



## UNC DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

### OCULOPLASTIC ROTATION: COMPETENCY-BASED GOALS AND OBJECTIVES

#### MEDICAL KNOWLEDGE

##### **1. Anatomy/Physiology/Embryology of the Orbit**

**Goal:** The resident will achieve detailed knowledge of the anatomy, physiology, embryology of the eye and periorbital structures, and will apply this knowledge to the medical management of disorders and processes in this anatomic area.

**Objectives:**

1. Describe the anatomy of the orbit including bony anatomy, foramina, cranial nerves, soft tissue anatomy (canthus, tarsus, septum, lamellae, fat compartments), lacrimal gland, lacrimal duct nerves, and blood supply.
2. Identify and draw the anatomy of the orbital bones.
3. Identify the anatomy of the eye including normal dimensions, bony structures, eyelids, extraocular muscles, innervations, vascular supply, and lacrimal apparatus. Be able to draw this diagrammatically.
4. Explain the physiology and function of the cornea, lens, vitreous humor, aqueous humor, retina, fovea centralis.
5. Explain the general principles of embryology of the eye and congenital anomalies.

##### **2. Orbital Surgery**

**Goal:** The resident should have an understanding of orbital surgery including:

**Objectives:**

1. Describe the surgical spaces of the orbit.
2. Demonstrate the various approaches to the orbit and a knowledge of the appropriate clinical indications for each approach:
  - a. Anterior Orbitotomy
  - b. Superior approach
  - c. Medial approach
  - d. Inferior approach
  - e. Lateral Orbitotomy
3. Explain the indications and techniques for orbital decompression.
4. Demonstrate a working knowledge of the standard postoperative care of the ophthalmologic patient.
5. Discuss the potential complications of ophthalmologic surgery.

##### **3. Orbital Trauma**

**Goal:** The resident will be familiar with the mechanisms of traumatic ocular injuries, understand the diagnostic

techniques and therapeutic options for such problems, and perform complete management of traumatic injuries of the eyes/periorbita including:

- i. Midfacial fractures.
- ii. Orbital fractures
- iii. Zygomatic fractures
- iv. Orbital apex fractures
- v. Orbital roof fractures
- vi. Medial orbital fractures
- vii. Orbital floor fractures
- viii. Intraorbital foreign bodies
- ix. Orbital hemorrhage
- x. Traumatic visual loss with clear media

**Objectives:**

1. Describe the priorities involved in treating patients with ocular injuries
2. Describe the mechanical and structural properties of the orbital skeleton as they relate to fracture patterns in facial trauma.
3. Describe the concepts of primary bone healing, malunion, nonunion and osteomyelitis.
4. Discuss the advantages and disadvantages of various techniques of treatment of orbital fractures including:
  - a. nonoperative treatment
  - b. open reductions with and without fixations
  - c. bone grafting.
5. Describe the treatment of orbital fractures complications including:
  - a. secondary deformities
  - b. infections and osteomyelitis
  - c. enophthalmus
  - d. diplopia
6. Describe the neuroanatomy, cranial nerve anatomy and soft tissue anatomy pertinent to orbital fractures.  
Recite the treatment of soft tissue injuries of the eye/eyelid including:
  - a. lachrymal apparatus.
7. Describe the evaluation and treatment of secondary deformities of orbital fracture including:
  - a. enophthalmos
  - b. soft tissue contractures, ectropion, entropion.
8. Discuss the principles of care and the surgical steps in the treatment of the following:
  - a. Blepharoptosis
  - b. Enophthalmos
  - c. Ectropion
  - d. Entropion
  - e. Lower lid laxity/sclera show
  - f. Paralysis of eyelid
  - g. Eyelid reconstruction from trauma, or tumor resection
  - h. Local flap reconstructions of the lower eyelid
  - i. Grafts (cartilage, mucosa, skin) of the lower eyelid

#### **4. Infectious and Inflammatory disorders of the orbit**

**Goals:** The resident should have an understanding of infectious and inflammatory conditions that affect the orbit including:

- i. Infections
  - a. Cellulitis
  - b. Necrotizing fasciitis
  - c. Phycomycosis
  - d. Aspergillosis
  - e. Orbital TB
  - f. Parasitic Diseases
  
- ii. Inflammations
  - a. Graves Ophthalmopathy
  - b. Orbital Pseudotumor
  - c. Sarcoid
  - d. Orbital Vasculitis

**Objectives:**

1. Recite the diagnosis of and principles of care for:
  - a. Infections of the eye and periorbita
  - b. Inflammatory diseases of the eye and eyelid.

