

Australian Thermology Association Inc. Code of Practice

Preface

This document, being the Australian Thermology Association's Code of Practice, defines and sets out the Australian Thermology Association's accepted parameters of endorsed Thermology practices. This Code of Practice sets out what practices are endorsed and accepted by the ATA, and sets the boundaries with regard to claims of and to Thermological practice. This document is one or four governing mechanisms of the ATA known collectively as the ATA Practice Guidelines, with the others being; the Code of Ethics, The ATA Constitution, and the ATA's Policy Statements. Members and affiliates are urged to keep abreast of the ATA Policy Statements, as of the four governing mechanisms, THE policy Statements are the most likely to change on a more than infrequent basis as new research and issues are brought to light.

Definitions

ATA – Australian Thermology Association Inc.

Member – The term “member”, when used singly or in plural, will indicate any practitioner, business or practice which is associated or affiliated with the ATA. Members are bound by the ATA's Constitution, Code of Ethics, Code of Practice, and the ATA Policy Statements, with responsibility and accountability accepted by each member individually.

Client – The term “client”, when used singly or in plural, shall mean the person receiving Thermographic/Thermological services from a member, and extend to include any and all matters arising from thermal imaging activities by ATA members. Because the ATA concerns itself with the practice of both Medical and Veterinary Thermology, those persons who would normally be thought of as patients will for the sake of this document be known as clients. Any member's responsibilities to their clients extend to the client's animals in all applicable ways.

Thermology– the term “Thermology” and its derivatives shall singly or jointly mean the practice, science, art , industry at large, and performance of thermal imaging, thermal image interpreting and the study and research of medical and veterinary thermal imaging and thermal imaging practices.

Practice Guidelines – The principles, rules, laws and policies set out in the ATA's Constitution, Code of Ethics, Code of Practice and ATA Policy Statements.

Grievance and Disciplinary Committee – The mechanism of the ATA for arbitrating and/or administering grievances or disciplinary matters. The Grievance and Disciplinary Committee is the highest authority of the ATA in all matters concerning it.

PREAMBLE

The ATA Practice Guidelines bind all members to the same standards and measure, and is drafted with the intent of protecting and advancing the cause of both the practitioner and their client. The practitioner of Thermology must recognise their responsibility not only to their client, but also to society at large, to other health professionals, and to self. The Australian Thermology Association Inc. is dedicated to the advancement of the practice of Medical and Veterinary Thermal Imaging and Thermology in Australasia. Its perpetual goals include; raising the awareness and utilisation of Thermology and Thermographic imaging in the medical and veterinary fields, promoting thermological research and case study, encouraging the highest standards of professionalism from ATA members, and providing members with the necessary services and training to remain the pre-eminent Medical and Veterinary Thermological association in Australia. All members of the ATA have the right to expect that the ethics, professional practices and standards expected of and applied to themselves and their qualifications be applied equally and without prejudice or favour to all other members. ATA members have the right to expect that anyone found guilty of breaking the ATA's Practice Guidelines be censured immediately and fairly, so that by association, their good names not be brought into question. The principles detailed below represent the standards of professional and conduct and practice defining the essentials of honourable behaviour and the parameters and boundaries of professional conduct and practice required of all ATA members and associates of both themselves and their peers.

CODE OF PRACTICE

Member's commitment to upholding and supporting this code of practice

1. All ATA members agree to be bound by the letter and spirit of the ATA's Practice Guidelines, and do all that they can to promote and edify the practice of Thermology and the ATA.

General tenet

2. Members shall strive to maintain integrity and honesty in all professional, commercial and private dealings. Members shall adhere to, and be contained by, the ATA Practice Guidelines. Members shall honour any contract or agreement entered into, and execute their responsibilities in all matters to the very best of their ability.

THE MEMBER

3. The member shall present and maintain themselves in a professional fashion, adopting a suitable and appropriate presentation of dress, grooming and manner consistent with the accepted standards applied to medical and veterinary imaging (as applicable).
4. The member shall at all times and in all things, when operating as an ATA member and Thermologist, conduct themselves in accordance with the ATA Practice Guidelines.

