

وَقُلْ رَبِّ زِدْنِي عِلْمًا



# RESPIRATORY SYSTEM

## HAYAT BATCH



SUBJECT : فارما

LEC NO. : Lec 5

DONE BY : Anas and mass

## YouTube Videos

اضغط على الكلام المكتوب باللون الأزرق لتنتقل مباشرة الى المحاضرة

**ملاحظة:** يوجد تقاطع كبير بين ادوية الربو و ادوية COPD

و اغلب المصادر بتشرح الربو اول لهيك رح احط فيديوهات من شرح الربو تستفيدو منها دراستكم لل COPD

الموضوع	الفيديوهات المطلوبة 1	الفيديوهات المطلوبة 2	الفيديوهات المطلوبة 3
Treatment of COPD lec 1	احضر هذا الفيديو كامل رح يشرح موضوع الربو و ال COPD الفيديو رهيب يب	للي بحب شرح فودة احضروا هذا الفيديو من الدقيقة 36 الى الساعة و 13 دقيقة اما اذا بتحضره كامل بتكون خلصت الربو يعني درست محاضرتين	

شرح عبدالمتعال فودة



# Lecture 5: Treatment of bacterial respiratory infections 1

Respiratory system  
Second year  
Medical school  
Hashemite University  
2<sup>nd</sup> semester 22/23  
Sofian Al Shboul, MD, PhD.

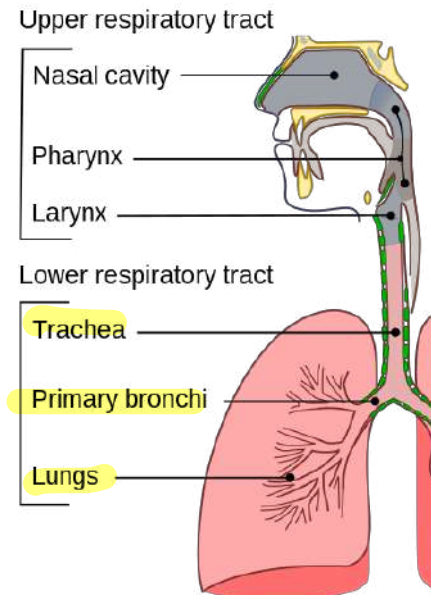




# Respiratory tract

Anything below sternal angle is lower airways

- ✓ the **upper** airways : **above the sternal angle** (**outside of the thorax**), above the vocal folds, or above the cricoid cartilage
- ✓ and **lower** airways: **trachea, bronchi** (primary, secondary and tertiary), **bronchioles** (including terminal and respiratory), and **lungs** (including alveoli)
- ✓ **The larynx is sometimes included in both the upper and lower airways**





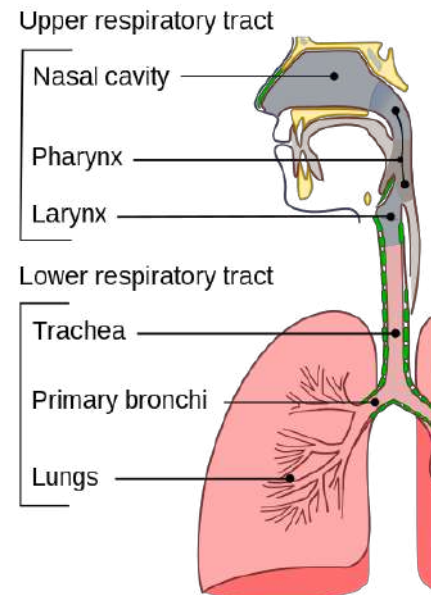
# Respiratory tract infections

- Divided to:

I. **Upper** Respiratory tract Infection (URTI)  
(common cold, pharyngitis, epiglottitis, & otitis media etc.)

II. **Lower** Respiratory tract Infection (LRTI)  
(bronchitis, bronchiolitis & pneumonia)★

هدول بس يلي بدنا اياهم ↩





It is very critical to define infections if it is upper or lower because treatment is different

# Upper respiratory tract infection (URTI)



- **Usually** self-limited irritation and swelling of the upper airways with associated cough and no signs of pneumonia

When there is pneumonia, you have upper and lower respiratory tract infection so treatment changes

- probably the most common infections in the world.

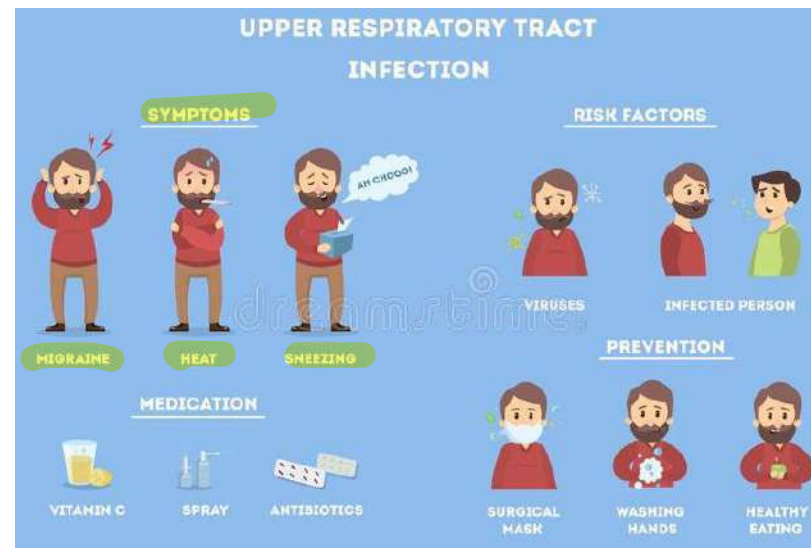
Penicillins are preferred for treatment of URTIs

- **(Flu)** Common cold: rhinovirus, influenza virus.

