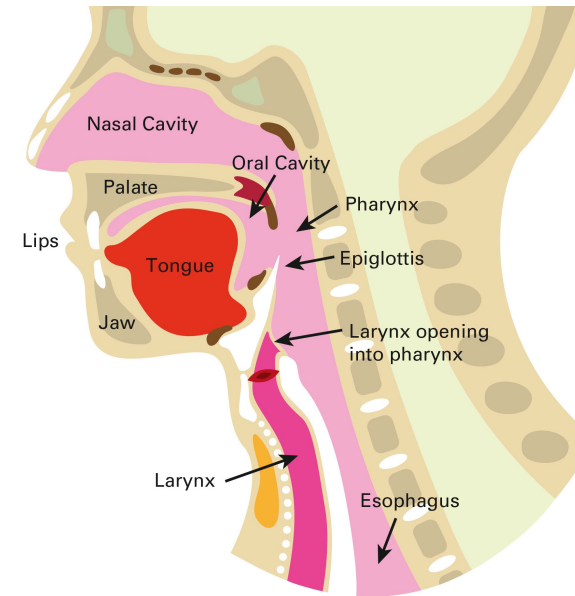


# Head & Neck Cancer

# Head & Neck Squamous Cell Carcinoma (SCC)

## Sites:

- **Nasopharyngeal**  
nasal cavity, paranasal sinuses
- **Oral**  
lips, oral cavity, hard palate, anterior tongue, mouth floor
- **Salivary Gland**  
parotid, sublingual, submandibular
- **Oropharyngeal**  
posterior tongue, tonsils, soft palate, posterior pharyngeal wall
- **Laryngeal**  
supraglottis, glottis, subglottis
- **Hypopharyngeal**  
pyriform sinus, pharyngeal walls, postcricoid



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## Staging:

### T Size

T1 = < 2 cm

T2 = 2-4 cm

T3 = > 4 cm

T4 = local invasion

### N Stage

N1 = LN < 6 cm

N2 = contralateral

N3 = LN > 6 cm

# Head & Neck SCC

## Risks:

### Viral Infections

HPV  
EBV

### Exposures

ETOH  
Smoking  
Other chemicals

### Congenital Syndromes

Fanconi anemia  
Congenital dyskeratosis  
Plummer-Vinson

## HPV:

- Associated with **OP cancers**
- Survival is better if HPV+
- Viral proteins E6/E7 → inactivate p53 and Rb tumor suppressor proteins
- **P16** is a marker of Rb degradation by E7

## EBV:

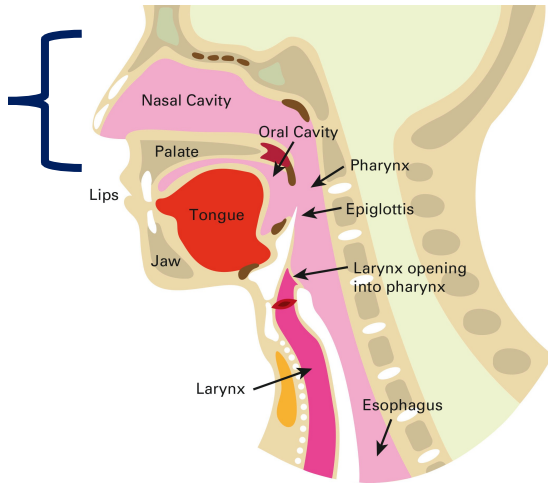
- Associated with **NP cancers**
- **EBER** = “epstein barr encoding region” = FISH marker
- Types
  - WHO TYPE I: Keratinizing (US)
  - WHO TYPE II: Non-keratinizing (endemic to China, N. Africa)
  - WHO TYPE III: Undifferentiated (endemic to China, N. Africa)