THE CLINICAL SETTING IN MEDICAL APPLICATIONS

As far as is practicable, the clinical setting for any professional or consultative client interaction shall be in an environment which ensures:

5. The client's modesty and privacy is preserved. Whilst in a suitable, clean gown, or in a state of partial or full undress, a client should be shielded from view of any other persons other than those involved directly in the Thermographic process.
6. Acoustic insulation and/or isolation to ensure that; a) confidential discussion taking place within the context of a consultation is not easily overheard by those in other areas of the clinic and/or nearby b) excessive noise pollution is not permitted to cause a client distress or discomfort.
7. Direct Infra-red radiation pollution is controlled by exclusion or shielding of devices which emit Infra-red energy (at levels likely to bring into question the accuracy or validity of the images taken) within the imaging area, or in direct or reflected line of sight of the imaging area. An example of this rule's application would be the use of cold fluorescent lighting instead of incandescent or halogen lighting (which produces unacceptable levels of IR pollution).
8. Indirect Infra-red radiation pollution is controlled by shielding of all openings, pathways or mechanisms by which Infra-red energy (at levels likely to bring into question the accuracy or validity of the images taken) might enter the imaging area. The structural boundaries of the imaging space should be scanned and any thermal energy sources be removed, insulated or its Infra-red radiation be suitably prevented from becoming a confounding factor in any thermal images taken. An example of this rule's application would be exclusion, insulation or repositioning of a hot water pipe in a wall framing the imaging area, or preventing daylight reflecting through a window etc.
9. The imaging environment is controlled in a suitable manner to allow temperature selection and maintenance of a stable ($\pm 1.0^{\circ}\text{C}$ variation throughout the imaging session) ambient temperature between 19 and 24 degrees centigrade. An air-stream moving across the client during imaging with an air speed of greater than 0.75 meters per second is to be avoided. An example of this rule's application would be an air conditioner vent being baffled in such a way that any strong (>0.75 meters/p/sec) air stream is directed away from the client.
10. The floor is suitably covered and insulated (carpet being the preferred material) to prevent sympathetic reactions or responses from the patient's skin contacting a cold floor surface, which has the potential of becoming a thermographic confounding factor.

THE CLINICAL SETTING IN VETERINARY APPLICATIONS

As far as is practicable, the clinical setting for any professional or consultative Veterinary interaction shall be in an environment which ensures:

11. Extraneous handling (e.g. unnecessary physical contact) of the animal, or distressing noises (and other external interferences) around the animal during imaging should be avoided with the number of people present kept to a minimum during the consultation to avoid confounding factors in the resulting thermal images.

12. Direct Infra-red radiation pollution is controlled by exclusion or shielding of devices which radiate Infra-red energy (at levels likely to bring into question to accuracy or validity of the images taken) within the imaging area, or in direct or reflected line of sight of the imaging area. An example of this rule's application would be the avoidance of direct incandescent, arc or halogen lighting, with no lighting or fluorescent lighting being preferable.
13. Indirect Infra-red radiation pollution is controlled by shielding of all openings, pathways or mechanisms by which Infra-red energy (at levels likely to bring into question to accuracy or validity of the images taken) might enter the imaging area. The structural boundaries of the imaging space should be scanned and any thermal energy sources be removed, insulated or its Infra-red radiation be suitably prevented from becoming a confounding factor in any thermal images taken. An example of this rule's application would be in positioning the animal in such a place as to avoid direct or reflected sunlight entering the imaging field of view. If this is not possible for reasons of practicality, the IR pollution levels and position should be noted in the clinical notes.
14. The choice of area used for imaging allows for the greatest degree of control over the ambient temperature. Whilst a temperature range of between 19 and 24 degrees centigrade is ideal, practicality suggests that clinical discretion be used to find the most suitable imaging area possible. An air-stream moving across the animal during imaging with an air speed of greater than 0.75 meters per second is to be avoided where possible, and if not, should be noted in the clinical notes.
15. Enough space should be available for distancing the camera from the animal to achieve adequate thermographic field of view.