Might bacterial or viral infection

- **Bacteria:** sudden onset pharyngitis presentations (strep throat): Group A streptococcus (*Streptococcus pyogenes*)

الدكتور حكا مهم نميز شو المرض يلي self limiting و المرض اللي يحتاج antibiotic  
 هم من اكثر الinfections يلي بنعطى فيهم antibiotic drugs حوالين العالم



Viral infection is usually self-limited, however it doesn't always decay. You must give antibiotics in bacterial infections



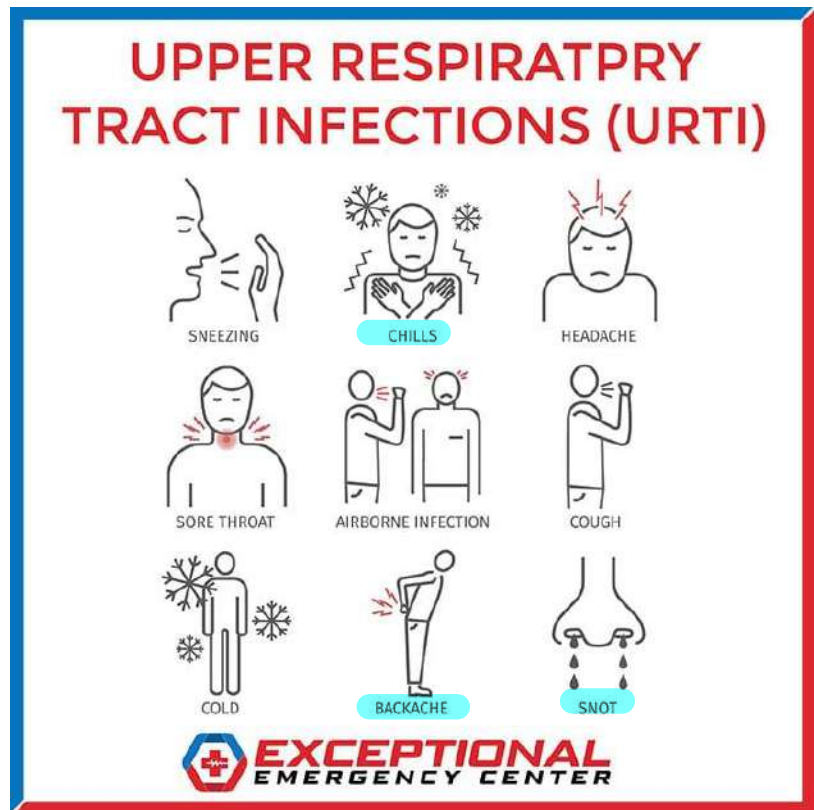
بهمنا نعرف ال symptoms عشان نعرف نتعامل مع ال case scenario بالامتحان

# Upper respiratory tract infection (URTI)

- Cough
- Sore throat
- Runny nose
- Nasal congestion
- Headache
- Low-grade fever
- Facial pressure
- Sneezing

➤ The onset of symptoms usually begins one to three days after exposure and lasts 7–10 days, and can persist up to 3 weeks. → which is fine

بس انه مش أشهر  
 If it happens Once a year , it is fine  
 اكثر من مرة بالسنة اتحول ل chronic infection و صار بدو غير treatment  
 URTI pharmacological management if its viral = self limited ( only supporting medicines (pain killers) but we should not take antibiotics  
 لانه رح يضرنني اكثر ما انه رح يفيدني antibiotics





# Penicillin → 3 Groups

- **Penicillin G**: Gram-positive and -negative cocci, gram-positive rods and anaerobes.

(لازم تعرف الاسماء)

**broad-spectrum penicillins (gram-negative bacilli)**: second generation (ampicillin, amoxicillin), third generation (carbenicillin) and fourth generation (piperacillin)

2nd gen → is widely used , 3rd, 4th are less used

- All penicillins have relatively short half-lives and require frequent administration.

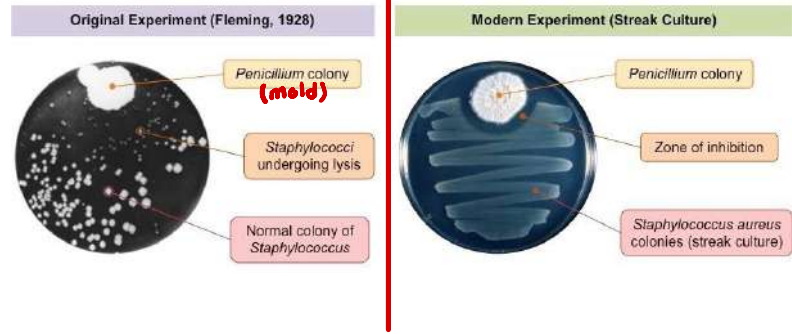


Piperacillin considered as 2nd generation penicillin that is active against gram negative cocci

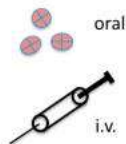
This statement is wrong because it is very new (4th generation)

هذه لعنه الاساسية

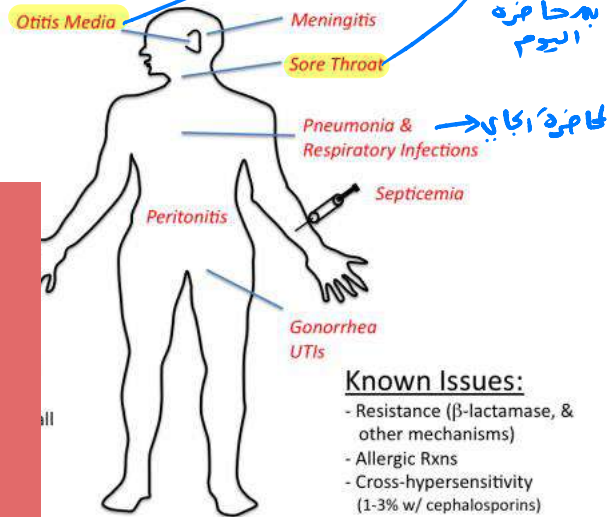
وهي ال mimicking



Routes:



