts & Physics - Physical Principles – 43%

To be successful in the theoretical written examination, an overall pass requires 75% or more correct answers overall, with no less than 65% in any one section. Failure to score 65% in every section will result in an overall fail.

After the conclusion of the examination, the results are tabled and reviewed by the MIAP1. Once this has undergone rigorous scrutiny, the MIAP1 sign off on the results, which are then sent back to the ASMIRT.

MRI Level 1 Certification Examination results are posted online 6 weeks post examination at <http://www.asmirt.org/mri.php/>, listing candidates who have passed. Results are listed using the unique Candidate ID number, which is issued to all registered candidates.

Letter correspondence outlining pass or fail result is sent to all candidates who have sat the examination. Candidates who fail receive a breakdown of their results for each section presented in the following form (see Table 1).

Table 1.

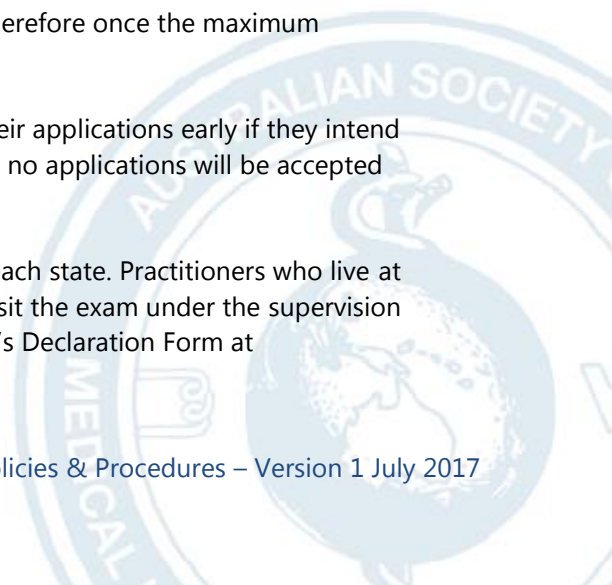
Example of results breakdown provided to candidates who fail the theoretical written examination.

Part A	Part B	Part C	Part D
Pass	Fail	Fail	Pass

Given their popularity, MRI examinations are on a first come, first serve basis. Selected examination venues hold a maximum capacity which varies from state to state. Therefore once the maximum capacity has been reached applicants will go onto a waitlist.

We recommend that to avoid disappointment, individuals send in their applications early if they intend on sitting the examinations on the advertised dates. Please note that no applications will be accepted once the application closing date has passed.

The theoretical written examination is currently held twice a year in each state. Practitioners who live at a distance greater than 150km from the hosting city may request to sit the exam under the supervision of an independent person acceptable to the ASMIRT (see Supervisor's Declaration Form at <http://www.asmirt.org/mri.php/>).



Examination Supervisor

Examination Supervisors must hold employment from an approved occupational group (e.g. the occupational groups approved to endorse Australian passport photographs). Supervisors should not have any direct professional or personal relationship with the candidate. *Where possible they should not be their direct supervisor.* They must not be related to the candidate by birth, marriage, de facto or same sex relationship, or live at the candidates' address. The examination supervisor must be approved by ASMIRT. Examination supervisors must sign the supervisor's declaration form acknowledging commitment to upholding the integrity of the examination process.

Candidates who live at a distance greater than 150km from the hosting city may request to sit the examination at their own location. Candidates will be required to submit an application form to the ASMIRT Secretariat and a supervisor will be nominated for them. If an ASMIRT nominated supervisor is not available, the candidate will be contacted for suggested names of supervisors. ASMIRT will review the suggested names and select an appropriate independent person acceptable to ASMIRT for supervision purposes.

By signing the supervisor's declaration, examiners are agreeing to ensure that the examinations are conducted fairly, ethically and professionally. It is an expectation that as a supervisor, these principles are upheld and the integrity of the certification examinations are maintained.

Examination Venues

Examination venues must be an officially sanctioned venue eg. a workplace under the direct supervision of an examination supervisor. Supervisors are required to closely supervise candidates and be present in the examination room whilst the examination is in progress.