THE CLIENT PRIOR TO CONSULTATION

16. The client shall be made aware of implications regarding the use of recreational substances or agents prior to imaging. Smoking, drinking alcohol, use of certain drugs and substances may individually or jointly interfere with the accuracy of subsequent thermographic images. If any such substances have been used, a record of substance, dose and time since last consumption should become part of the clinical notes.
17. The client shall be asked prior to imaging if they (or their charge) take any medications, prescribed or non-prescribed. A member may not instruct a patient to reduce, modify or avoid a prescribed medication; however, with the client's express permission, they may contact the prescribing healthcare professional and confer with them regarding the modification of a pre-imaging dosage to improve accuracy of images. Any medications taken by the client shall be recorded in the clinical notes.
18. The client must be advised to avoid massaging or irritating the area to be imaged, as this may cause a localised inflammatory response, and become an thermographic artefact.

19. The client must be made aware of the need to limit sun exposure prior to a thermographic imaging session. Sunburn or recent sunbathing is considered a confounding factor. Should a client have recent sun exposure in an area of interest, or its contra-lateral comparative region, the session should be postponed until the localised inflammation is no longer a factor.
20. The client must be made aware of the need to avoid the use of body crèmes, heavy makeup or other skin applied substances that are likely (by nature or placement) to interfere with the accuracy of the thermographic images.
21. The member shall do his or her utmost to ensure that the client has reasonable and realistic expectations of benefit from any service provided. The client shall not have inferred, suggested or implied to them that a member's service can provide more benefit or data than as described in the ATA Practice Guidelines.

THE CLIENT DURING CONSULTATION

22. The client shall be asked to answer sufficient questions to establish necessary case history data.
23. As a matter of practice, it is suggested that the client be given the choice to sign a consent form at some time during the initial consultation. The client will not be pressured, coerced or manipulated into signing a consent form (which will comply with ATA recommended format) consenting the use of his or her images and history as described in the ATA Practice Guidelines, and may only do so after having the full ramifications of the consent being explained in sufficient detail to allow an informed decision on the part of the client.
24. Provision shall be made for the client to don a light weight, non-restrictive gown to allow preservation of modesty during the primary equilibration phase of the consultation, and be allowed to replace the robe when the imaging session is completed, prior to getting redressed.
25. The client must not allow others nor him or herself (or ward, charge or animal) to rub, massage or irritate an area being imaged, or its contra-lateral region. Should this occur, and a thermographic artefact result, the effected area should be imaged with markers to indicate the artefact, and a record made in the clinic notes regarding the artefact.
26. The client should be acclimatised to the ambient temperature, and their body's surface not be wet or covered (other than with a light, loose fitting gown). The client should be given sufficient time to achieve a steady thermal state, normally 10 – 15 minutes. If the client is beginning to feel distressed or shiver in the ambient temperature, the ambient temperature can be increased slightly where possible to meet the client's comfort level whilst not compromising protocols. If the converse is true and the client is perspiring, the ambient temperature can be reduced, or the client given more time to cool sufficiently to avoid perspiring.
27. The client shall remove all items of jewellery from the region being imaged at the same time as he or she disrobes for the consultation. Should a particular piece of jewellery not be removed for personal, religious or practical reasons, the item should be indicated in an image, and a note of the artefact made in the clinical notes.

THE MEMBER DURING CONSULTATION

28. The member shall at all times respect the individuality, dignity and rights of choice of the client. At no time during the consultation shall the Member directly or indirectly make disparaging, suggestive, sexual or provocative inferences, physical contacts, orations or actions. This statute shall extend to any comments regarding body or body part size, shape or other physical characteristic/s, unless being discussed at the instigation of the patient, and falling directly within the interest of the consultation and the member's area of qualified expertise.
29. At no time shall the client be asked to remain disrobed for a period longer than the imaging process requires. The client's modesty will be preserved and respected as far as is possible without compromising image quality and clinical value.
30. The member shall as far as is practicable, refrain from physical contact with the client during the imaging process. In circumstances where contact must be made, as in refining a patient's position, the patient shall be advised in such a manner that if they feel uncomfortable with the said contact, they can refuse it without fear of degradation or rancour on the part of the client.
31. When dealing with a minor or mentally incompetent person, as defined by the relevant state, county or federal laws, a parent, legal guardian or where appropriate, a carer shall be continuously present during the consultation.