Penicillin Uses



Known Issues:

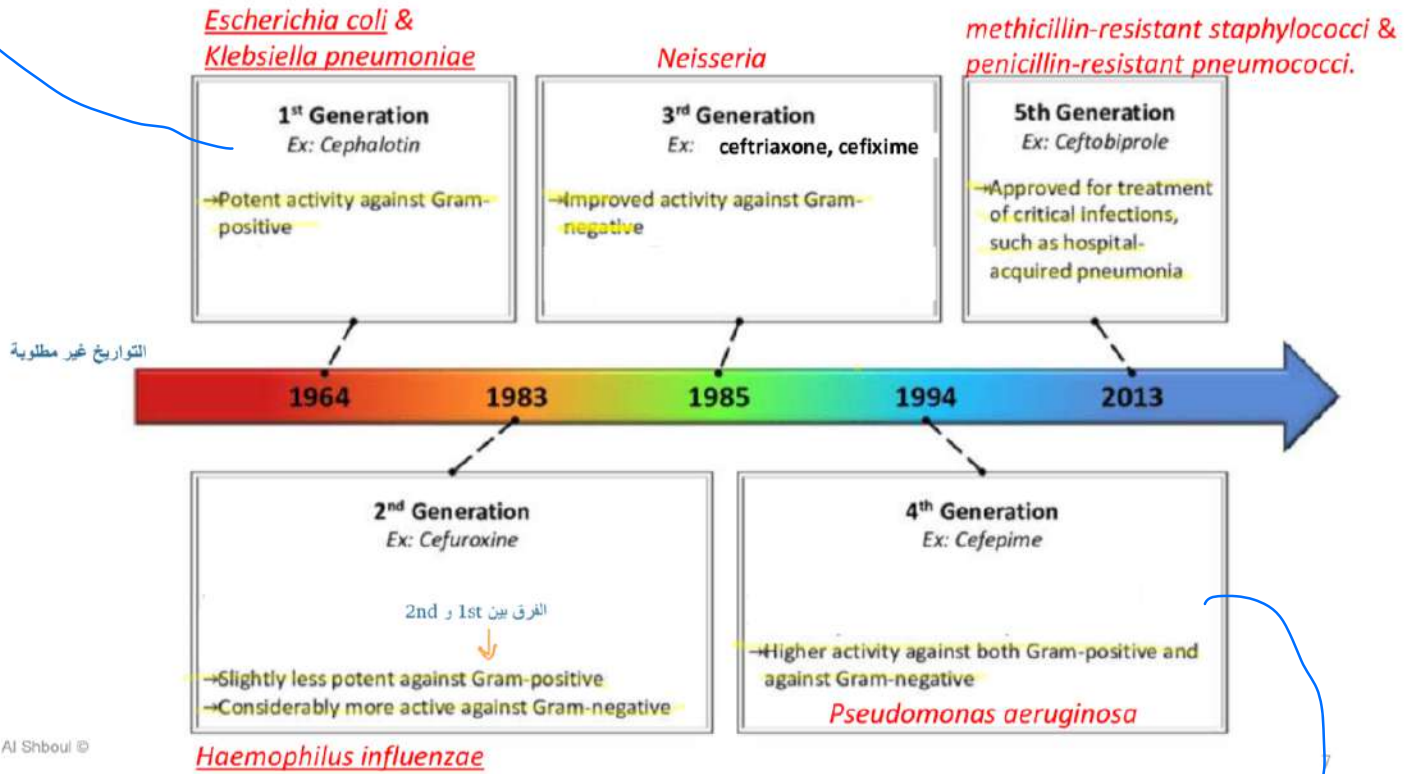
- Resistance ( $\beta$ -lactamase, & other mechanisms)
- Allergic Rxns
- Cross-hypersensitivity (1-3% w/ cephalosporins)





# Cephalosporins

يتم تعريف كل drug بgeneration و its activity و البكتيريا الفعالة ضدها



Very wide spectrum



# Macrolide

حسنة الجملة لاجها توضيح :

( معناها انه كوسيات against G+ve وال G-ve حتى كثير )

- Gram-positive bacteria and limited Gram-negative bacteria
- Antimicrobial spectrum is slightly wider than that of penicillin >> common substitute for patients with a penicillin allergy.
- Unlike penicillin, they are effective against Legionella pneumophila, mycoplasma, mycobacteria, and chlamydia.