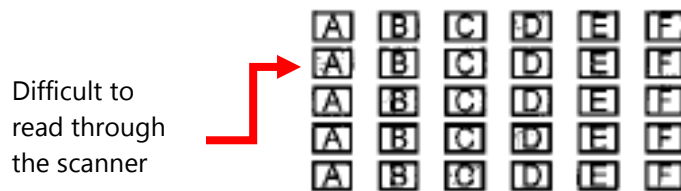
Examination Procedures

1. Examinations are scheduled for a 3-hour period from 9.00am – 12.00pm. Candidates are asked to arrive at their examination venue at least 15 minutes prior to the examination start time to ensure that they are present prior to the commencement of the examination. Candidates are reminded to be cognisant of their fellow candidates sitting this examination.
2. Late arrivals – if candidates arrive within the first 30 minutes of the examination commencement, they will be permitted to continue the examination in the remaining time.
3. Arrivals post-30 minutes of the advertised examination start time will result in an ineligibility to sit the examination.
4. Candidates are required to bring a form of photo ID and their allocated unique candidate ID number to the examination.
5. No reading material is permitted in the examination room.
6. All notes, booklets and answer sheets are not to be brought into the examination room.
7. Candidates are to exit the examination room as quietly as possible so as not to disturb fellow candidates.
8. Bring a soft lead pencil with spares, eraser and pencil sharpener to the examination.
9. Multiple-choice questions – responses are to be marked on the **Response Bubble Sheet** provided by the exam supervisor. Responses to be recorded as per the following examples:

1. A B C D E F
2. A B C D E F

It is of vital importance that the boxes are clearly marked across the entire box.

Examples from exams:



10. The above effect can be achieved by using a dark, soft pencil (2B or HB). If candidates are using an eraser to correct an answer, they must ensure that the correct answer is clear and defined.
11. Pens or other permanent markers are not to be used on Response Bubble Sheet – candidates must be able to modify their responses, if they need to, prior to the end of the examination.
12. Candidates may be escorted out of the examination if the behaviour displayed is not conducive to the professional conduct of the examination.
13. At the conclusion of the examination, candidates must ensure that their name and unique candidate ID numbers are clearly written on the Response Bubble Sheet and examination paper. Candidates are to remain quietly seated until their examination paper has been collected and the supervisor concludes the examination. Candidates are not to remove the examination material from the examination room.

Special Consideration

On the day of the examination

If a candidate experiences extenuating circumstances preventing their attendance at the examination venue, including illness, they should contact ASMIRT or their state MIAP1 representative in writing within 2 working days of the examination. Candidates may be considered for a refund.

Supporting documentation

Candidates will need to provide one or more of the following documents to support their application for refund consideration:

- Medical certificate or letter from a medical professional,
- Death notice or certificate and evidence of relationship,
- Police report,
- Statutory declarations from employer or relevant people,
- Notification from:
 - Defence services,
 - Juries Commissioner's Office,
 - Emergency service organisations such as the Country Fire Authority.

Medical/professional certificates must state that candidates were unfit to sit the examination or complete work for assessment **on** or **before** the relevant date, and cannot be signed by a member of the candidate's family.

Certification Procedures

Assessments

Level 1 Certification applications and renewal applications are received by the Secretariat and forwarded to the MIAP1 Chair for assessment. This process can take up to 8 weeks from the date that the Secretariat receives a practitioner's application. A Level 1 application will be dated from the date that the application was approved by the MIAP1 Chair. Level 1 renewal applications will be dated from the original date that the application was approved by the MIAP1 Chair.

Level 2 Certification applications and renewal applications are received by the Secretariat and given to 2 voluntary members of MIAP1 for 2 individual assessments. This process can take up to 8 weeks from the date the Secretariat receives the practitioner's application. A Level 2 application will be dated from the date that the application was approved by the second MIAP1 volunteer. Level 2 renewal applications will be dated from the original date that the application was approved by the second MIAP1 volunteer.

Level 2 applications and renewal applications will not be processed unless the ASMIRT MRI Level 2 Application/Renewal Points Accrual Log cover sheet has been filled in correctly and submitted electronically with the supporting documents.

Incorrect Applications

Practitioners who provide incorrect information on any application form will be emailed and / or have their application returned to them with notification querying the information provided and a list of information that needs to be reviewed by the practitioner and the Supervisor.

Extension Applications

Applications for extensions to Level 1 and 2 are received by the Secretariat and forwarded to the MIAP1 Chair for review and assessment. This process can take up to 6 weeks and practitioners will be notified by email of the outcome, and extension time granted if applicable.

Current Application Forms

Practitioners must ensure that current application forms are submitted to ASMIRT, or applications will not be accepted.



FAQs

Do I have to sit the MRI Certification Examination to work as an MRI radiographer in Australia?

No, however passing the examination and being part of the ASMIRT Level 1 MRI Certification Program is an indication of your knowledge and commitment to your speciality within the Medical Imaging profession. There are some departments and practices which require Level 1 Certification prior to employment. This Certification is not a qualification like a Master's degree which has no clinical requirement, but rather a program that ensures a level of knowledge that is measurable and common across Australia.