THE THERMOGRAPHIC CONSULTATION

32. ATA statement regarding the Thermographic consultation; The Thermographic consultation is recognised by the ATA as the acts and action necessary for the capturing and storage of well controlled, clinically meaningful images and data which comply to a set of strict standards and protocols ensuring image and data quality.
33. Suitable adaptations of the postures required for imaging of physically handicapped or mobility impaired clients shall be employed by the member to avoid unnecessary distress, pain or discomfort to the client. When an image is captured in a non-standard posture, suitable annotation in the clinical notes should be made to explain the deviation, and allow replication of those postures for future comparative studies.
34. With due regard for the preceding paragraph, the member will do their utmost to ensure that the client's postures remain similar and constant in all regional studies to allow true thermographic comparison and study as required by the images being captured. An example of this would be asking the patient to maintain her hands linked behind her neck, and arms aligned on the coronal plane for the five standard images of a breast study. This allows for future studies to be taken in similar positions and allow comparative studies to be performed.
35. The client shall be proven to have reached thermal stability (equilibration) when a successive series of at least three images taken at a minimum of 1 minute apart show no significant trending of thermal values within the image frame. A standard deviation of $<0.1^{\circ}\text{C}$ of maximum temperatures of the image frame without trend is considered sufficient proof of equilibration. Should the maximum temperature deviations remain above this, but show a non-trending pattern, that is, consistently falling or rising values, the deviation should be noted in the clinic notes.

36. The infrared detector shall be positioned in such a way as to be as perpendicular to the surface of the region being imaged as is practicable. If perpendicular angles are not available for a particular image or image series, then all efforts must be made to keep constant the relative angles for contra-lateral images, and a clear and precise description of the angles be made in the clinical notes to allow future replication of those angles in comparative studies.
37. The image shall be focussed in such a manner that the area being studied is in clear focus. In the event of a large field of depth variance of a region of interest (ROI) which makes overall focusing difficult, two images should be captured showing a shallow and deep focus, allowing sufficient detail to be visualised throughout the ROI.
38. The image shall have the ROI suitably framed so that the area of study as much as possible fills the image frame. Particular care shall be taken to ensure that captured and stored images involve all of the anatomical landmarks required for the particular image study.
39. With all thermography the colors (be it colours, greyscale shades or other mode of display) displayed in the images are relative and arbitrary. An individual colour does not represent a specific or absolute temperature. The member's objective is to provide a consistent, optimum-quality study where the values represented by the colours may vary, but the range (the spread of temperatures displayed between minimum and maximum) does not. Should the need arise for an image to be saved in a range outside of the study's standard color range, the image shall be saved in the study's standard colour range and a second image shall be saved in the new range, and so noted in the clinical notes.
40. It is important to adjust the image so that the region of interest is within the middle range of the displayed color scale. This allows latitude on either side of the selected colors so that any significant temperature variance can be visualized within the parameters of the color scale. In adjusting the allocation of colors, the member's task is to clearly demonstrate any thermographic phenomena that may be present.
41. Members shall ensure that all contra-lateral comparative images are saved in identical temperature range and display format. The ATA recognises that one of the prime functions of thermographic study is contra-lateral comparison. In the event of temperature range or display modification to accommodate a particular thermal phenomena, a second image file shall be created as such a modified image, and be so labelled accordingly as described in clause 39.
42. In the event that an image is considered by clinical impression equivocal, questionable or positive or should images on final reflection be found to have poor controls or protocols which compromise the study quality, a second imaging session is warranted to confirm the initial impressions and establish a consistent baseline for future studies.

THE DIGITAL IMAGES

43. Images captured digitally, and by a computer with an operating system capable of long file names, shall be named with; a) sufficient detail to identify the client without ambiguity, b) sufficient detail to identify the thermographer and clinic (the member's three character ATA membership number is recommended), c) the body region and aspect of each image. The ATA approved format for image labelling is described as follows.

