





Distinguishing the Benign from the Deadly: Recognizing HPV Infections, Oral Cancer, and Pigmented Lesions

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ATLANTA  PATHOLOGY

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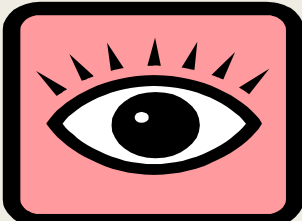
Goals

-  Recognize the oral and head and neck findings of HPV oropharyngeal cancer
-  Understand the relationship between conditions that occur both in the mouth and on the skin
-  Develop a differential diagnosis
-  Know when to refer to a specialist

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What to Look For During Screening


- White areas
- Red areas
- Sore areas
- Pigmented areas



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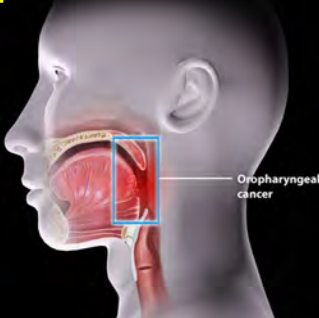
What to Look For During Screening

- Lump or thickening of the soft tissues
- Difficulty chewing or swallowing, or the feeling that something is caught in the throat
- Ear pain
- Difficulty in moving the tongue or jaw



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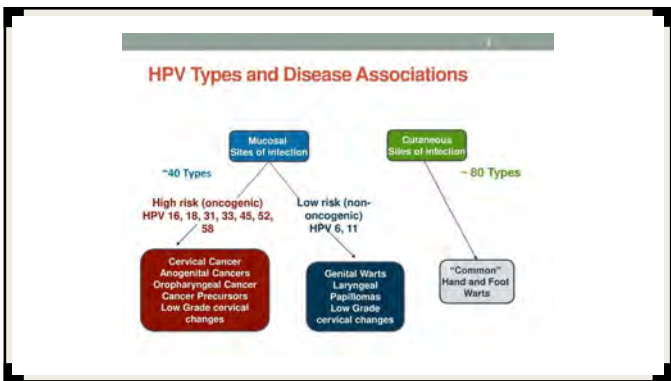
What's The Hype About HPV?

Oropharyngeal cancer

HPV

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Warts, Papillomas and Condylomas

HPV TYPES **LESIONS** **REGIONS**

BENIGN LESIONS
 1, 2, 3, 7
 6, 11, 42, 44, 50, 53, 83

WART

CONDYLOMA

MALIGNANT LESIONS
 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 60, 73, 82

CARCINOMA

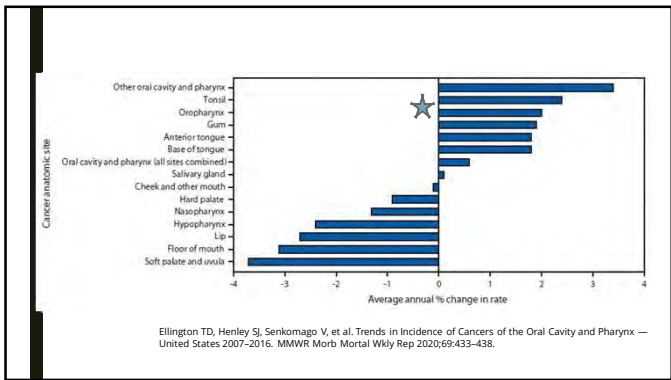
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HPV STATS

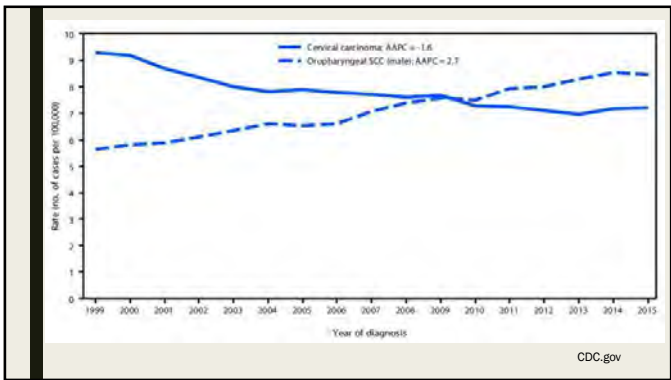
- More than 40 HPV strains cause cancer
- HPV is the **MOST** common STD in the US
- ~ 42.5 million Americans are infected with HPV
- > 43% of Americans ages 18-59 are infected with **GENITAL** HPV (45%M; 40%F)
- HPV cancers increased in last 15 years
- 1999: 30,000 cases 2015: 43,000
- Cervical and vaginal cancers decreased BUT oropharyngeal cancers increased

Kaiser Family Foundation 2021

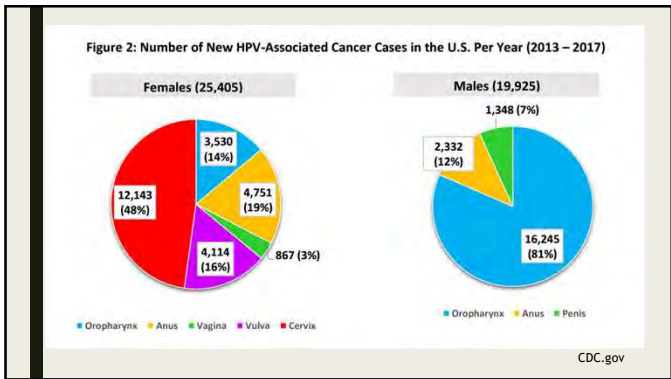
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HPV related Oropharyngeal Squamous Cell Carcinoma

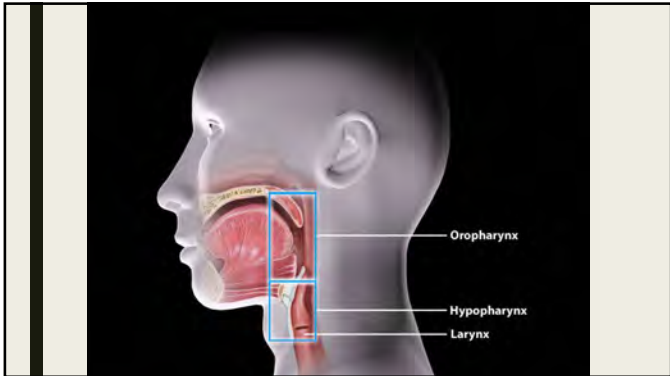
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- The incidence of oropharyngeal SCC has increased from 1973 to 2020 in the US
- We are seeing younger patients with OPSCC who have **NEVER SMOKED**
- Why? **HPV**

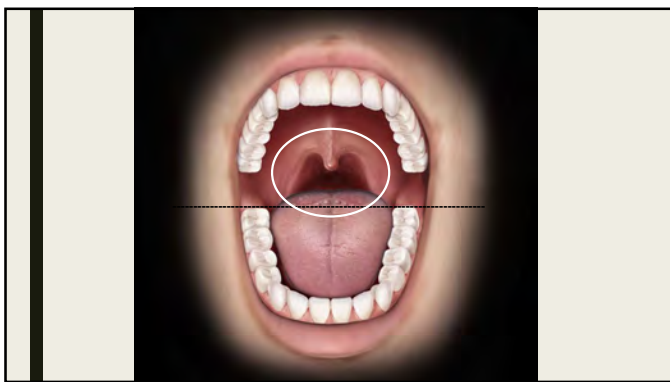
Eddie van Halen

Poison Drummer Rikki Rockett

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Oropharyngeal Cancer

Symptomatology

- ▶ Pain
- ▶ Dysphagia
- ▶ Otagia
- ▶ Neck mass
- ▶ Foreign body sensation
- ▶ Hemoptysis
- ▶ Weight loss
- ▶ Voice changes

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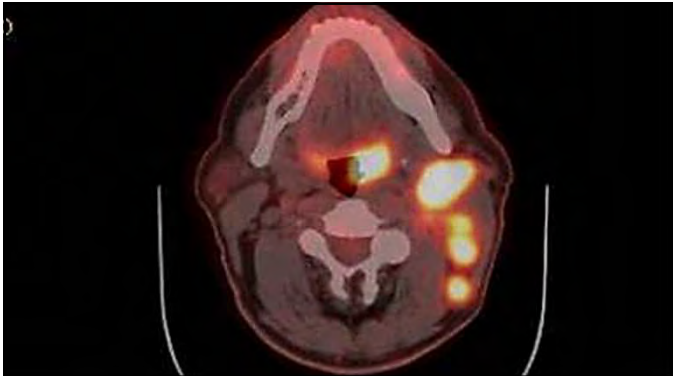
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How Do We Get HPV?