الفردات بينه وبين ال Penicillins

• Azithromycin, Clarithromycin and Erythromycin → كثير مستعملين



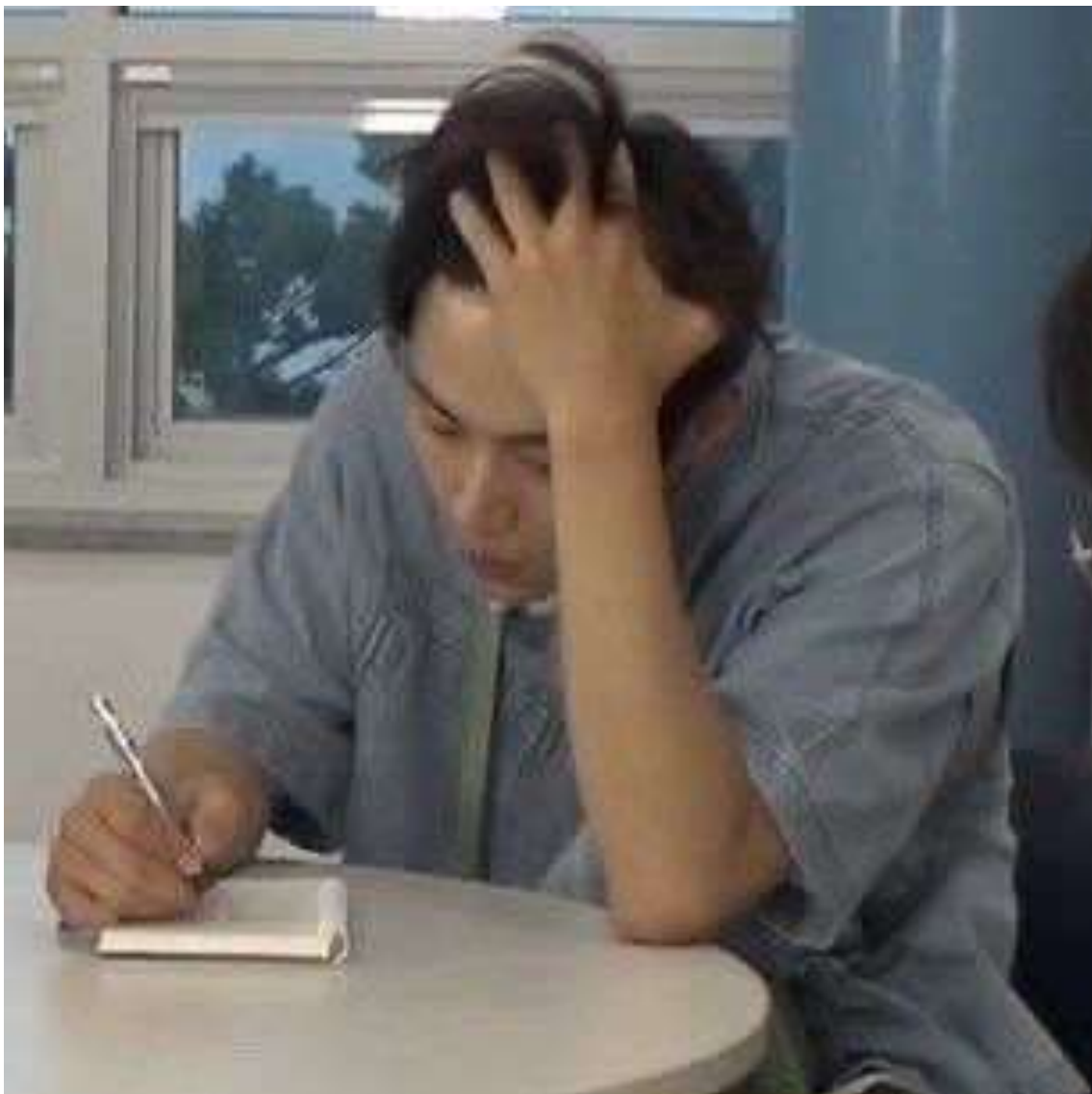


# Respiratory tract infection

بمَهِّه الدكتور كل disease و شو treatment يشكل اساسي

1. Rhinitis (common cold)
2. Pharyngitis
3. Sinusitis
4. Otitis Externa
5. Acute Otitis Media (Ear Infection)
6. Diphtheria
7. Epiglottitis
8. Laryngitis and croup
9. bronchitis and bronchiolitis
10. Pneumonia

Sanjay Al Shhadi ©





It is viral infection so there is no need for antibiotics Because antibiotics are used to reduce symptoms



# Upper respiratory tract infection (URTI):

You should know these informations by default

## Rhinitis

كثير عصبين بالحياء العلية

- Known as common cold → very common symptoms
- Cough, headache, fever (not often or mild), sore throat and runny nose (rhinorrhea)
- Symptoms begin 2-3 days after infection
- Mainly viruses (Rhinoviruses)

### Pharmacological management:

1. Dextromethorphan → Antitussive → suppress cough
2. Anti-histamines
3. Pain-killers
4. Decongestants

الحكم انه ماني antibiotics

خبروي ال Patient ها لاخذ antibiotics في حاله زي صلبه

لانه هاد فيروس مش بكتيريا

**Treat Symptoms of the Cough with:**

- Dextromethorphan
- Antihistamines
- Honey
- Warm Liquids

**Treat Symptoms of a Sore Throat by Gargling Salt Water:**

**Treat Symptoms of Aches, Pains, & Fever with:**

- Ibuprofen (For pain)
- Acetaminophen (Panadol)

**Treat Symptoms of Nasal Congestion with:**

- Saline Nasal Spray
- Humidified Air
- Topical or Oral Decongestants
- Antihistamines in combination with decongestants or guaifenesin



## Table is review for the slide . بعطي المعلومات الاساسية



Disease	Symptoms	Pathogens (common)	Pharmacotherapy
Rhinitis	Cough, headache, fever*, sore throat and rhinorrhea	Viruses	Supportive: Dextromethorphan, Anti-histamines, Pain-killers, Decongestants.