44. The patient's identity will be set in the first part of the file name by the first three letters of the family name, the first three letters of the first name, and the initial of the first middle name, followed by the year of birth expressed as two figures, the month of birth, expressed as two figures, and the day of birth, expressed as two figures. Should a client not have sufficient letters in their name to fulfil these requirements, an underscore will substitute the missing letters. As an example of this rule in application, a fictitious person named **Mary Jane Smith**, born on the **16th of November, 1963** would be identified in the file name as described above as **SmiMarJ631116**. Whilst not impossible to find another person with a similar name or date of birth, the statistical unlikelihood of finding an exact duplicate name and birth date make this system of client identification quite reliable under normal circumstances when combined with the thermographer's ATA membership number.
45. The ATA membership number will then make up the next character group. We will use the fictitious ATA membership number of AZ1. This makes the file name now **SmiMarJ641119AZ1**.
46. The ROI and aspect should now be inserted as practiced by the thermal imaging laboratory in question. The ATA recommends a file naming protocol as described in annex 1.0.
47. The date of the scan is not required to be inserted into the file name as a digital file has the file creation date embedded into it. This file creation date can be reviewed in most image viewing programs.
48. Members shall, prior to releasing a client, review all images taken and ensure that images comply with the above mentioned criteria. Any image which is not of sufficient quality should be retaken. If the region being re-imaged is a part of a contra-lateral study, re-imaging of the contra-lateral region is necessary.
49. Members shall regard all client images, history, clinical notes and any other associated material as medical records, and as such, shall store and maintain this information in such a manner that the information is preserved and safeguarded. In the case of computer disk based digital storage, adequate measures must be undertaken by the member to ensure that the records are not compromised by computer hardware or software failure or misadventure, and are as much as is practicable, secured from external access by unauthorised parties. The member has the responsibility of maintaining a current anti-virus software program, and ensuring that the information is backed up completely, and the backup hardware is in a different physical location to the main storage facility.

IMAGE INTERPRETATION

50. The ATA recognises that Thermal Imaging cannot and should not be regarded as an independent diagnostic test, but is an efficient testing modality that allows the observation of physiological phenomena and certain metabolic changes. Member's shall not claim by direct, implied, implicit or explicit means that thermal imaging is capable of being used as an independent diagnostic test, or that it is capable of specifically diagnosing conditions. Thermography is capable of defining and recording thermal phenomena which can be indicative of underlying pathological, anatomical or physiological conditions, but is not capable of diagnosing or specifically defining those conditions.

51. Those persons recognised by the ATA as Thermologists are deemed qualified to interpret and report Thermographic images (consistent with their Thermological training) with a view to commenting upon the clinical significance of Thermographic phenomena, and proposing possible clinical or physiological conditions, events or phenomena likely to be responsible for, or indicated by the thermal findings. Thermologists who are not registered healthcare professionals are not to make definitive or specific diagnostic statements.
52. Those persons recognised by the ATA as Thermographers are deemed qualified to report Thermographic images (consistent with their thermographical training) with a view to defining and describing thermographic phenomena observed in those images. Thermographers are not to propose clinical or physiological conditions, events or phenomena implied by the thermal images.
53. Those recognised by the ATA as thermographic technicians are deemed qualified to capture and record thermographic images, and perform specific imaging techniques. Thermographic technicians are not qualified to interpret or report thermal images.
54. Diagnostic Thermographic reports may only be produced by an individual who is both an ATA recognised Thermologist and a registered health-care professional. Further, the member must be in possession of sufficient case history and other clinical evidence to justify his or her diagnosis. A diagnostic decision on the basis of a thermograph alone is not condoned nor supported by the ATA.
55. Members shall comply with the ATA Practice Guidelines, and the ATA Policy Statements in particular when making claims with regard to the efficacy, modes of action or diagnostic or screening potential of thermal imaging.

THERMOGRAPHIC REPORTS

56. Reports prepared by ATA members shall comply with the ATA Practice Guidelines.
57. Members preparing reports shall as far as is practicable without compromising clinical integrity, prepare the report in such a way as to be of use to the client and their health care professionals whilst staying within all ATA guidelines.
58. A member's report shall describe any Thermologically notable or significant thermal phenomena, and note its location (and characteristic if applicable) upon the body.
59. A member's thermographic report shall at minimum contain; patient identification information, thermographer and/or lab name and ATA membership number, date of examination, name and ATA membership number of the reporting Thermologist/Thermographer, relevant clinical notes (including mention of protocols, artefacts, anomalies or other confounding factors) and any relevant clinical history data potentially contributing to, or arising from a noted thermal phenomena. Every page of the report should contain at least the patient's identification information.