How much study do I have to do to pass the examination?

The examination is designed to test your clinical and academic ability. It is an indication of a knowledge base when measured against your colleagues. A study approach similar to any advanced program is suggested.

What percentages of candidates pass the examination?

This varies slightly, but on average more than 60% of candidates pass each examination. ASMIRT does not keep records on candidates who re-sit examinations.

Do I have to join the 3-year Certification Program?

No, this is not a requirement as you may decide that passing the examination is adequate to demonstrate your abilities. There is however a limited time after passing the examination to join the program. If you choose not to join the Certification Program within the 3-year time period and change your mind down the track, you may be required to re-sit the Level 1 examination again.

Why do I have to renew my Certification?

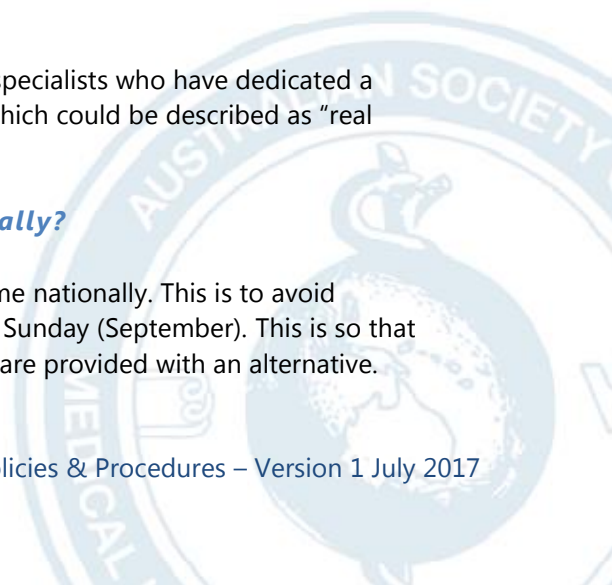
The program is designed to ensure that you complete a certain number of clinical MRI examinations within a time period to maintain your skill and knowledge base. We encourage practitioners to maintain their Certification to demonstrate their specialist professional practice standard. If you choose not to renew your Certification after the 3-year time period, you will need to commence the process again from the Level 1 examination and clinical MRI examinations.

Why are the points needed to gain Level 2 MRI Certification different from normal CPD credits?

The Level 2 Certification program is only awarded to those imaging specialists who have dedicated a considerable amount of time and effort and hold a certificate level which could be described as "real experts" in their chosen field.

Why are the examinations held at the same time nationally?

The MRI Certification Examination is held twice yearly at the same time nationally. This is to avoid collusion. Examinations now are scheduled for Saturday (March) and Sunday (September). This is so that candidates who are unable to sit on a Saturday for personal reasons are provided with an alternative.



Can I sit the examination a day earlier, as I have other engagements on the scheduled examination date?

No, this is not possible. We suggest that you undertake the examination at the next scheduled examination date.

I live 2 hours away from the scheduled examination centres. Is it possible to sit this examination closer to home?

MIAP1 recognise that individual practitioners have circumstances which prevent them from travelling to their closest examination venue. In these circumstances, if you live in an area remote to the listed examination venues (greater than 150km), you may be able to sit the examination in your local region. It is incumbent upon the practitioner to find an appropriate examination supervisor.

On application, the MIAP1 will assess the suitability of the venue and also the examination supervisor before confirming acceptance of the application.

I have already performed over the 300 clinical MRI examinations over a 6-month period. Is my supervisor able to sign my application form for the 6-month period, or do I have to wait for the 12 months to lapse before I submit my application?

300 clinical MRI examinations will satisfy the clinical component criteria. You can submit your application signed off by your supervisor as soon as you have achieved a successful result in your theoretical component.

I am the Chief CT Radiographer running an MRI practice and would like to undertake the MRI Certification. As I am the "Signatory", whom can I get to sign Part C as 'supervisor' for the clinical component? My CEO is a Radiographer but has no MRI experience and there is only one other MRI Radiographer, whom I supervise. Can I have our Radiologist sign part C?

It can be signed off by a supervising Radiologist, Chief Radiographer or an appropriate Manager. Evidence, such as RIS data should be available to substantiate the claim.

What do I do if I think that the examination result is wrong?

All examinations and subsequent results are reviewed and checked thoroughly prior to release on the website. If you have queries regarding your examination, please contact the ASMIRT secretariat office.

Can I sit the examination abroad?

Yes, examinations can be undertaken overseas. In order to sit this examination, you must organise your own examination venue and supervisor, and pay for any additional costs for mailing materials to the examination supervisor, and return mail to Australia.