#### **5. Orbital Neoplasms**

**Goals:** The resident will obtain knowledge of benign and malignant tumors of the eye and periorbita, understand the biologic basis of treatment options for these lesions, and perform complete management of such lesions including diagnosis, surgery and nonsurgical therapy.

- i. Congenital orbital tumors
  - a. Hamartomas and Choristomas
  - b. Dermoid cysts
  - c. Lipodermoids
  - d. Teratomas
- ii. Vascular Tumors
  - a. Capillary Hemangiomas
  - b. Cavernous Hemangiomas
  - c. Hemangiopericytomas
  - d. Lymphangioma
  - e. Masquerading Conditions such as:
    1. AV Malformations
    2. AV Fistulas
    3. Orbital Varices
    4. Orbital Hemorrhages

- iii. Neural Tumors
  - a. Optic Nerve Gliomas
  - b. Neurofibromas
  - c. Meningiomas
- iv. Mesenchymal Tumors
  - a. Rhabdomyosarcoma
  - b. Osteoma
  - c. Fibrous Dysplasia
- v. Lymphoproliferative Disorders
  - a. Lymphoma
  - b. Plasma Cell Tumors
  - c. Histiocytic Disorders
  - d. Juvenile Xanthogranuloma
- vi. Lacrimal Gland Tumors
- vii. Eyelid Neoplasms
  - a. Benign Eyelid Tumors
  - b. Benign Adnexal Lesions
  - c. Benign Melanocytic Lesions
  - d. Premalignant Epidermal Lesions
  - e. Premalignant Melanocytic Tumors
  - f. Malignant Eyelid Tumors
  - g. Masquerading Neoplasms
- viii. Secondary Orbital Tumors from the Eye, Brain and Sinuses
- ix. Metastases

**Objectives:**

1. Recognize the clinical presentation of squamous and basal cell carcinoma of the eyelids/periorbita.
2. Recite the lymphatic drainage pattern of the periorbital structures and the relationship to the management of malignant tumors.
3. Recite the methods for diagnosis and the options for treatment of Squamous and basal cell carcinomas of the periorbita.
4. Recite the TNM staging system for tumors of the head and neck; know the features and biologic behavior these lesions.
5. Describe the general principles and techniques of adjuvant therapy such as radiation therapy and chemotherapy for ocular malignancies.
6. Discuss the indications for and the role of neck dissection in the treatment of head and neck malignancies.
7. Recite the process of long-term follow up for patients with ocular malignancies.

**6. Congenital and Acquired Eyelid Disorders**

**Goal:** The resident should have an understanding of the anatomy, embryology, evaluation, physical examination, classification, differential diagnosis, and treatment of congenital and acquired disorders of the eyelid.

**Objectives:**

1. Demonstrate intimate knowledge of the common congenital disorders of the eyelid (eg, blepharoptosis,

blepharochalasis, dermatochalasis).

2. Discuss the etiology, genetics, embryology, and anatomy of congenital disorders of the eye.
3. Be familiar with growth and development of the eye and orbit, and its affect on anomalies and their treatment.
4. Demonstrate intimate knowledge of the common acquired disorders of the eyelid (ectropion, entropion).

### **7. The Anophthalmic Socket**

**Goal:** The resident should have an understanding of the anophthalmic socket including:

**Objectives:**

1. Describe the anatomy, indications, techniques and complications associated with removal of the eye (eg, evisceration, enucleation, exenteration).
2. Discuss issues regarding anophthalmic socket complications and treatment.