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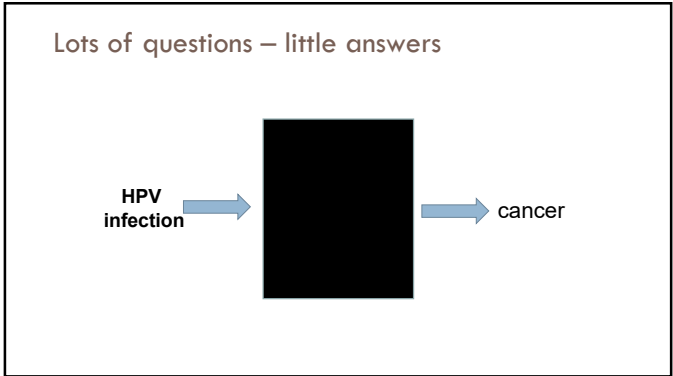
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HOW DO WE GET HPV?

D'Souza's 2007 case control study found several risk factors for HPV 16 positive OPSCC:

Behavior	HPV + OR* (95% CI)
Lifetime vaginal-sex partners >26	4.2 (2-9)
Lifetime oral-sex partners >6	8.6 (2-34)
Casual-sex partner	2.4 (1.2-4.7)
<18 yrs at first intercourse	2.1 (1.1-3.6)
Rare condom use	2.1 (1.1-4)
Sexual partner with h/o HPV associated cancer	3.9 (0.6-26)


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Are There Screening Tests?


The architecture of the tonsil and where cancer develops makes early visual or cytologic screening ineffective at this time.



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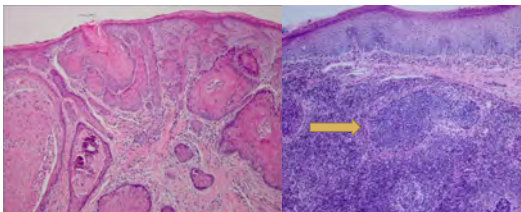
Are There Screening Tests?

"If you spread them out, they're 2 feet by 2 feet. You can't swab them. It's just not possible."
Marshall Posner, medical director for H&N cancer, Mt Sinai Medical Center



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Oral cancer vs Oropharynx cancer



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HYPERPLASTIC TONSILS



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Tonsillectomy Facts

- In the US, the number of tonsillectomies has declined significantly and progressively since the 1970s.
- 30 years ago, approximately 90% of tonsillectomies in children were done for recurrent infection; now it is about 20% for infection and 80% for obstructive sleep problems



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HPV and Saliva Testing

-  A saliva test can detect an oral HPV infection
-  Not useful since 85% of population "catches" at least one of the different HPVs that circulate
-  Most infections resolve in 1-2 years.
-  <1% of oral HPV infections will go on to develop oropharyngeal carcinoma

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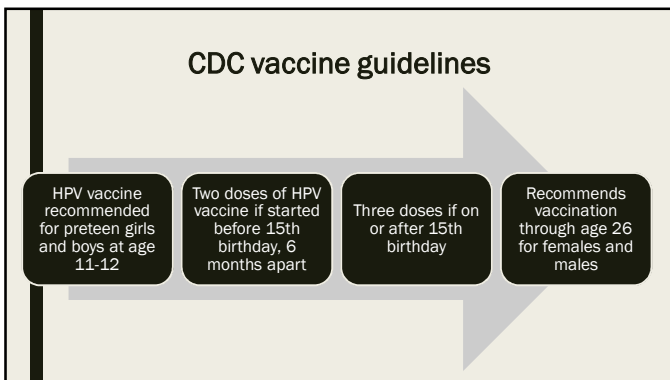
“There is **no** FDA-approved test to diagnose HPV in the mouth or throat. Medical and dental organizations do not recommend screening for oral HPV. More research is needed to find out if screening for oropharyngeal cancers will have health benefits. Talk to your dentist about any symptoms that could suggest early signs of oropharyngeal cancer.” CDC.gov

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HPV and Saliva Testing

- At this time we don't know how a + saliva test translates into cancer risk and patient management.
- Creates unnecessary anxiety
- We are uncertain what the natural history of oral HPV infection is and no management protocols have been established.

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Should Adults Age 27-45 Get Vaccinated?

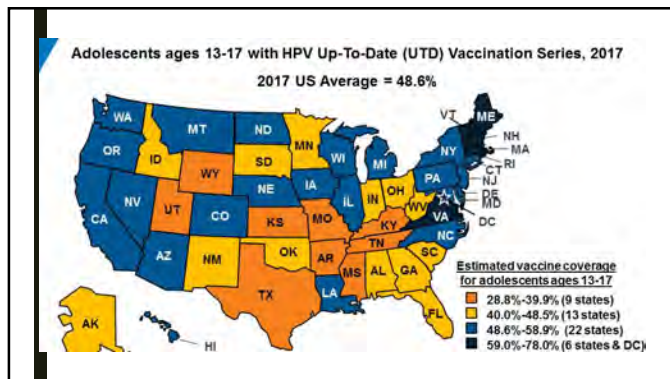
- Vaccination is not recommended for everyone >26 years. Some adults ages 27-45 may decide to get the HPV vaccine based on discussion with their clinician, if they did not get adequately vaccinated when they were younger. HPV vaccination of people in this age range provides less benefit, as more have been already exposed to HPV.
- Most sexually active adults have already been exposed to HPV, although not necessarily all of the HPV types targeted by vaccination. At any age, having a new sex partner is a risk factor for getting a new HPV infection. People who are already in a long-term, mutually monogamous relationship are not likely to get a new HPV infection.
- HPV vaccination prevents new HPV infections but does not treat existing infections or diseases.**

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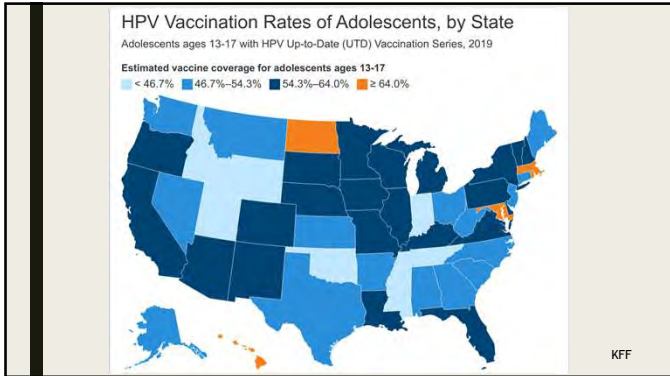
CDC vaccine guidelines

- Only the 9-valent HPV vaccine is now administered
- Covers HPV 6, 11, 16, 18, 31, 33, 45, 52, 58
- In the US, 64% of all HPV-associated cases are attributable to HPV16 or 18 and 10% attributable to 5 additional types: 31, 33, 45, 52, 58
- HPV 6 and 11 cause 90% of anogenital warts and most cases of recurrent respiratory papillomatosis