SPECIALISED EXAMINATION PROCEDURES

60. A cold stress test may be performed to test sympathetic nerve function or emphasize an inflammatory process in a given region. The test must be well controlled to have clinical significance, and must conform to the following protocols; The images taken during a cold stress test must be clearly identified as being a sequential set in a cold stress test, and the image should be kept constant in frame, client position and focus, with the first image prior to the test commencement (baseline), and images captured every twenty seconds (or less than every 20 seconds provided that frequency of capture is constant and noted in the clinical notes) after the test commencement until the test is terminated. If a distal limb is being tested, the area being challenged can be imaged with its contra-lateral partner to prove efficacy of the test, and establish a normal response range for the patient. For this to be achieved the diagonally opposed hand or foot is subjected to the cold stress. The cold exposure medium shall not be colder than 4.0^oC (approx. 10.0^oC is recommended) but sufficiently cold to elicit a sympathetic response. The sequential imaging shall be continued for at least three minutes during and/or after cold stressing. There should be a concluding image / images taken at least 10 minutes after the cold stress proving a post-test baseline value.

61. A heat stress test may be performed to test sympathetic nerve function or emphasize a neurological process in a given region. The test must be well controlled to have clinical significance, and must conform to the following protocols; The images taken during a heat stress test must be clearly identified as being a sequential set in a heat stress test, and the image should be kept constant in frame, client position and focus, with the first image prior to the test commencement (baseline), and images captured every twenty seconds (or less than every 20 seconds provided that frequency of capture is constant and noted in the clinical notes) after the test commencement until the test is terminated. If a distal limb is being tested, the area being challenged can be imaged with its contra-lateral partner to prove efficacy of the test, and establish a normal response range for the patient. The heat exposure medium shall not be of a temperature sufficient to cause physical harm to the client. The sequential imaging shall be continued for at least three minutes during and/or after heat stressing. There should be a concluding image / images taken at least 10 minutes after the heat stress proving a post-test baseline value.

62. Spray cooling of a specific localised area may be performed to isolate or define an area of thermal activity. The test must be well controlled to have clinical significance, and must conform to the following protocols; The images taken during a spray cooling must be clearly identified as being a sequential set in a spray cooling test, and the image should be kept constant in frame, client position and focus, with the first image prior to the test commencement, and images captured ever twenty seconds after the test commencement until the test is terminated. The test involves the spraying (physical swabbing can give a thermographic artefact, and is to be avoided) of a fast evaporating liquid evenly over the area being doused. The preferred media is isopropyl or ethyl alcohol, but methyl alcohol may be used provided that the patient is carefully questioned regarding any known reaction or sensitivity to methyl alcohol fumes. Other sports style cooling sprays may also be used provided that they are able to be applied uniformly and lightly as a spray.

GATHERING DATA FOR RESEARCH AND CORRELATIVE STUDIES

63. Any records passed to a member as a part of a correlative study or research study shall become a part of the client's case material and be subject to the same levels of confidentiality and privacy as all other case material as described in the ATA Practice Guidelines.
64. Prior to the use of any client's case material in any study, advertising or in any other use by a member, the client must have signed a consent form expressly releasing the information in accordance with the ATA Practice Guidelines.

ADVERTISING AND PROMOTION OF MEMBER'S SERVICES

65. Advertising must comply and conform to all ATA Practice Guidelines. All claims made shall comply with the boundaries and uses of thermography as described in the ATA Practice Guidelines, and specifically, in the ATA Policy Statements. Any claim falling outside of the ATA Practice Guidelines may be referred to the ATA Grievance and Disciplinary Committee.
66. Members may not use material which has not been consented at described in the ATA Practice Guidelines.
67. Members shall retain full control and power of veto over all sponsored information or advertising, and undertake to proof read all advertising material with regard to the ATA Practice Guidelines prior to releasing the said material for publication, dissemination or transmission.