## SCC Tumor of Unknown Primary

- Treat as OP if HPV+
- Treat as NP if EBV+

# Nasopharyngeal SCC: Treatment

**Nasopharyngeal**  
nasal cavity, paranasal sinuses



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## Stage I

T1N0

**Surgery or Radiation Therapy**

## Stage II-III

T1N+, T2-T4Nx

**ChemoRT +/- Chemo**

ex: Cisplatin/RT → Cisplatin/5FU

## Stage IV (Metastatic, Recurrent)

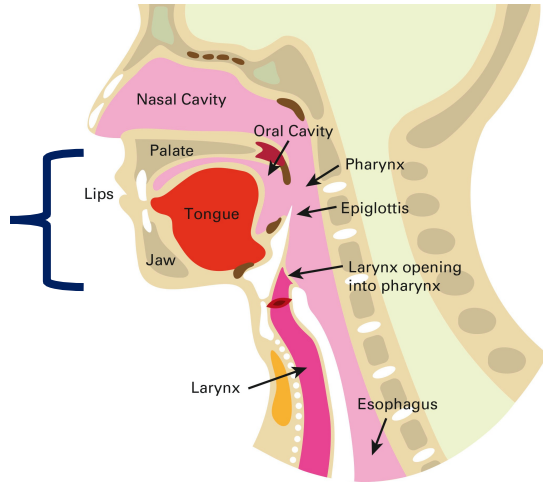
**Chemo**

ex: Cisplatin/Gemcitabine

# Oral & Salivary Gland SCC: Treatment

## Oral

lips, oral cavity, hard palate, anterior tongue, mouth floor



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## Salivary Gland

parotid, sublingual, submandibular

### Very Early Stage

T1-T2, N0

**Surgery +/- Neck Dissection**

**+/- SLNB**

### Early Stage

T1-T2, N1

**Surgery + Neck Dissection**

### Locally Advanced

T3-T4, N2-N3

+ PNI, + LVI,

+ Margins, + ECE

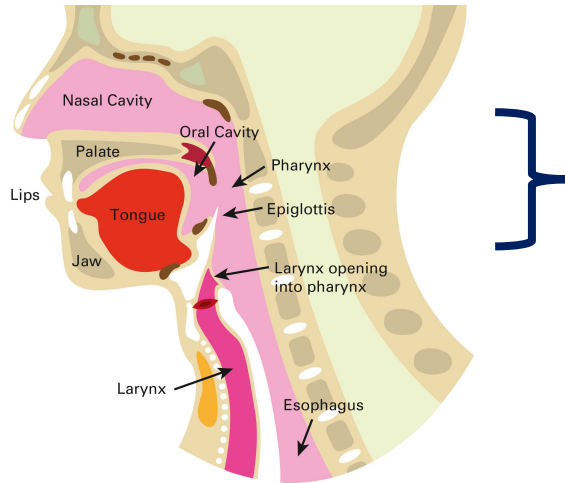
**Surgery + Neck Dissection**

**+ Adjuvant RT or ChemoRT**

# Oropharyngeal SCC: Treatment

## Oropharyngeal

posterior tongue, tonsils, soft palate, posterior pharyngeal wall



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## Early Stage OP

T1-T2, N0-N1 (single LN < 3 cm)

## Surgery or RT monotherapy

### 1. Surgery + Neck Dissection

Neck dissection = radical, modified radical or selective  
Radical = LN x 5 levels, SCM, IJ vein, spinal accessory nerve