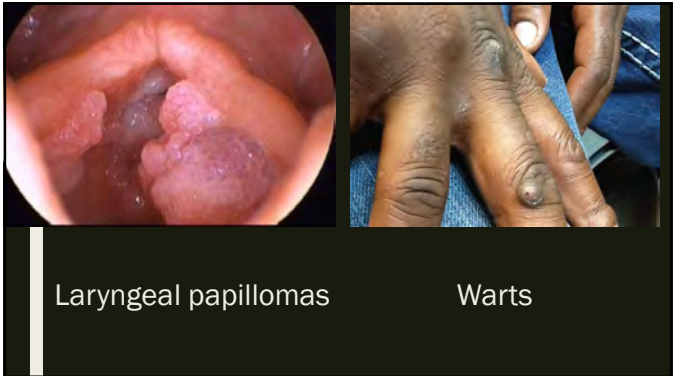
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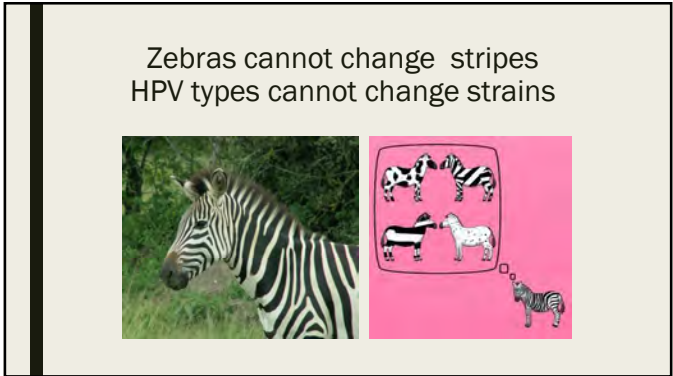
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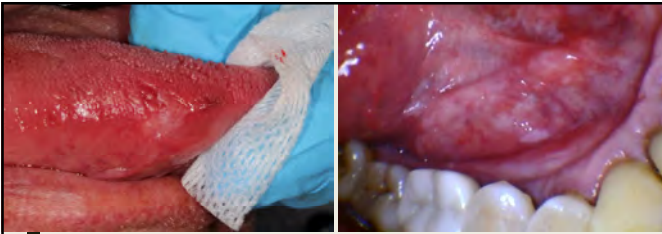
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This is a 26 year old African American male presented to the ER clinic at Howard .
 CC: "I have a toothache."
 Hey , do you notice the stuff growing out of your nose and on your lip.
 He tested positive for HIV.



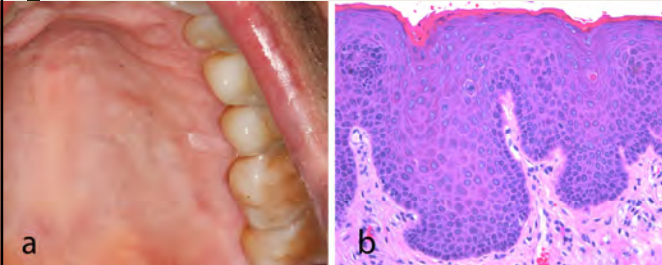
Condyloma Acuminata

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CAN YOU GET HPV CANCER IN THE ORAL CAVITY?

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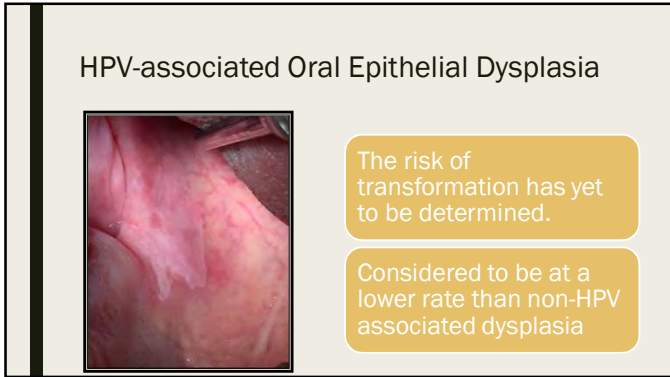
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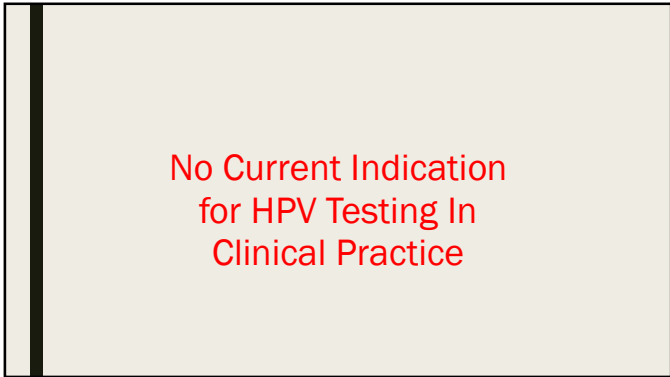
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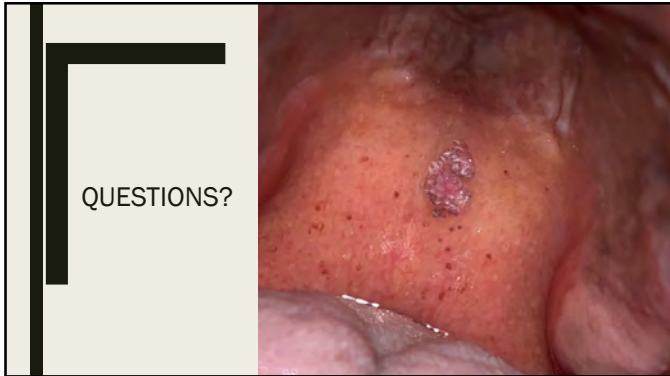
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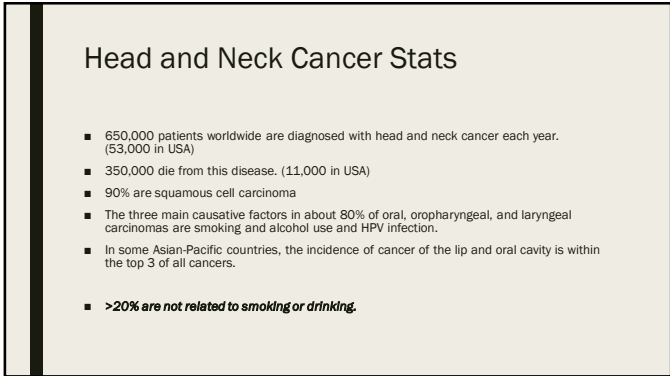
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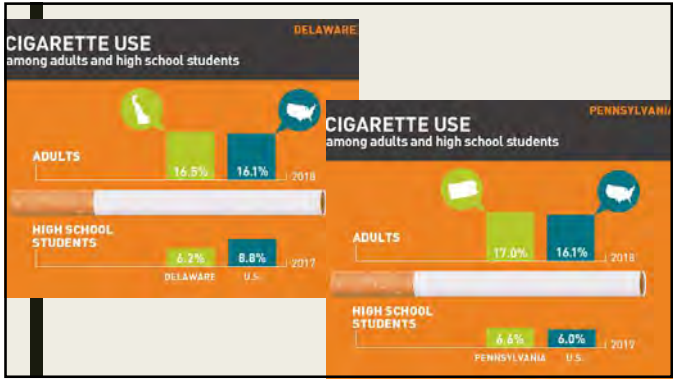
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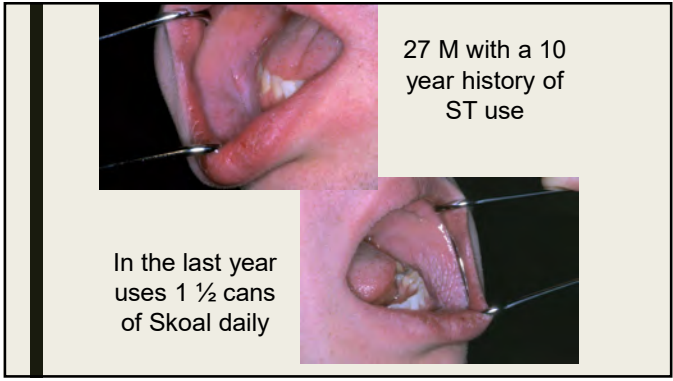
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Smokeless Tobacco

Smokeless tobacco keratosis has a much smaller risk of developing cancer than oral leukoplakia that develops in tobacco smokers.