الجدول  
مخصص للمراجعة



# Upper respiratory tract infection (URTI):

Bacterial or viral infection

## Pharyngitis

بعد ما تقرأ السلايد تعال هون:

له صلاح بالخمطان الـ اكتور حكا

اذا جاب سؤال عن الـ Pharyngitis (انه شوعلاجه)

وكان حاطه باليارت amoxicillin / Penicillins أو اي اسم Penicillin ثاني

بتخاره هو بالاول For First choice (دبغياً ما تنسى اذا كان حاطل الـ Case

انه عنده حساسية من الـ penicillin)

- Inflammation of the throat (pharynx)
- Symptoms usually last 3–5 days
- Complications: sinusitis and acute otitis media

Causes

• **Streptococcus pyogenes:** Drug of choice هو الـ

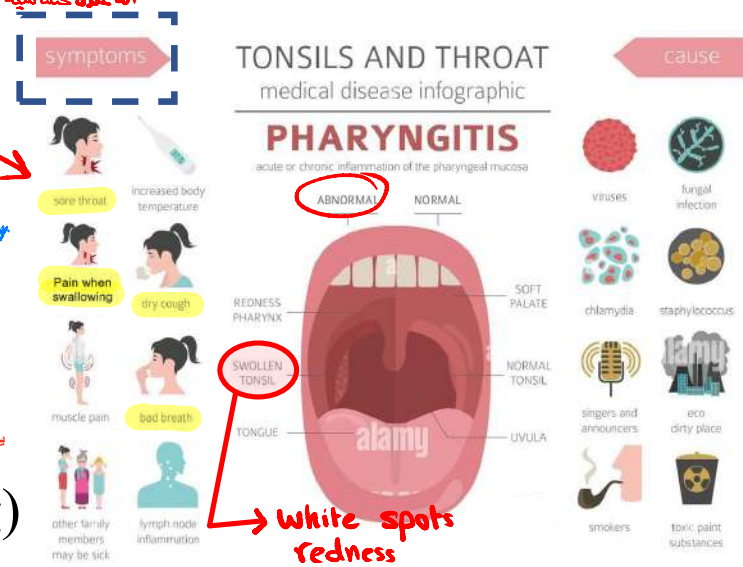
Penicillin or Amoxicillin (Oral) >> Cephalosporin (Cephalexin) >> Macrolide (Azithromycin)

• **Viral:** self-limiting

Because there is inflammation, pain

Conservative + oral CS (1-2 for pain on swallowing) + lidocaine wash + NSAIDs

• **Candida albicans:** clotrimazole



White spots  
Redness  
Swollen

Acetylsalicylic acid is contraindicated in pediatric patients owing to the risk of Reye syndrome



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← هاد مضمين للـ Pharyngitis

Pharyngitis usually is bacterial infection and it will require some of antibiotics intervention

انه اذا فكرته bacterial و هو viral و ما شخصته صح انت هون دخلت بدوامه تانية و بصير sinusitis و otitis media

So you need to deal with it

Sometimes we give for viral infections antibiotics in case of complications or predisposing factor



# Upper respiratory tract infection (URTI):

## Sinusitis الجيوب

إذا ما تعاملت صح مع ال URTIs يتحول ل sinusitis

### ❖ Predisposing factors:

URTI, nasal septum deviation, tooth extractions, and smoking  
Allergy (AR), cystic fibrosis and immunodeficiency.

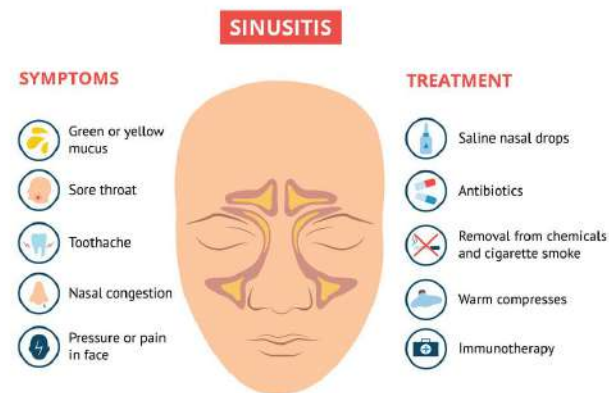
❖ Nasal congestion (headache or toothache), facial swelling, tenderness, discharge (green or yellow color = bacterial infection or clear = allergy)

viral / allergic غير ذلك  
No antibiotics

❖ Antibiotics not recommended in those with mild/moderate + for first 7-10 days

❖ Viral → منتركة → self limited

❖ Bacteria: Streptococcus pneumoniae, Haemophilus influenzae and Streptococcus pyogenes (uncommon)



Penicillins are the first choice (usually)



# Upper respiratory tract infection (URTI): Sinusitis

## ❖ Decongestants:

- 1st line*
- ❖ Amoxicillin/clavulanic acid >> doxycycline or cephalosporins *3rd* (cefixime) >> fluoroquinolone *3rd line* (levofloxacin or moxifloxacin)
  - ❖ Macrolides (clarithromycin or azithromycin) are **not recommended for empiric therapy**

يفضل ما تبلىش فيهم عندك خيارات تاتيه

- ❖ Chronic: Intranasal saline, Intranasal corticosteroids, Oral corticosteroids and antibiotics (limited evidence, after culture)

ما بضل اخذ antibiotics عشان ما بصير في resistance and inhibition to normal flora sinusitis here و اهم سبب هو علاج المشكله لانه ال is symptom (because it is the problem of chronic continuous resistance sinusitis )

Public Health Ontario | Saint Catharines Ontario | Choosing Wisely Canada

## SINUS INFECTION

Let's talk...

**FACT**

- Most cases of sinus infection (sinusitis) are caused by viruses.
- Antibiotics do not work against viruses.
- Green or yellow discharge forms with inflammation. It can be found in both bacterial and viral infections.

**ANTIBIOTICS ARE NOT NEEDED IN MOST CASES\***

**NO ANTIBIOTICS VS ANTIBIOTICS**

9 of 10 people feel better within 1-2 weeks, WHETHER OR NOT they use antibiotics.