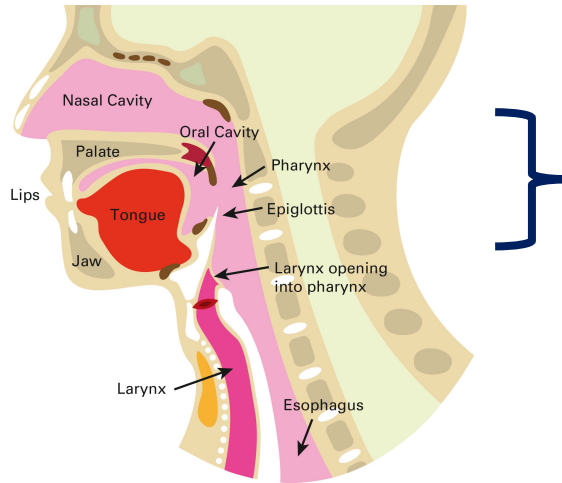
### 2. Radiation

Surgery + Adjuvant RT: positive margins, extracapsular extension, +LVI, +PNI

# Oropharyngeal SCC: Treatment

## Oropharyngeal

posterior tongue, tonsils, soft palate, posterior pharyngeal wall



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## Locally Advanced OP

T3-T4 Nx, Tx N2-N3

## ChemoRT

Cisplatin (Q3 week or weekly) + RT

Alternatives: carboplatin/5FU (GFR 15-30) or cetuximab (GFR <15)

**Local Recurrence:** Surgery (check PET >12 weeks)

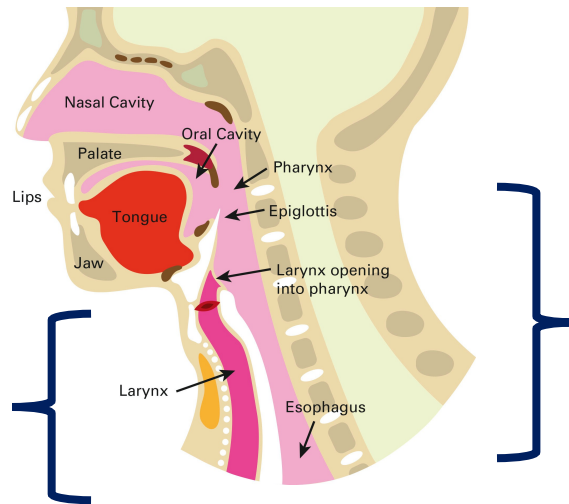
## Important Side Effects:

cisplatin → nephropathy, neuropathy, ototoxicity

# Laryngeal & Hypopharyngeal SCC: Treatment

## Laryngeal

supraglottis, glottis, subglottis



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Very Early Stage Laryngeal & Hypopharyngeal

T1N0

Surgery

## Hypopharyngeal

pyriform sinus, pharyngeal walls,  
post-cricoid

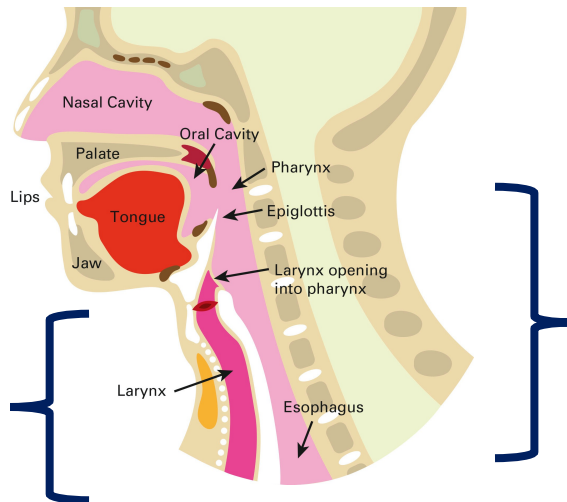


# Laryngeal & Hypopharyngeal SCC: Treatment

## Advanced Stage Laryngeal & Hypopharyngeal

### Laryngeal

supraglottis, glottis, subglottis



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### Hypopharyngeal

pyriform sinus, pharyngeal walls, post-cricoid

## Treatment Options; T1N+, T2-T3Nx, T4N0

1. Induction Chemo → RT (CR) or ChemoRT (PR)  
TPF (Docetaxel/Cisplatin/5FU)

2. Surgery + Neck Dissection → RT (CR) or ChemoRT (PR)

\* T4aN0 (invades local tissue, ex thyroid) = resectable, can have upfront surgery