Smokeless tobacco keratosis, after habit cessation, is routinely reversible.

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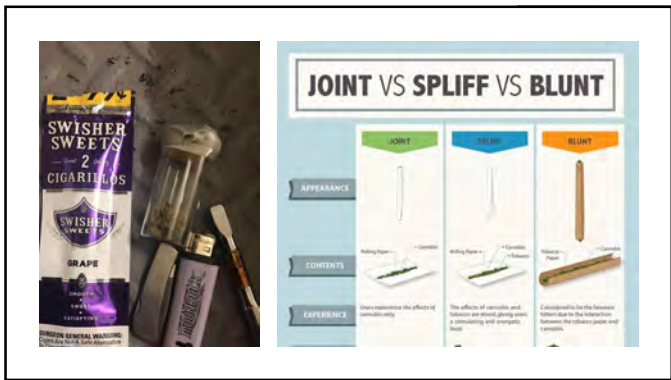
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Oral Submucous Fibrosis

- Chronic, irreversible disease associated with the use of betel nut, quid, nass, paan and other substances commonly used in India and other South-Central Asian countries
- Early signs include blanching of the mucosa
- Trismus
- About 7% malignant transformation rate

Chung CH et al. Oral precancerous disorders associated with areca quid chewing, smoking, and alcohol drinking in southern Taiwan. J Oral Pathol Med. 2005 Sep;34(8):460-6.

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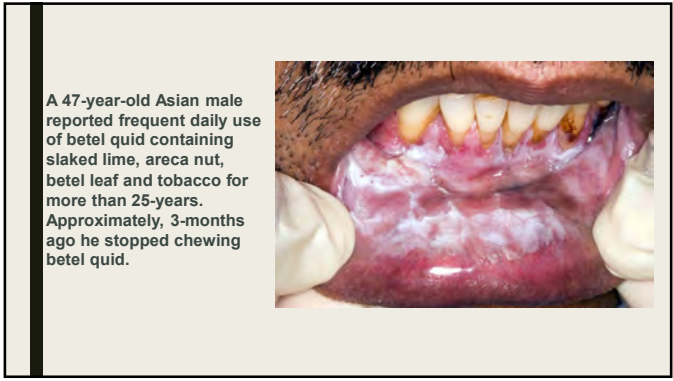
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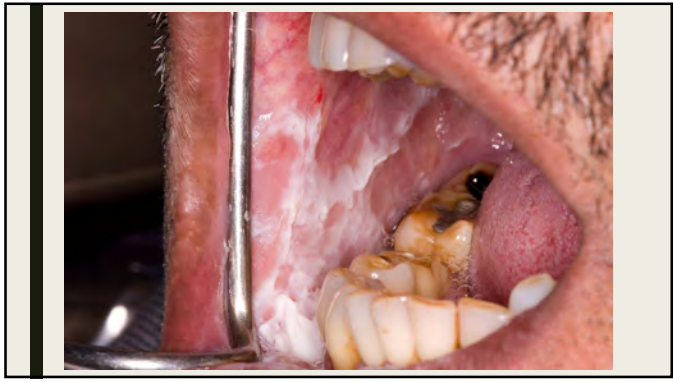
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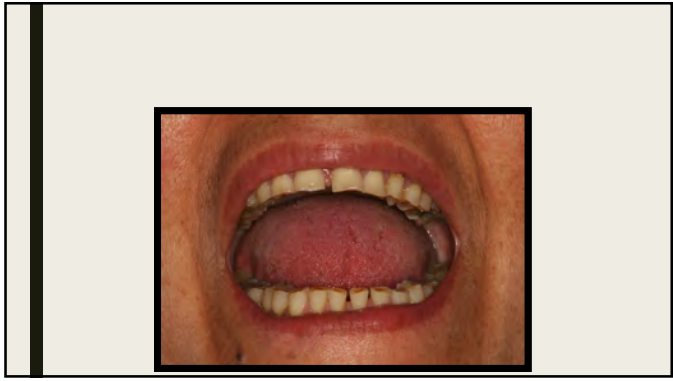
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What is Oral Leukoplakia?

- Leukoplakia is the most common *oral precancer (potentially malignant oral lesion)*
- 2.6% worldwide prevalence
- Lesions of long duration have a greater risk of malignant transformation than those of short duration
- 70-95% of oral leukoplakias will not progress to malignancy

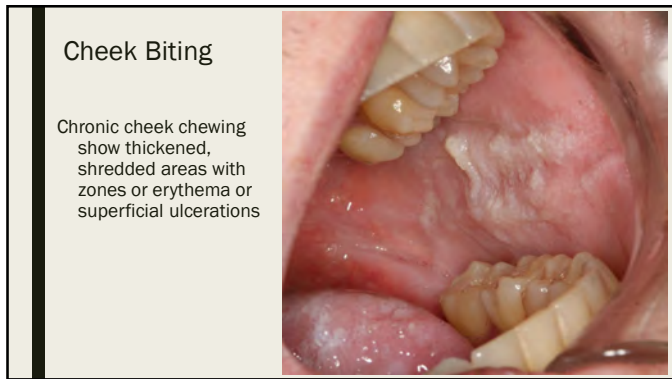
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What is NOT Oral Leukoplakia?

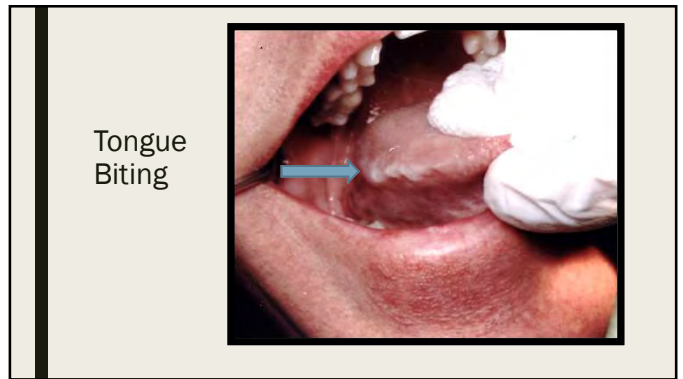
■ A clinical diagnosis dependent on the exclusion of other lesions that present as white plaques:

<i>cheek/tongue biting</i>	<i>candidiasis</i>
<i>lichen planus</i>	<i>leukoedema</i>
<i>drug reaction</i>	<i>tobacco pouch</i>
<i>keratosis</i>	
<i>aspirin burn</i>	<i>amalgam reaction</i>
<i>cinnamon reaction</i>	<i>geographic tongue</i>

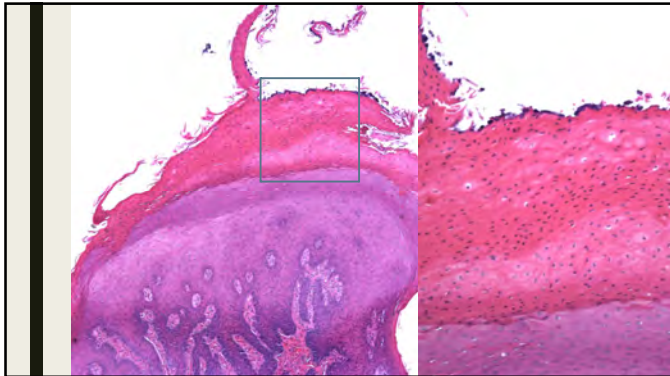
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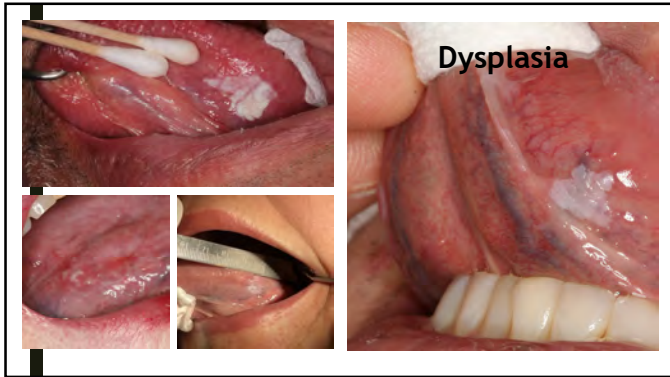


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Sites of Oral Leukoplakia

- Sites where leukoplakia are most likely to be associated with pre-cancer/cancer:
tongue, lip vermilion and floor of mouth
(account for 93% of all leukoplakia associated with dysplasia or cancer)

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 A clinical photograph of a patient's mouth, showing multiple white, well-demarcated patches on the gingiva and the lateral border of the tongue. The patient is wearing a dental retractor.