Disease	Symptoms	Pathogens (common)	Pharmacotherapy
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Sinusitis	Nasal congestion, facial swelling, tenderness, discharge (colour?)	<u>Strep. Pneumonia</u> and <u>H. Influenza</u> .	❖ Amoxicillin/clavulanic acid ^^ > doxycycline or cephalosporins <sup>3rd</sup> (cefixime) ^^ > fluoroquinolone (levofloxacin or moxifloxacin) ❖ Chronic: Intranasal saline, Intranasal corticosteroids, Oral corticosteroids and antibiotics (limited evidence, after culture)



Inflammation in middle ear-> fluid retention  
-> bacterial grow

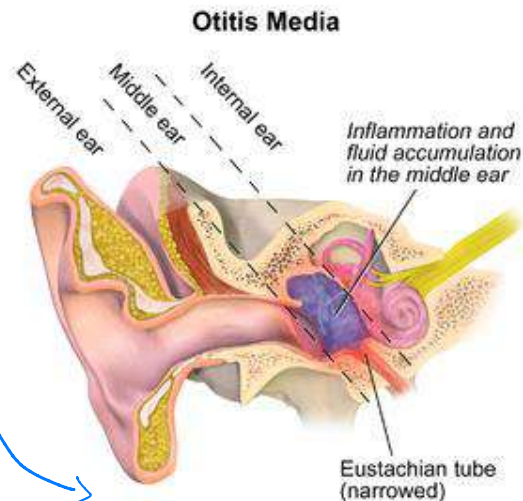


# Upper respiratory tract infection (URTI): **Acute Otitis Media (Ear Infection)**

↳ it is not an upper respiratory tract infection, but it is a common complication for URTI

- Inflammation of the Eustachian tubes and buildup of fluid in the middle ear >> possible bacterial growth in the fluids
- **Ear pain (otalgia), fever, sensation of fullness, irritable, tug on the involved ear, difficulty sleeping (children)**
- **Untreated or severe infections >> eardrum rupture or mastoiditis and CNS involvement.**
- Streptococcus pneumoniae, haemophilus influenzae and Staphylococcus aureus

It will spread (it will not stick to ear by itself)



مثلا : كان عنا مريض عنده pharyngitis/ tonsillitis وتركاناه و صار severe وانتقل لالذن و عمل otitis media ورجعنا تركناه و صار عنده CNS involvement (يعني كنا بموضوع و صرنا بموضوع ثاني)

Empiric therapy →

لا نضم بطبوا  
معظم البكتيريا  
بيك ينقل حاي  
infections ال

1st line → Amoclan:

- **Amoxicillin-clavulanate >> cephalosporin (Cefuroxime) >> doxycycline or macrolide (Azithromycin)**

بس مش بالضرورة يكونوا فعالين ضد البكتيريا يلي عملت otitis media  
فا اذا اعطيت للمريض دواء (اموكلان) و ما استفاد عليه ضروري اعمل culture و اشوف شو هي البكتيريا المسببه واعطيه دواء مناسب  
او بحوله على دواء ثاني بس اهم اشئي اني ما اطنشه و اقول بطيب لحاله

bacterial infections as fast as possible يكون التعامل من ال



Disease	Symptoms	Pathogens (common)	Pharmacotherapy
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Pharyngitis	<b>Sore throat</b> , difficulty speech and swallowing, swollen tonsils and <b>bad breath</b>	<u>Strep. Pyogens</u> : Penicillin/Amoxicillin (Oral) <sup>^^</sup> > Cephalosporin (Cephalexin) ^^ > Macrolide (Azithromycin) <u>Viral</u> : self-limiting: conservative + oral CS (1-2 for pain on swallowing) + lidocaine wash + NSAIDs <u>Candida albicans</u> : clotrimazole	
Sinusitis	Nasal congestion, facial swelling, tenderness, discharge (colour?)	<u>Strep. Pneumonia and H. Influenza.</u>	❖ Amoxicillin/clavulanic acid ^^ > doxycycline or cephalosporins <sup>3rd</sup> (cefixime) ^^ > fluoroquinolone (levofloxacin or moxifloxacin) ❖ Chronic: Intranasal saline, Intranasal corticosteroids, Oral corticosteroids and antibiotics (limited evidence, after culture)
Acute Otitis Media	Ear pain (otalgia), fever, sensation of fullness	<u>Strep. Pneumonia, H. Influenza and Staph. aureus</u>	Amoxicillin-clavulanate <sup>line 1</sup> ^^ > cephalosporin (Cefuroxime) <sup>line 2</sup> ^^ > doxycycline or macrolide (Azithromycin)
Diphtheria	Sore throat, lack of appetite, low-grade fever and grey or white patch develops in the throat	Corynebacterium diphtheriae	Diphtheria antitoxin (horses) + erythromycin ^^ > penicillin



# Upper respiratory tract infection (URTI):

## Diphtheria

المشكلة بالبكتيريا و السموم تبعهم

- Most infections are asymptomatic or have a mild clinical course.

