

FEBRUARY 2021
VERSION 1.0

DEFINITION

Retina is the area of enhanced competence within Ophthalmology concerned with the screening, diagnosis, prevention, and management of medical and surgical disorders of the posterior segment of the eye¹, including the retina, vitreous, choroid, and sclera.

ELIGIBILITY REQUIREMENTS TO BEGIN TRAINING

Royal College certification in Ophthalmology or equivalent

OR

Eligibility for the Royal College examination in Ophthalmology

ELIGIBILITY REQUIREMENTS TO SUBMIT A ROYAL COLLEGE COMPETENCY PORTFOLIO

All trainees must be Royal College certified in Ophthalmology, or equivalent, in order to be eligible to submit a Royal College competency portfolio in Retina.

MAJOR TASKS OF RETINA

The discipline of Retina includes responsibility for the following:

1. Assessment of patients with diseases of the posterior segment of the eye
2. Performance of minor procedures for patients with diseases of the posterior segment of the eye
3. Surgical management for patients with diseases of the posterior segment of the eye

¹ This term is abbreviated to "posterior segment" in some instances to avoid repetition.

At the completion of training, the diplomate will have acquired the following competencies and will function effectively as a:

Medical Expert

Definition:

As *Medical Experts*, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centred care. Medical Expert is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.

Key and Enabling Competencies: Retina diplomates are able to...

1. Practise medicine within their defined scope of practice and expertise

- 1.1. Demonstrate a commitment to high-quality care of their patients
- 1.2. Integrate the CanMEDS Intrinsic Roles into their practice of medicine
- 1.3. Apply knowledge of the clinical and biomedical sciences relevant to their discipline
 - 1.3.1. Anatomy and physiology of the eye
 - 1.3.2. Visual psychophysics
 - 1.3.3. Ocular immunology
 - 1.3.4. Epidemiology, classification, etiology, pathophysiology, and treatment of diseases of the posterior segment of the eye
 - 1.3.4.1. Choroidal vascular membrane disease
 - 1.3.4.1.1. Age-related macular degeneration
 - 1.3.4.1.2. Angioid streaks
 - 1.3.4.1.3. Central serous chorioretinopathy
 - 1.3.4.1.4. Ocular histoplasmosis
 - 1.3.4.1.5. Pathologic myopia
 - 1.3.4.1.6. Polypoidal choroidal vasculopathy
 - 1.3.4.1.7. Uveal effusion syndrome and hypotony maculopathy
 - 1.3.4.2. Dislocated crystalline or artificial lens
 - 1.3.4.3. Inflammatory conditions
 - 1.3.4.3.1. Infectious
 - 1.3.4.3.1.1. Acute retinal necrosis syndrome
 - 1.3.4.3.1.2. Endogenous endophthalmitis
 - 1.3.4.3.1.3. HIV-associated infections
 - 1.3.4.3.1.4. Helminthic disease
 - 1.3.4.3.1.5. Infectious endophthalmitis
 - 1.3.4.3.1.6. Mycobacterial infections