### **8. Lacrimal Anatomy and Disorders**

**Goal:** The resident should have an understanding of the lacrimal anatomy and its associated disorders.

**Objectives:**

1. Review lacrimal anatomy and related nasal and sinus structures.
2. Review and differentiate the various etiologies of tearing including:
  - a. Hypersecretion
  - b. Abnormal lacrimal pump mechanism
  - c. Nasolacrimal duct obstructions

### **9. Facial Dystonias**

**Goal:** The resident should have an understanding of facial dystonias including:

- i. Benign Essential Blepharospasm
- ii. Hemifacial Spasm

**Objectives:**

1. Describe the etiology, anatomy, evaluation, differential diagnosis, and treatment of facial dystonia.
2. Discuss non-surgical versus surgical options for treatment.

## **PATIENT CARE**

**Goal:** Resident should be able to provide comprehensive, compassionate, and effective care for the patient with diseases of the eye and periocular structure.

**Objectives:**

1. Proficient in the repair of simple upper and lower eyelid defects.
2. Should be able to diagnose and plan management of oculoplastic and orbital emergencies, including periocular trauma.
3. Diagnose and plan management of eyelid tumors.
4. Diagnose and plan management of eyelid malpositions, including entropion, trichiasis, ectropion, facial nerve palsy and ptosis.
5. Repair of most eyelid positions.

6. Diagnosis and management of essential blepharospasm.
7. Perform gross and microscopic ophthalmic pathologic examinations, especially with regards to the orbit and ocular adnexa.

### **PRACTICE BASED LEARNING AND IMPROVEMENT**

**Goal:** The resident will investigate and evaluate his or her own patient care practices, appraise and assimilate scientific evidence, and improve patient care practices, as they relate to disease of the eye.

**Objectives:**

1. Identify strengths, deficiencies, and limits in one's knowledge and expertise in regards to the eye.
2. Set learning and improvement goals.
3. Identify and perform appropriate learning activities.
4. Use information technology to prepare for surgical cases and bring that knowledge to the OR.
5. Analyze the effectiveness of own practices in caring for patients with diagnoses involving the eye.
6. Improve own practices in the care of patients by integrating appropriately gathered data and feedback.
7. Educate medical students and other healthcare professionals in regards to diagnoses involving the eye.
8. Function independently with graduated advancement and appropriate faculty supervision.

### **INTERPERSONAL AND COMMUNICATION SKILLS**

**Goal:** The resident will demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and professional associates, as they apply to prevention and treatment of diseases of the eye.

**Objectives:**

1. Educate patients and their families about eye care and the prevention of eye disease.
2. Provide adequate counseling and informed consent to patients.
3. Listen to patients and their families regarding their concerns and level of understanding regarding diagnoses of the eye.
4. Chart and record accurate information regarding care of oculoplastic patients.
5. The resident should have a working understanding of diagnosis and treatment of basic diseases of the eye such that he or she can explain the nature of the problem to the patient and address the treatment options and long term outcome.
6. Assimilate data and information provided by members of the health care team, in the care of patients with oculoplastic anomalies.

### **SYSTEM BASED PRACTICE**

**Goal:** The resident will demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to call on system resources to provide care that is of optimal value.

**Objectives:**

1. Work effectively in various health care settings and systems relevant to oculoplastic surgery.
2. Coordinate care of patients with eye disorders within the health care system.
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care.
4. Advocate for quality care of the eye patient and optimal patient care systems.
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.
6. Participate in identifying system errors and implementing potential systems solutions.

## **PROFESSIONALISM**

**Goal:** The resident will demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

### **Objectives:**

1. Develops a sensitivity of the unique stresses placed on families under care for oculoplastic surgery.
2. Exhibits an unselfish regard for the welfare of oculoplastic surgery patients.
3. Demonstrates firm adherence to a code of moral and ethical values.
4. Is respectful to patients and their families especially in times of stress to the family unit.
5. Respects and appropriately integrates other members of the oculoplastic health care team.
6. Provides appropriately prompt eye consultations when requested.
7. Demonstrates sensitivity to the individual patient's profession, life goals, and cultural background as they apply to oculoplastic surgery.
8. Is reliable, punctual, and accountable for own actions in the OR and the clinic.
9. Understands the concepts of autonomy, beneficence, nonmalificence, justice, and respect for life.
10. Maintains patient confidentiality.