Symptoms are similar to those of pharyngitis/ tonsillitis but the difference is

- Sore throat, lack of appetite, low-grade fever and grey or white patch develops in the throat ← Pseudomembrane

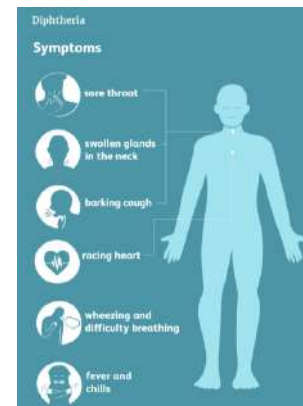
- *Corynebacterium diphtheriae* فا منفحص حلقة بس عشان نشوف اذا في pseudomembrane و نعرف اذا سببه

- **Complications: myocarditis, inflammation of nerves, and kidney problems.** اذا تهنش

- Diphtheria antitoxin (horses) + erythromycin >> penicillin  
 ال treatment تاها يبدأ بال toxin يلي بتفرزه هاي البكتيريا  
 1st line 2nd line  
 To deal with toxin to deal with pathogen

Erythromycin preferred than penicillin  
في حالة البكتيريا فقط

← في حالة ال Diphtheria ال penicillin هو مش ال 1st line





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Diphtheria	Sore throat, lack of appetite, low-grade fever and grey or white patch develops in the throat	Corynebacterium diphtheriae	Diphtheria antitoxin (horses) + erythromycin ^^ > penicillin

alternative of amoxicillin  
2nd choice ١١٠٦



# Upper respiratory tract infection:

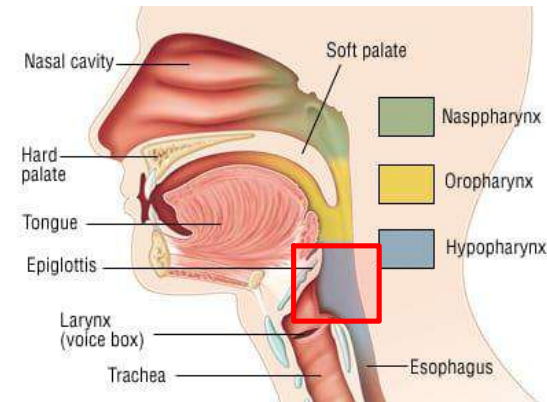
## Emergency problem ( acute inflammation) بشكل سريع يتطور **Acute epiglottitis**

- An acute inflammation in the supraglottic region of the oropharynx including epiglottis

ميش عند ال tonsils ، نُورًا سُوي ( تحت )

- Rapid onset: trouble swallowing >> drooling, fever, aphonia and an increased breathing rate with ↑ pulse

- Primarily caused by bacteria, haemophilus influenzae and Streptococcus pneumoniae.   
 → not viral





# Upper respiratory tract infection: Acute epiglottitis

Patients need airway management before treatment

This figure shows how it is serious

- direct inspection using a laryngoscope.

- Do not use tongue depressor or attempt throat swab → can cause laryngeal spasm

والتشخيص يكون عن طريق laryngoscopy ، فاما في داي الل tongue depressor  
Airways management then I give the treatment

- requires immediate airway management (tracheal intubation).  
يمكن نضطر لل tracheal intubation لانه  
ممنوع اكله روج والدار →  
we need to open the air flow



## EPIGLOTTITIS

- A • Airway Inflammation → Obstruction
- I • Increased Pulse
- R • Restlessness

- R • Retractions
- A • Anxiety Increased
- I • Inspiratory Stridor
- D • Drooling

obstruction

### TREATMENT

- I Anxiety
- Don't Examine Throat
- Position For Comfort
- Cool Mist
- Humidification
- Oxygen
- No Oral Fluids

- Cephalosporin<sup>3rd</sup> (ceftriaxone) + vancomycin (not penicillin)  
>>> chloramphenicol

لانه بنعطي بالمستشفى فحتى ما يصير معه resistance منعطي معه

vancomycin

كثير مهم انك ما تحط patient under anxiety or stress انه تحاول تستخدم attempt swap او tongue depressor  
Because it has risk to kill the patient severe obstruction of airway because of inflammation اصلا عنده



Disease	Symptoms	Pathogens (common)	Pharmacotherapy
epiglottitis	Trouble swallowing, drooling, fever, aphonia and an increased breathing rate	Streptococcus pneumoniae and haemophilus influenzae	requires immediate airway management (tracheal intubation). Cephalosporin3rd (ceftriaxone) + vancomycin ^^ > chloramphenicol





# Upper respiratory tract infection:

## Croup and laryngitis

صوت التباخ

زي صوت الكلب

- “barking/brassy” cough, inspiratory stridor, hoarseness, difficult breathing, fever and runny nose
- Starts or get worse at night and normally lasts one to two days.

بتزيد بالليل و يتقل بالنهار

Usually

- Mainly viral (parainfluenza and influenza)
- Corticosteroids and nebulized epinephrin
- Used in very specific cases: Cephalosporin<sup>3rd</sup> (ceftriaxone) + vancomycin

مش بخاخ يكون مخلوط مع ماء عشان يفتح القصبات

عشان نوسع القصبات لأنه المبريون مش قادر يتنفس

هذا ال Disease عن المشاكل عند الأطفال و بتطور ال resistance

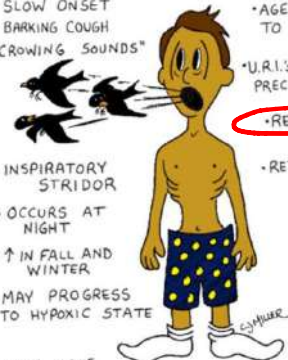
مثلاً طفل عمره تسنه يصير عنده Croup اهله بناموا كثير ، بروجوا مع الدكتور والدكتور بيعطيه antibiotic ويطيب الطفل بس مش ال antibiotic يبي خذوه يطيب

جهازه المناعي نفسه ← كما استمرار الموضوع هاد نحاي الشخص لها كبير يصير عنده resistance For some kind of antibiotic

← كما المعروض انه مش دايمياً ليغضب ال antibiotic كالتالي عموماً نازله وخصوصاً الأطفال