1.3.4.3.1.7. Spirochetal infections

1.3.4.3.2. Non-infectious

1.3.4.3.2.1. Autoimmune retinopathies

1.3.4.3.2.2. Eales disease

1.3.4.3.2.3. Intermediate uveitis

1.3.4.3.2.4. Retinal vasculitis

1.3.4.3.2.5. Rheumatic diseases

1.3.4.3.2.6. Sarcoidosis

1.3.4.3.2.7. Sympathetic ophthalmia

1.3.4.3.2.8. Vogt-Koyanagi-Harada disease

1.3.4.3.2.9. White dot syndromes

1.3.4.4. Macular disorders with vitreoretinal interface abnormalities

1.3.4.4.1. Cystoid macular edema

1.3.4.4.2. Epiretinal membranes

1.3.4.4.3. Macular hole

1.3.4.4.4. Vitreoretinal traction

1.3.4.5. Neoplastic diseases

1.3.4.5.1. Hematologic neoplasms

1.3.4.5.2. Tumours of the choroid

1.3.4.5.3. Tumours of the retina

1.3.4.6. Posterior segment trauma

1.3.4.6.1. Intraocular foreign bodies (IOFB)

1.3.4.6.2. Suprachoroidal hemorrhage

1.3.4.6.3. Traumatic chorioretinopathies

1.3.4.7. Retinal degenerations and dystrophies

1.3.4.7.1. Cone and rod functional abnormalities

1.3.4.7.2. Hereditary choroidal diseases

1.3.4.7.3. Hereditary vitreoretinal degenerative diseases

1.3.4.7.4. Macular dystrophies

1.3.4.7.5. Retinitis pigmentosa and associated disorders

1.3.4.8. Retinal vascular diseases

- 1.3.4.8.1. Coagulopathies
- 1.3.4.8.2. Coats disease
- 1.3.4.8.3. Diabetic retinopathy
- 1.3.4.8.4. Hemoglobinopathies
- 1.3.4.8.5. Hypertensive retinopathy
- 1.3.4.8.6. Macular telangiectasia
- 1.3.4.8.7. Ocular ischemic syndrome
- 1.3.4.8.8. Pediatric retinal vascular diseases
- 1.3.4.8.9. Radiation retinopathy
- 1.3.4.8.10. Retinal artery occlusion
- 1.3.4.8.11. Retinal macroaneurysm
- 1.3.4.8.12. Retinal vein occlusion
- 1.3.4.8.13. Retinopathy of prematurity

1.3.4.9. Retinal detachment

- 1.3.4.9.1. Exudative
- 1.3.4.9.2. Giant retinal tears
- 1.3.4.9.3. Proliferative vitreoretinopathy
- 1.3.4.9.4. Retinal dialysis
- 1.3.4.9.5. Rhegmatogenous
- 1.3.4.9.6. Senile retinoschisis
- 1.3.4.9.7. Subretinal hemorrhage
- 1.3.4.9.8. Tractional

1.3.4.10. Other retinal conditions

- 1.3.4.10.1. Drug toxicity
- 1.3.4.10.2. Optic disc anomalies
- 1.3.4.10.3. Photoc retinal injuries
- 1.3.4.10.4. Pregnancy-related

1.3.5. Treatments for diseases of the posterior segment of the eye:

- 1.3.5.1. Medical treatments
- 1.3.5.2. Surgical treatments
- 1.3.5.3. Treatment options for tumours

- 1.4. Perform appropriately timed clinical assessments with recommendations that are presented in an organized manner
- 1.5. Carry out professional duties in the face of multiple competing demands
- 1.6. Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice

2. Perform a patient-centred clinical assessment and establish a management plan

- 2.1. Prioritize issues to be addressed in a patient encounter
 - 2.1.1. Recognize urgent conditions that require immediate intervention, including
 - 2.1.1.1. Endophthalmitis
 - 2.1.1.2. Intraocular foreign body
 - 2.1.1.3. Retinal detachment
 - 2.1.1.4. Central retinal artery occlusion
 - 2.1.1.5. Open globe
- 2.2. Elicit a history, perform a physical exam, select appropriate investigations, and interpret the results for the purpose of diagnosis and management, disease prevention, and health promotion
 - 2.2.1. Perform a complete assessment of the posterior segment of the eye
 - 2.2.2. Perform diagnostic procedures
 - 2.2.2.1. Scleral depression
 - 2.2.2.2. Contact lens biomicroscopy
 - 2.2.2.3. Non-contact lens biomicroscopy
 - 2.2.3. Interpret diagnostic imaging of the eye, orbit and visual system
 - 2.2.3.1. Optical coherence tomography (OCT)
 - 2.2.3.2. Fluorescein, indocyanine green, and OCT angiography
 - 2.2.3.3. Fundus autofluorescence
 - 2.2.3.4. Visual field testing
 - 2.2.3.5. Ocular ultrasound
 - 2.2.3.6. Computed tomography (CT)
 - 2.2.3.7. Reports of magnetic resonance imaging (MRI)
 - 2.2.4. Interpret reports of physiological testing, including
 - 2.2.4.1. Electroretinography (ERG)
 - 2.2.4.2. Electrooculography (EOG)

- 2.3. Establish goals of care in collaboration with patients and their families², which may include slowing disease progression, treating symptoms, achieving cure, improving function, and palliation
- 2.4. Establish a patient-centred management plan for patients with the following:
 - 2.4.1. Complications arising from medical and surgical treatment
 - 2.4.2. Inherited retinal conditions
 - 2.4.3. Infections and non-infectious inflammatory conditions
 - 2.4.4. Complex ocular trauma
 - 2.4.5. Tumours
 - 2.4.6. Vascular diseases
 - 2.4.7. Vitreoretinal diseases