A 72-YEAR-OLD FEMALE WITH MULTIPLE WHITE AREAS ON THE GINGIVA AND LATERAL TONGUE

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What is your diagnosis?

- Oral Lichen Planus
- Oral Lichenoid Contact Reaction
- Mucous Membrane Pemphigoid
- Oral Candidiasis
- Lichenoid Dysplasia
- None of the above


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Proliferative Verrucous Leukoplakia

First described in 1980, it is a clinical mimic of OLP

Patients are often older females with no EtOH or tobacco history

Multifocal lesions with a propensity for the gingiva, palate, tongue, and buccal mucosa




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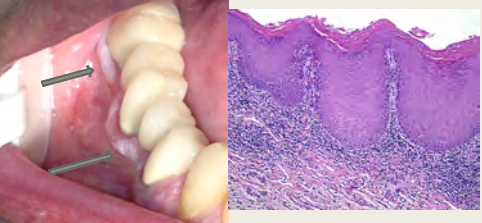
Proliferative Verrucous Leukoplakia

- Relentless progression to malignancy –
- Verrucous carcinoma
- Squamous cell carcinoma



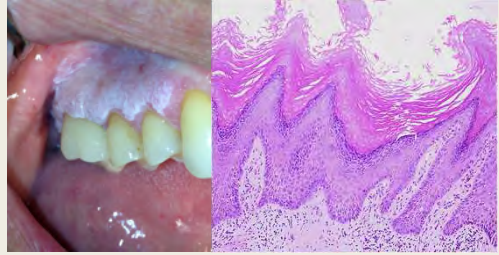
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A 56M – biopsy submitted as rule out lichen planus




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A 56M – biopsy submitted as rule out lichen planus

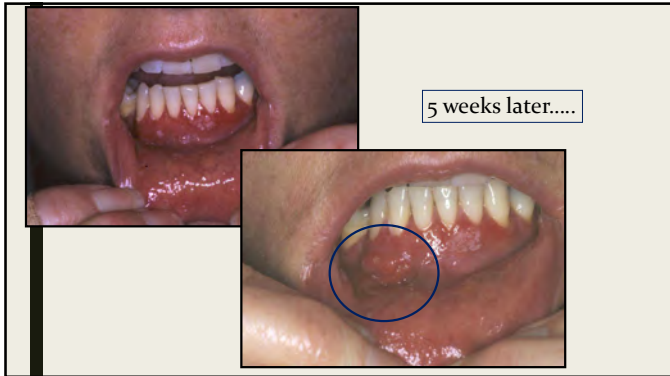


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PROLIFERATIVE VERRUCOUS LEUKOPLAKIA



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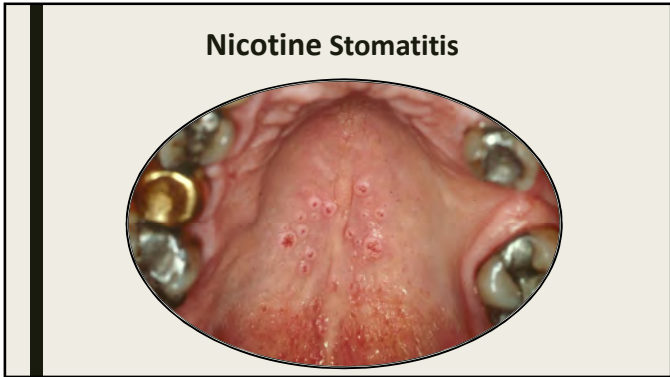
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Erythroplakia

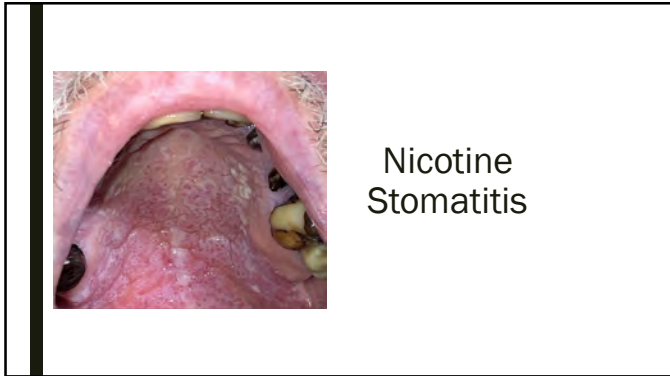
- A red patch that cannot be clinically diagnosed as any other condition.
- Must exclude other red lesions:

<i>mucositis</i>	<i>drug reaction</i>
<i>candidiasis</i>	<i>aphthae</i>
<i>herpes</i>	<i>non-specific ulcer</i>
<i>hemangioma</i>	<i>pyogenic granuloma</i>

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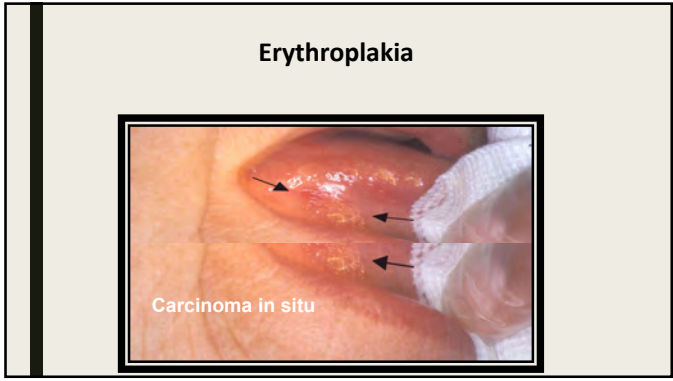


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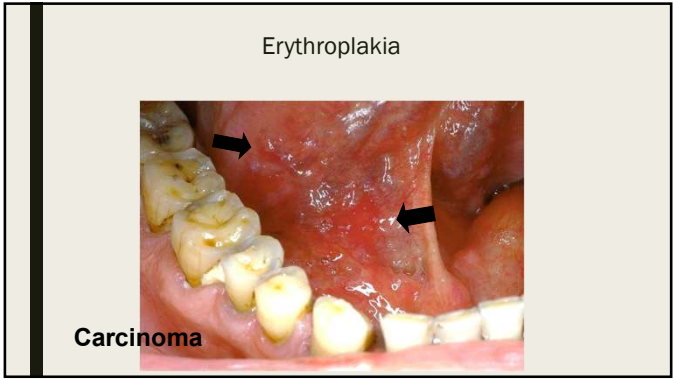
Erythroplakia

- Usually asymptomatic, and appears as a well-demarcated, erythematous macule or plaque with a soft velvety texture.
- Almost all (90%) of erythroplakia exhibit high grade dysplasia, carcinoma-in-situ, or invasive carcinoma.

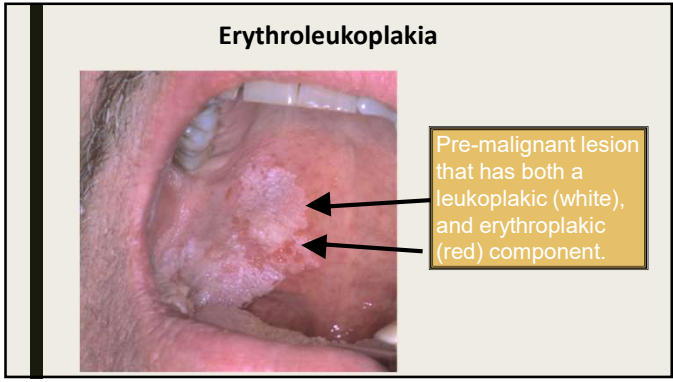
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Head and Neck Cancer Stats

5-Year
Relative Survival

66.9%

2011-2017

- 900,000 patients worldwide are diagnosed with head and neck cancer each year. (54,000 in USA)
- 400,000 die from this disease. (11,000 in USA)
- 90% are squamous cell carcinoma
- The three main causative factors in about 80% of oral, oropharyngeal, and laryngeal carcinomas are smoking and alcohol use and HPV infection.
- In some Asian-Pacific countries, the incidence of cancer of the lip and oral cavity is within the top 3 of all cancers.
- >20% are not related to smoking or drinking.