\* T4bN0 (invades carotid, mediastinum) = unresectable, no upfront surgery

## 3. ChemoRT

Cisplatin/RT

\* Preferred in laryngeal to preserve vocal cord function

# Metastatic Head & Neck SCC: Treatment

## Metastatic HNSCC

### Front-Line Systemic Therapy

- **Chemotherapy**  
OP: Cisplatin + 5FU + Pembrolizumab  
NP: Cisplatin + Gemcitabine
- **Immunotherapy**  
Pembrolizumab (PDL1 > 1%)  
Nivolumab

### Second-Line Systemic Therapy

- **Immunotherapy** (any PDL1)

# Head & Neck Cancer Reference Handout

## Head & Neck Anatomy

### Sites:

#### Nasopharyngeal

nasal cavity, paranasal sinuses

#### Oral

lips, oral cavity, hard palate, anterior tongue, mouth floor

#### Salivary Gland

parotid, sublingual, submandibular

#### Oropharyngeal

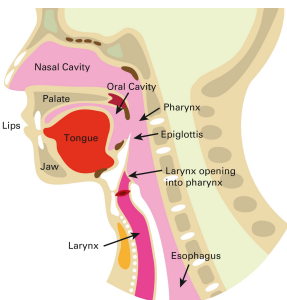
posterior tongue, tonsils, soft palate, posterior pharyngeal wall

#### Laryngeal

supraglottis, glottis, subglottis

#### Hypopharyngeal

pyriform sinus, pharyngeal walls, postcricoid



### Staging:

#### T Size

T1 = < 2 cm

T2 = 2-4 cm

T3 = > 4 cm

T4 = local invasion

#### N Stage

N1 = LN < 6 cm

N2 = contralateral

N3 = LN > 6 cm

## Nasopharyngeal Treatment

Stage I (T1N0)

Surgery or Radiation Therapy

Stage II-III (T1N+, T2-T4Nx)

ChemoRT +/- Chemo

Cisplatin/RT → Cisplatin/5FU

Stage IV (metastatic, recurrent)

Chemo

Cisplatin/Gemcitabine

## Oral & Salivary Gland Treatment

Very Early Stage (T1-T2N0)

Surgery +/- SLNB or Neck Dissection

Early Stage (T1-T2, N1)

Surgery + Neck Dissection

Locally Advanced (T3-T4, N2-N3)

Surgery + Neck Dissection  
+ Adjuvant RT or ChemoRT

+ PNI, + LVI,

+ Margins, + ECE

## Oropharyngeal Treatment

### Early Stage OP

T1-T2, N0-N1 (single LN < 3 cm)

### Surgery or RT monotherapy

Surgery + Adjuvant RT if: R1, ECE, LVI, PNI

### Locally Advanced OP

T3-T4 Nx, Tx N2-N3

### ChemoRT

**Cisplatin (Q3 week or weekly) + RT**

Alternatives: carboplatin/5FU or cetuximab

### Important Side Effects:

**cisplatin** → nephropathy, neuropathy, ototoxicity

**Local Recurrence:** Surgery (check PET >12 weeks)

## Metastatic HNSCC

### Front-Line Systemic Therapy

#### Chemotherapy

NP: Cisplatin + Gemcitabine

OP: Cisplatin + 5FU + Pembrolizumab

#### Immunotherapy

Pembrolizumab (PDL1 > 1%)

Nivolumab

## Hypopharyngeal & Laryngeal Treatment

### Very Early Stage Laryngeal & Hypopharyngeal

T1N0

### Surgery

### Advanced Stage Laryngeal & Hypopharyngeal

T1N+, T2-T3Nx, T4N0

#### 1. Induction Chemo → RT (CR) or ChemoRT (PR)

TPF (Docetaxel/Cisplatin/5FU)

#### 2. Surgery + Neck Dissection → RT (CR) or ChemoRT (PR)

#### 3. ChemoRT

Cisplatin/RT

### Second-Line Systemic Therapy

#### Immunotherapy (any PDL1)