3. Plan and perform procedures and therapies for the purpose of assessment and/or management

- 3.1. Determine the most appropriate procedures or therapies
- 3.2. Obtain and document informed consent, explaining the risks and benefits of, and the rationale for, a proposed procedure or therapy
- 3.3. Prioritize a procedure or therapy, taking into account clinical urgency and available resources
- 3.4. Perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances
 - 3.4.1. Select and apply topical and regional anesthesia to the eye and periocular structures
 - 3.4.2. Apply general and procedure-specific safety precautions
 - 3.4.3. Operate and troubleshoot procedural equipment, including
 - 3.4.3.1. Surgical microscope
 - 3.4.3.2. Laser
 - 3.4.3.3. Phaco-vitreectomy machine
 - 3.4.3.4. Cryotherapy machine
 - 3.4.3.5. Photodynamic therapy equipment
 - 3.4.4. Perform procedures to manage diseases of the posterior segment:
 - 3.4.4.1. Laser therapy of the macula and peripheral retina
 - 3.4.4.1.1. Contact lens laser
 - 3.4.4.1.2. Indirect laser

² Throughout this document, references to the patient's family are intended to include all those who are personally significant to the patient and are concerned with his or her care, including, according to the patient's circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers

- 3.4.4.2. Cryotherapy
- 3.4.4.3. Periocular injections
 - 3.4.4.3.1. Retrobulbar
 - 3.4.4.3.2. Peribulbar
 - 3.4.4.3.3. Sub-Tenon

- 3.4.4.4. Intravitreal injection
- 3.4.4.5. Vitreous tissue sampling

3.4.5. Perform surgery to manage diseases of the posterior segment

- 3.4.5.1. Posterior vitrectomy
 - 3.4.5.1.1. Application of energy in the intravitreal space
 - 3.4.5.1.2. Membrane dissection, segmentation, and peeling
 - 3.4.5.1.3. Usage of intravitreal adjuvants including tamponade
 - 3.4.5.1.4. Removal of intraocular tissue
 - 3.4.5.1.5. Injection of intraocular medications
 - 3.4.5.1.6. Removal of dislocated lens material or intraocular lens
 - 3.4.5.1.7. Placement or fixation of a secondary intraocular lens
 - 3.4.5.1.8. Removal of IOFB
- 3.4.5.2. Scleral buckling surgery
 - 3.4.5.2.1. Segmental buckling
 - 3.4.5.2.2. Circumferential buckling
 - 3.4.5.2.3. Drainage of sub-retinal fluid
- 3.4.5.3. Complex ocular trauma repair
 - 3.4.5.3.1. IOFB removal using magnet or forceps
 - 3.4.5.3.2. Muscle disinsertion and reattachment to facilitate repair of scleral rupture
 - 3.4.5.3.3. Lens removal
- 3.4.5.4. Pneumatic retinopexy

3.4.6. Provide post-operative care

- 3.4.6.1. Counsel patients on positioning, precautions, and post-operative care

- 3.4.6.2. Orient patients to the expected post-operative course and when to seek medical assistance
- 3.4.6.3. Prescribe post-operative medications
- 3.4.6.4. Recognize and manage immediate complications of surgical procedures
- 3.4.6.5. Arrange long-term post-operative care plan

4. Establish plans for ongoing care and, when appropriate, timely consultation

- 4.1. Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, response to treatment, and further consultation

5. Actively contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety

- 5.1. Recognize and respond to harm from health care delivery, including patient safety incidents
- 5.2. Adopt strategies that promote patient safety and address human and system factors

Communicator

Definition:

As *Communicators*, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.

Key and Enabling Competencies: Retina diplomates are able to...

1. Establish professional therapeutic relationships with patients and their families

- 1.1. Communicate using a patient-centred approach that encourages patient trust and autonomy and is characterized by empathy, respect, and compassion
- 1.2. Optimize the physical environment for patient comfort, dignity, privacy, engagement, and safety
- 1.3. Recognize when the perspectives, values, or biases of patients, physicians, or other health care professionals may have an impact on the quality of care, and modify the approach to the patient accordingly
- 1.4. Respond to a patient's non-verbal behaviours to enhance communication
- 1.5. Manage disagreements and emotionally charged conversations
- 1.6. Adapt to the unique needs and preferences of each patient and to his or her clinical condition and circumstances

2. Elicit and synthesize accurate and relevant information, incorporating the perspectives of patients and their families

- 2.1. Use patient-centred interviewing skills to effectively gather relevant biomedical and psychosocial information
- 2.2. Provide a clear structure for and manage the flow of an entire patient encounter
- 2.3. Seek and synthesize relevant information from other sources, including the patient's family, with the patient's consent

3. Share health care information and plans with patients and their families

- 3.1. Share information and explanations that are clear, accurate, and timely, while checking for patient and family understanding
- 3.2. Disclose harmful patient safety incidents to patients and their families accurately and appropriately