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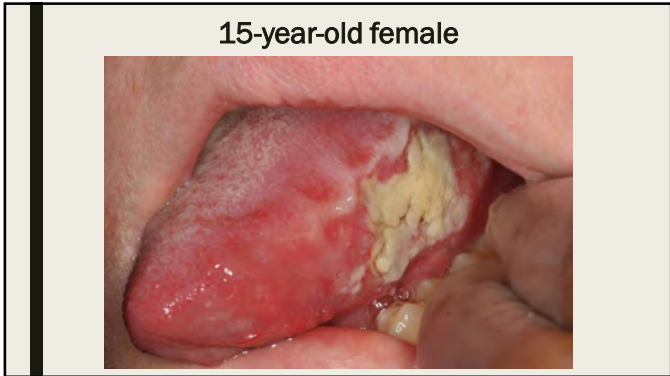
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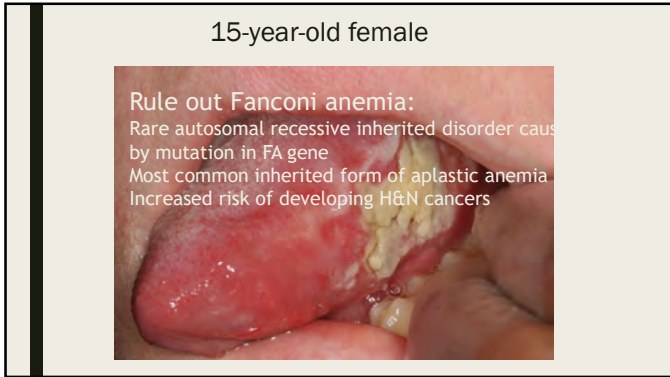
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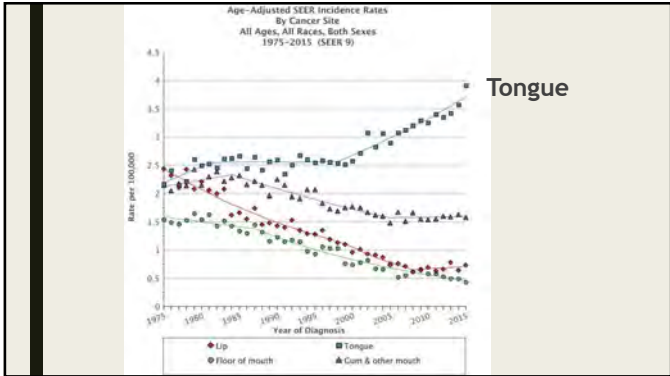
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Why?

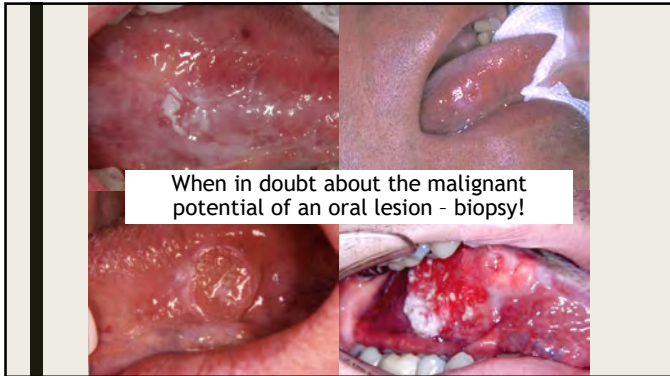
....is the tongue becoming the most frequent site of OSCC?

....is the tongue the overwhelming site of OSCC in young patients?

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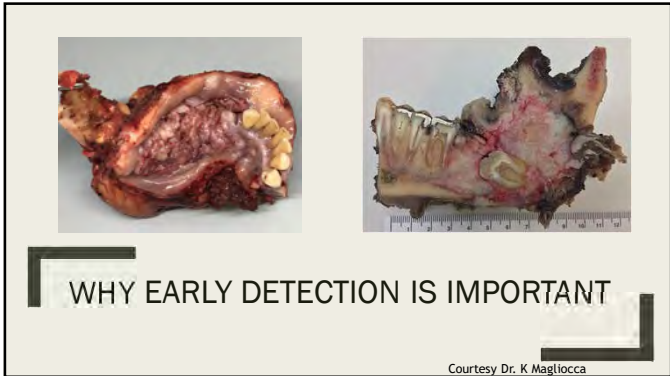


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When in doubt about the malignant potential of an oral lesion - biopsy!

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WHY EARLY DETECTION IS IMPORTANT

Courtesy Dr. K Magliocca

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Covid Tongue?????!!



American Academy of Oral & Maxillofacial Pathology

Official Statement on 'COVID tongue' from the American Academy of Oral and Maxillofacial Pathology
 This statement is in response to a recently circulated article published in NBC News: <https://www.nbcnews.com/health/health-news/covid-tongue-oral-lesions-ncna102786> documenting a series of furanemia and oral mucosal findings in individuals diagnosed with COVID-19. The oral mucosal findings reported in this study have been categorized as 'COVID tongue'. The authors included two intraoral photographs in this report, which have been reproduced below. The left image documents revealed tongue. Crevasses over the scalloped grooves on the lateral surfaces of the tongue, which may be caused by rubbing of the tongue against adjacent teeth. The right image documents geographic tongue, also known as benign migratory glossitis or erythema migrans. Smooth, depigmented and central regions with white, tan, or yellow-colored borders, which may be serpentine or scalloped. Areas of geographic tongue usually disappear and reappear on both sides. They are benign and patients are typically asymptomatic, although some people may endorse a burning sensation associated with certain foods and beverages.



There is no clear causal association between the oral findings reported here as 'COVID tongue', and COVID-19 infection. The oral lesions described in this study represent exceedingly common oral conditions that are not specific to COVID-19 infection. As our knowledge base continues to expand, new data may support an association between oral mucosal pathologies and COVID-19 infection. To date, some potential COVID-19 associated oral lesions and complaints include but may not be limited to: aphthous-like oral ulceration, atrophic tongue, and dyadic-like (leopard-like) lesions.

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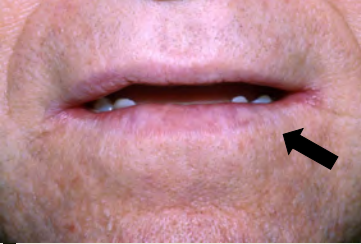


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Actinic Cheilitis



- The earliest clinical changes include atrophy of the lower lip with blotchy pale areas.
- There is blurring of the interface between the vermilion and the skin

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Actinic Cheilitis



As the lesion progresses, rough, scaly areas develop. Chronic focal ulcers may develop and last for months

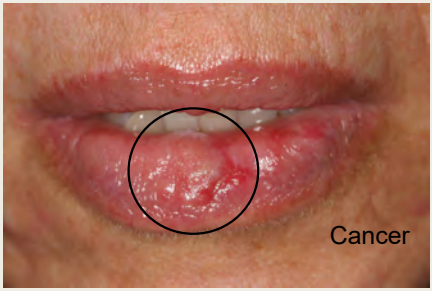
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Actinic Cheilitis