### ACUTE LARYNGOTRACHEOBRONCHITIS LTB (CROUP)

- SLOW ONSET
- BARKING COUGH
- "CROWING SOUNDS"
- AGE 3 MONTHS TO 3 YEARS
- U.R.I.'s FREQUENTLY PRECEDE LTB
- RESTLESSNESS
- RETRACTIONS
- INSPIRATORY STRIDOR
- OCCURS AT NIGHT
- ↑ IN FALL AND WINTER
- MAY PROGRESS TO HYPOXIC STATE
- MAY HAVE SLIGHT TEMPERATURE (102°)



**Croup Features**

**6 S's of Croup**

- 1 Stridor
- 2 Subglottic swelling
- 3 Seal-bark cough
- 4 Steroids (treatment)
- 5 Steamed (inhaled) epinephrine
- 6 Steeple sign (CXR finding)



Disease	Symptoms	Pathogens (common)	Pharmacotherapy
epiglottitis	Trouble swallowing, drooling, fever, aphonia and an increased breathing rate	Streptococcus pneumoniae and haemophilus influenzae	requires immediate airway management (tracheal intubation). Cephalosporin3rd (ceftriaxone) + vancomycin > chloramphenicol
Croup and laryngitis	“barking/brassy” cough, inspiratory stridor, hoarseness, difficult breathing, fever and runny nose Starts or get worse at night	Mainly viral (parainfluenza and influenza) Rarely bacterial	Corticosteroids and nebulized epinephrin Used in very specific cases: Cephalosporin3rd (ceftriaxone) + vancomycin



يعني للتوضيح كمان مره ← بحالة الcroup يلي هي منتشرة عند الاطفال اكثر  
اذا اجاني طفل عنده croup ما بعطيه antibiotic إلا in specific cases (الدكتور ما  
وضح شو همه )  
ليش طيب ما بعطي؟  
لانه هو فعليا الطفل رح يطيب من جهازه المناعي مش من الdrug يلي اعطيته اياه  
فا هيك يعني هاد الطفل اذا ضل كل ما مرض مرضه ياخذ antibiotic  
فا ما رح يوصل عمر ال٢٠ سنة الا وصاير عنده resistance against some kind of  
an antibiotic



Table is good for review but CANT replace the slides



Disease	Symptoms	Pathogens (common)	Pharmacotherapy
Rhinitis	Cough, headache, fever*, sore throat and rhinorrhea	Viruses	Supportive: Dextromethorphan, Anti-histamines, Pain-killers, Decongestants.
Pharyngitis	Sore throat, difficulty speech and swallowing, swollen tonsils and bad breath	<u>Strep. Pyogens</u> : Penicillin/Amoxicillin (Oral) <sup>^^</sup> > Cephalosporin (Cephalexin) <sup>^^</sup> > Macrolide (Azithromycin) <u>Viral</u> : self-limiting: conservative + oral CS (1-2 for pain on swallowing) + lidocaine wash + NSAIDs <u>Candida albicans</u> : clotrimazole	
Sinusitis	Nasal congestion, facial swelling, tenderness, discharge (colour?)	<u>Strep. Pneumonia and H. Influenza.</u>	❖ Amoxicillin/clavulanic acid <sup>^^</sup> > doxycycline or cephalosporins <sup>3rd</sup> (cefixime) <sup>^^</sup> > fluoroquinolone (levofloxacin or moxifloxacin) ❖ Chronic: Intranasal saline, Intranasal corticosteroids, Oral corticosteroids and antibiotics (limited evidence, after culture)
Acute Otitis Media	Ear pain (otalgia), fever, sensation of fullness	<u>Strep. Pneumonia, H. Influenza and Staph. aureus</u>	Amoxicillin-clavulanate <sup>^^</sup> > cephalosporin (Cefuroxime) <sup>^^</sup> > doxycycline or macrolide (Azithromycin)
Diphtheria	Sore throat, lack of appetite, low-grade fever and grey or white patch develops in the throat	Corynebacterium diphtheriae	Diphtheria antitoxin (horses) + erythromycin <sup>^^</sup> > penicillin
epiglottitis	Trouble swallowing, drooling, fever, aphonia and an increased breathing rate	Streptococcus pneumoniae and haemophilus influenzae	requires immediate airway management (tracheal intubation). Cephalosporin <sup>3rd</sup> (ceftriaxone) + vancomycin
Croup and laryngitis	"barking/brassy" cough, inspiratory stridor, hoarseness, difficult breathing, fever and runny nose Starts or get worse at night	Mainly viral (parainfluenza and influenza) Rarely bacterial	Corticosteroids and nebulized epinephrin Used in very specific cases: Cephalosporin <sup>3rd</sup> (ceftriaxone) + vancomycin

Sotian Al Shboul ©

1. Which of the following antibiotics is considered a second-generation broad-spectrum penicillin?

- a) Penicillin G
- b) Ampicillin
- c) Piperacillin
- d) Ceftriaxone

2. Which antibiotic is commonly used as a substitute for patients with a penicillin allergy?

- a) Penicillin G
- b) Ampicillin
- c) Piperacillin
- d) Azithromycin

3. Which respiratory tract infection is known as the common cold?

- a) Rhinitis
- b) Pharyngitis
- c) Sinusitis
- d) Diphtheria

4. What is the main pharmacological management for rhinitis (common cold)?

- a) Antibiotics
- b) Antivirals
- c) Supportive care
- d) Antifungals

5. Which pathogen commonly causes acute epiglottitis?

- a) Streptococcus pneumoniae
- b) Haemophilus influenzae
- c) Staphylococcus aureus
- d) Corynebacterium diphtheriae

6. What is the primary treatment for acute epiglottitis?

- a) Macrolides
- b) Cephalosporin
- c) Vancomycin
- d) Antitoxin

Answers

- 1.B
- 2.D
- 3.A
- 4.C
- 5.B
- 6.B