4. Engage patients and their families in developing plans that reflect the patient's health care needs and goals

- 4.1. Facilitate discussions with patients and their families in a way that is respectful, non-judgmental, and culturally safe
- 4.2. Assist patients and their families to identify, access, and make use of information and communication technologies to support their care and manage their health
- 4.3. Use communication skills and strategies that help patients and their families make informed decisions regarding their health

5. Document and share written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy

- 5.1. Document clinical encounters in an accurate, complete, timely, and accessible manner, in compliance with regulatory and legal requirements
- 5.2. Communicate effectively using a written health record, electronic medical record, or other digital technology
- 5.3. Share information with patients and others in a manner that enhances understanding and that respects patient privacy and confidentiality

Collaborator

Definition:

As *Collaborators*, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.

Key and Enabling Competencies: Retina diplomates are able to...

1. Work effectively with physicians and other colleagues in the health care professions

- 1.1. Establish and maintain positive relationships with physicians and other colleagues in the health care professions to support relationship-centred collaborative care
- 1.2. Negotiate overlapping and shared responsibilities with physicians and other colleagues in the health care professions in episodic and ongoing care
- 1.3. Engage in respectful shared decision-making with physicians and other colleagues in the health care professions

2. Work with physicians and other colleagues in the health care professions to promote understanding, manage differences, and resolve conflicts

- 2.1. Show respect toward collaborators
- 2.2. Implement strategies to promote understanding, manage differences, and resolve conflicts in a manner that supports a collaborative culture

3. Hand over the care of a patient to another health care professional to facilitate continuity of safe patient care

- 3.1. Determine when care should be transferred to another physician or health care professional
- 3.2. Demonstrate safe handover of care, using both oral and written communication, during a patient transition to a different health care professional, setting, or stage of care

Leader

Definition:

As *Leaders*, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

Key and Enabling Competencies: Retina diplomates are able to...

1. Contribute to the improvement of health care delivery in teams, organizations, and systems

- 1.1. Apply the science of quality improvement to contribute to improving systems of patient care
- 1.2. Contribute to a culture that promotes patient safety
- 1.3. Analyze patient safety incidents to enhance systems of care
- 1.4. Use health informatics to improve the quality of patient care and optimize patient safety

2. Engage in the stewardship of health care resources

- 2.1. Allocate health care resources for optimal patient care
- 2.2. Apply evidence and management processes to achieve cost-appropriate care

3. Demonstrate leadership in health care systems

- 3.1. Demonstrate leadership skills to enhance health care
- 3.2. Facilitate change in health care to enhance services and outcomes

4. Manage career planning, finances, and health human resources in personal practice(s)

- 4.1. Set priorities and manage time to integrate practice and personal life
- 4.2. Manage personal professional practice(s) and career
- 4.3. Implement processes to ensure personal practice improvement

Health Advocate

Definition:

As *Health Advocates*, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.

Key and Enabling Competencies: Retina diplomates are able to...

1. Respond to an individual patient's health needs by advocating with the patient within and beyond the clinical environment

- 1.1. Work with patients to address determinants of health that affect them and their access to needed health services or resources
- 1.2. Work with patients and their families to increase opportunities to adopt healthy behaviours
- 1.3. Incorporate disease prevention, health promotion, and health surveillance into interactions with individual patients
 - 1.3.1. Encourage healthy living to improve retinal health
 - 1.3.1.1. Exercise
 - 1.3.1.2. Nutrition
 - 1.3.1.3. Smoking cessation
 - 1.3.1.4. For patients with diabetes, control of blood sugar, blood pressure, lipid levels, and obstructive sleep apnea
 - 1.3.2. Apply preventive interventions, including

- 1.3.2.1. Nutritional supplements such as vitamin and anti-oxidant therapy
- 1.3.2.2. Ultraviolet A and Ultraviolet B protection
- 1.3.2.3. Work- and sports-related eye protection

2. Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner

- 2.1. Work with a community or population to identify the determinants of health that affect them
- 2.2. Improve clinical practice by applying a process of continuous quality improvement to disease prevention, health promotion, and health surveillance activities
- 2.3. Contribute to a process to improve health in the community or population
 - 2.3.1. Promote eye safety in recreation and work environments

Scholar

Definition:

As *Scholars*, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.

Key and Enabling Competencies: Retina diplomates are able to...