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Actinic Cheilitis



Cancer


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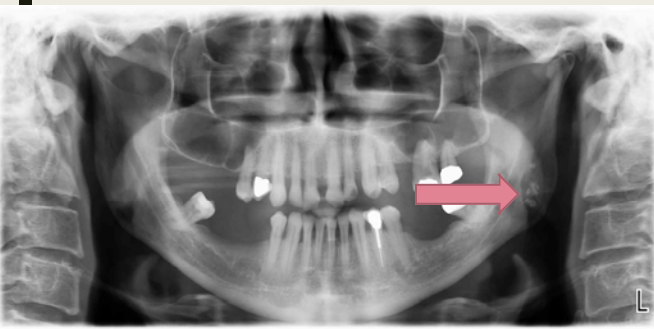
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Actinic Cheilitis

- Educate your patients!!
- Sunscreen
 - ▶ Sunscreen
 - ▶ Sunscreen



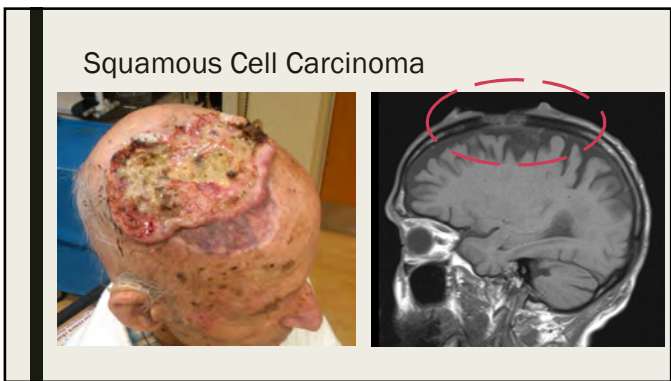
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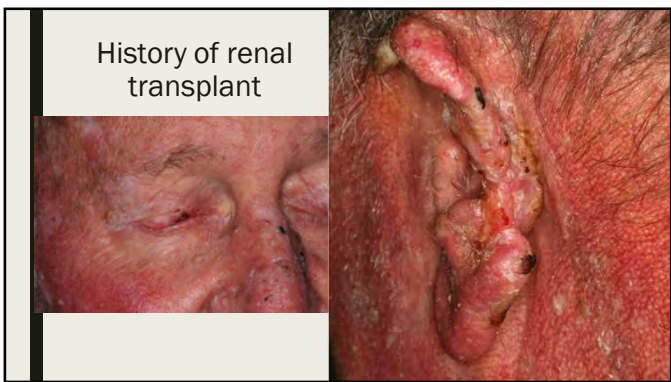
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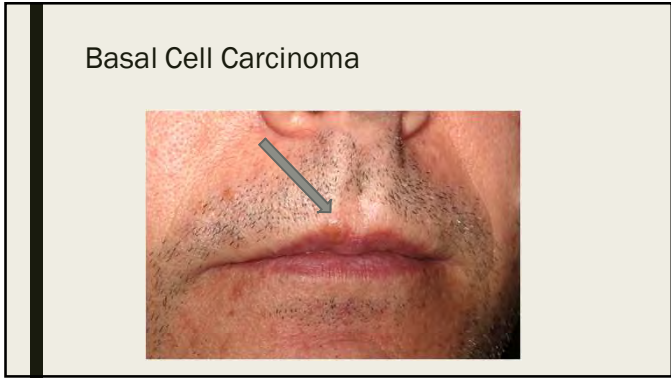
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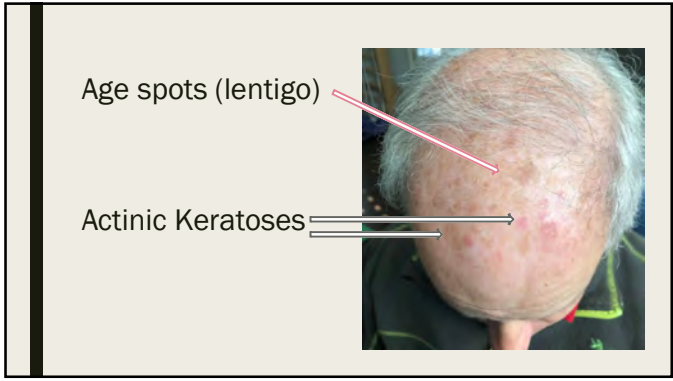
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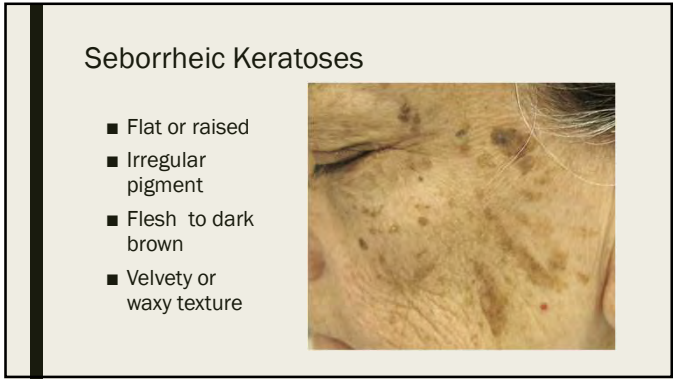
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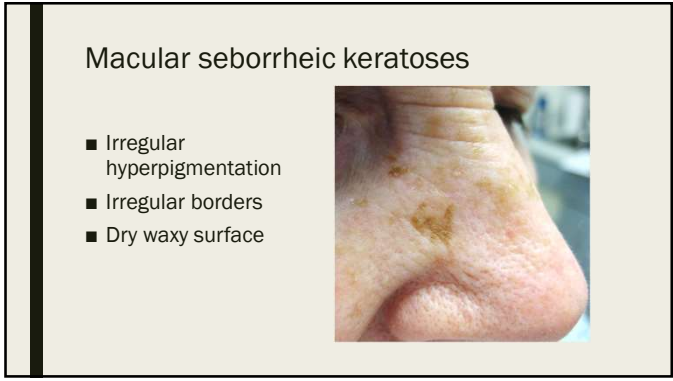
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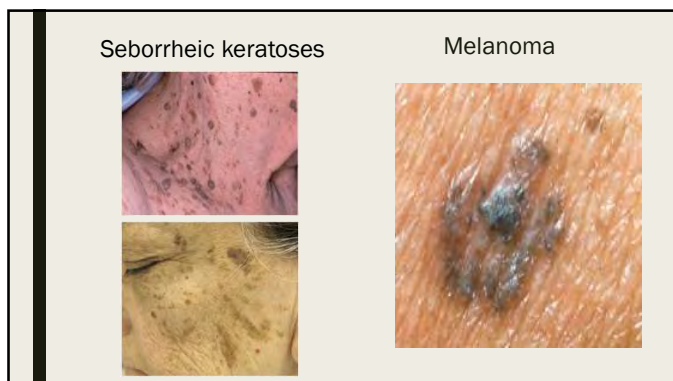
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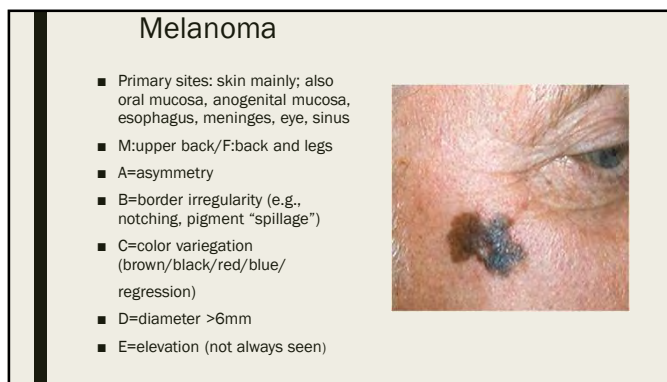
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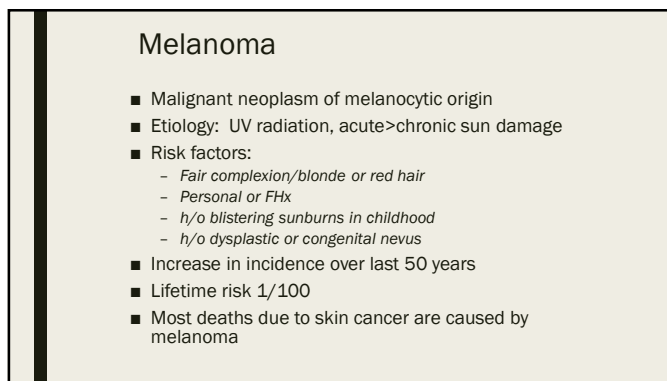
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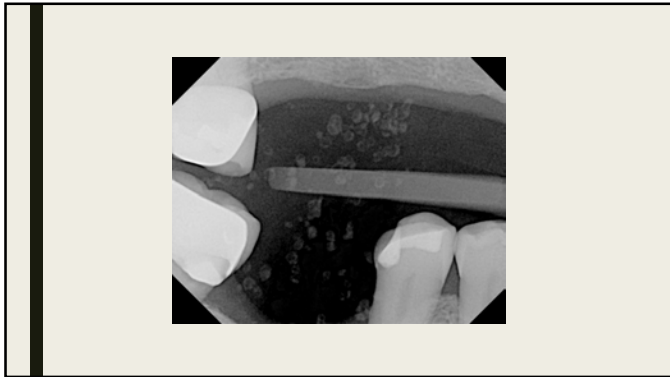
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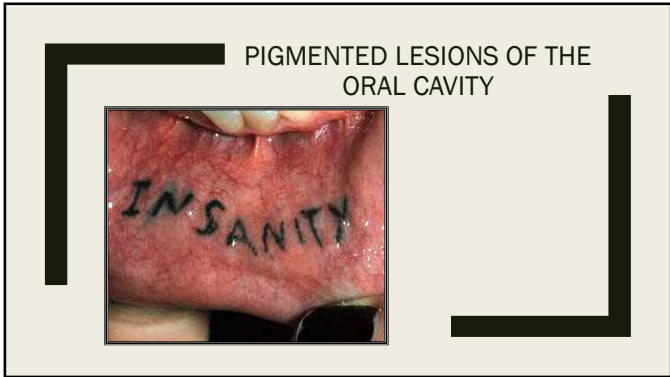
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Physiologic Pigmentation