1. Engage in the continuous enhancement of their professional activities through ongoing learning

- 1.1. Develop, implement, monitor, and revise a personal learning plan to enhance professional practice
- 1.2. Identify opportunities for learning and improvement by regularly reflecting on and assessing their performance using various internal and external data sources
- 1.3. Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice

2. Teach students, residents, the public, and other health care professionals

- 2.1. Recognize the influence of role-modelling and the impact of the formal, informal, and hidden curriculum on learners
- 2.2. Promote a safe learning environment
- 2.3. Ensure patient safety is maintained when learners are involved
- 2.4. Plan and deliver a learning activity
- 2.5. Provide feedback to enhance learning and performance
- 2.6. Assess and evaluate learners, teachers, and programs in an educationally appropriate manner
- 2.7. Present information to the public or media about a Retina issue

3. Integrate best available evidence into practice

- 3.1. Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters and generate focused questions that address them
- 3.2. Identify, select, and navigate pre-appraised resources
- 3.3. Critically evaluate the integrity, reliability, and applicability of health-related research and literature
- 3.4. Integrate evidence into decision-making in their practice

4. Contribute to the creation and dissemination of knowledge and practices applicable to health

- 4.1. Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in health care
- 4.2. Identify ethical principles for research and incorporate them into obtaining informed consent, considering potential harms and benefits and vulnerable populations
- 4.3. Contribute to the work of a research program
- 4.4. Pose questions amenable to scholarly investigation and select appropriate methods to address them
- 4.5. Summarize and communicate to professional and lay audiences, including patients and their families, the findings of relevant research and scholarly inquiry

Professional

Definition:

As *Professionals*, physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.

Key and Enabling Competencies: Retina diplomates are able to...

1. Demonstrate a commitment to patients by applying best practices and adhering to high ethical standards

- 1.1.Exhibit appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality
- 1.2.Demonstrate a commitment to excellence in all aspects of practice
- 1.3.Recognize and respond to ethical issues encountered in practice
- 1.4.Recognize and manage conflicts of interest
- 1.5.Exhibit professional behaviours in the use of technology-enabled communication

2. Demonstrate a commitment to society by recognizing and responding to societal expectations in health care

- 2.1.Demonstrate accountability to patients, society, and the profession by responding to societal expectations of physicians
- 2.2.Demonstrate a commitment to patient safety and quality improvement

3. Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation

- 3.1.Fulfil and adhere to professional and ethical codes, standards of practice, and laws governing practice
- 3.2.Recognize and respond to unprofessional and unethical behaviours in physicians and other colleagues in the health care professions
- 3.3.Participate in peer assessment and standard setting

4. Demonstrate a commitment to physician health and well-being to foster optimal patient care

- 4.1.Exhibit self-awareness and manage influences on personal well-being and professional performance
- 4.2.Manage personal and professional demands for a sustainable practice throughout the physician life cycle
- 4.3.Promote a culture that recognizes, supports, and responds effectively to colleagues in need

REQUIRED TRAINING EXPERIENCES

1. Provide consultation and ongoing care to patients with diseases of the posterior segment of the eye in a variety of settings.
2. Perform minor procedures for patients with diseases of the posterior segment of the eye, including laser therapy, cryotherapy, periocular injections, and intravitreal injections³.
3. Perform surgical procedures for patients with diseases of the posterior segment of the eye, including posterior vitrectomy, scleral buckling surgery, complex ocular trauma repair, and pneumatic retinopexy³.
4. Participate in interprofessional and multidisciplinary clinical rounds.
5. Participate in academic sessions pertaining to the practice of Retina.
6. Teach and supervise ophthalmology trainees and medical students.

RECOMMENDED TRAINING EXPERIENCES

1. Collaborate on or conduct quality improvement or research projects that improve delivery of care and outcome of patients with diseases of the posterior segment of the eye.
2. Disseminate new knowledge in the field of Retina through publications and presentations at meetings.
3. Participate in hospital, provincial, or national committees related to practice and education in the field of Retina.
4. Participate in training courses and CPD activities specific to Retina.

³ Minimum Performance Numbers

A minimum number of procedures to determine competency **cannot** be justified based on the currently available evidence for training in Retina. However, given the breadth of diseases and presentations, a number of performed procedures is recommended as a supplement to a competency-based portfolio.

COMPETENCY TRAINING REQUIREMENTS IN RETINA (FEBRUARY 2021)

Procedure	
Indirect laser therapy	20
Contact lens laser	20
Cryopexy (Cryotherapy)	20
Periocular injections	20
Intravitreal (intraocular) injections	20
Posterior vitrectomy	200 (50 membrane peeling, 10 complex lens cases including scleral fixation)
Scleral buckling	25
Complex ocular trauma repair	5
Pneumatic retinopexy	5

This document is to be reviewed by the AFC Subcommittee in Retina by February 1, 2023

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Approved – Specialty Standards Review Committee – December 2020