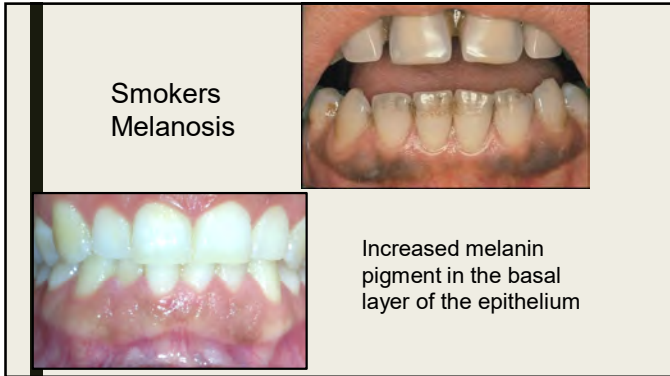
Physiologic pigmentation of the oral mucosa is clinically manifested as multifocal or diffuse melanin pigmentation with variable prevalence in different ethnic groups. Melanin is normally found in the skin of all people.

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Physiologic Pigmentation



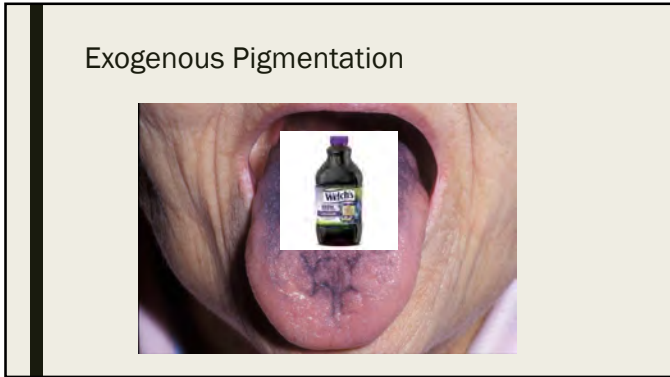
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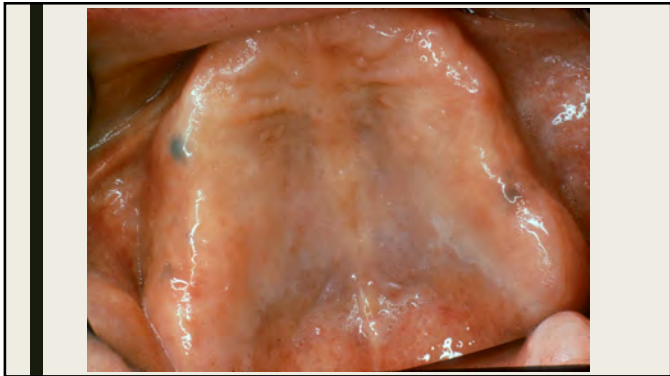
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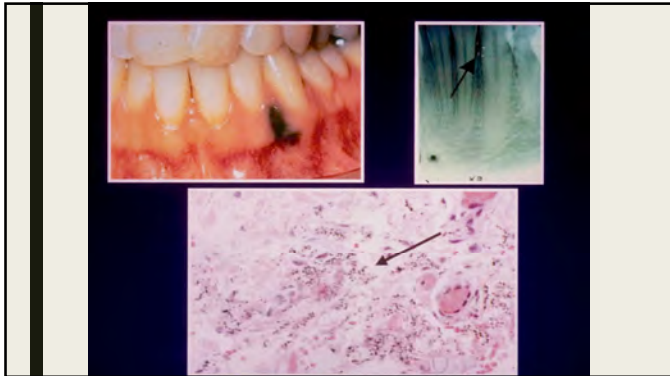
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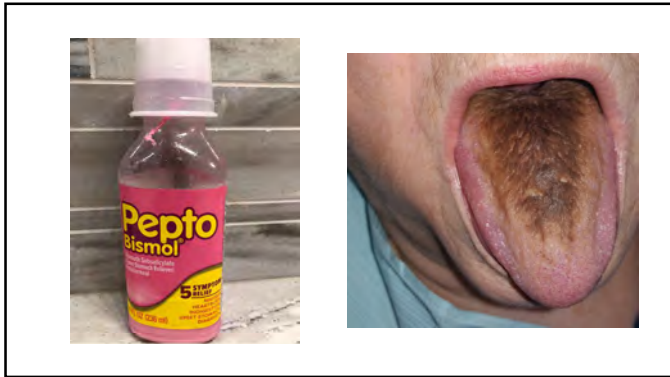
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Hairy Tongue



- Penicillin, tetracycline, and other antibiotics can cause a hairy tongue.
- H2O2, Pepto-Bismol
- Crest Prohealth

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- 44 y/o Senegalese woman who performed her own gingival tattoo using 8 needles bunched together and using the flame and soot from burning peanuts


Cultural practice in Senegal and Mauritania
Courtesy Dr Cox

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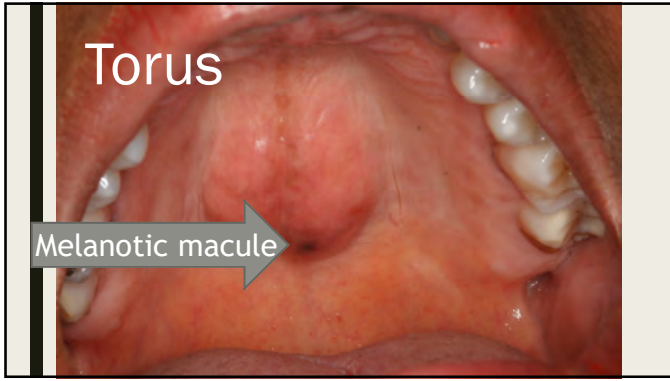
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Melanotic Macule



- Unknown etiology which represents a focal increase in melanin deposits
- Occurs at any age
- Vermilion zone of the lower lip is the most common site followed by buccal mucosa and palate

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When to Biopsy a Pigmented Lesion

- Any new pigmented lesion without known etiology
- Any patient with a history of melanoma
- Any pigmented lesion that has increased in size

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Questions?

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