

# MIRACLE Academy

قال تعالى (يَرْفَعُ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ)

تفريغ OTC  
زميلتكم سارة جرادات



لجان الدفعات



# Allergic rhinitis

## **Non-Prescription Drugs and Parapharmaceuticals**

Dr Rawan Abudalo

Department of Clinical Pharmacy and Pharmacy Practice

Faculty of Pharmaceutical Sciences

Hashemite University

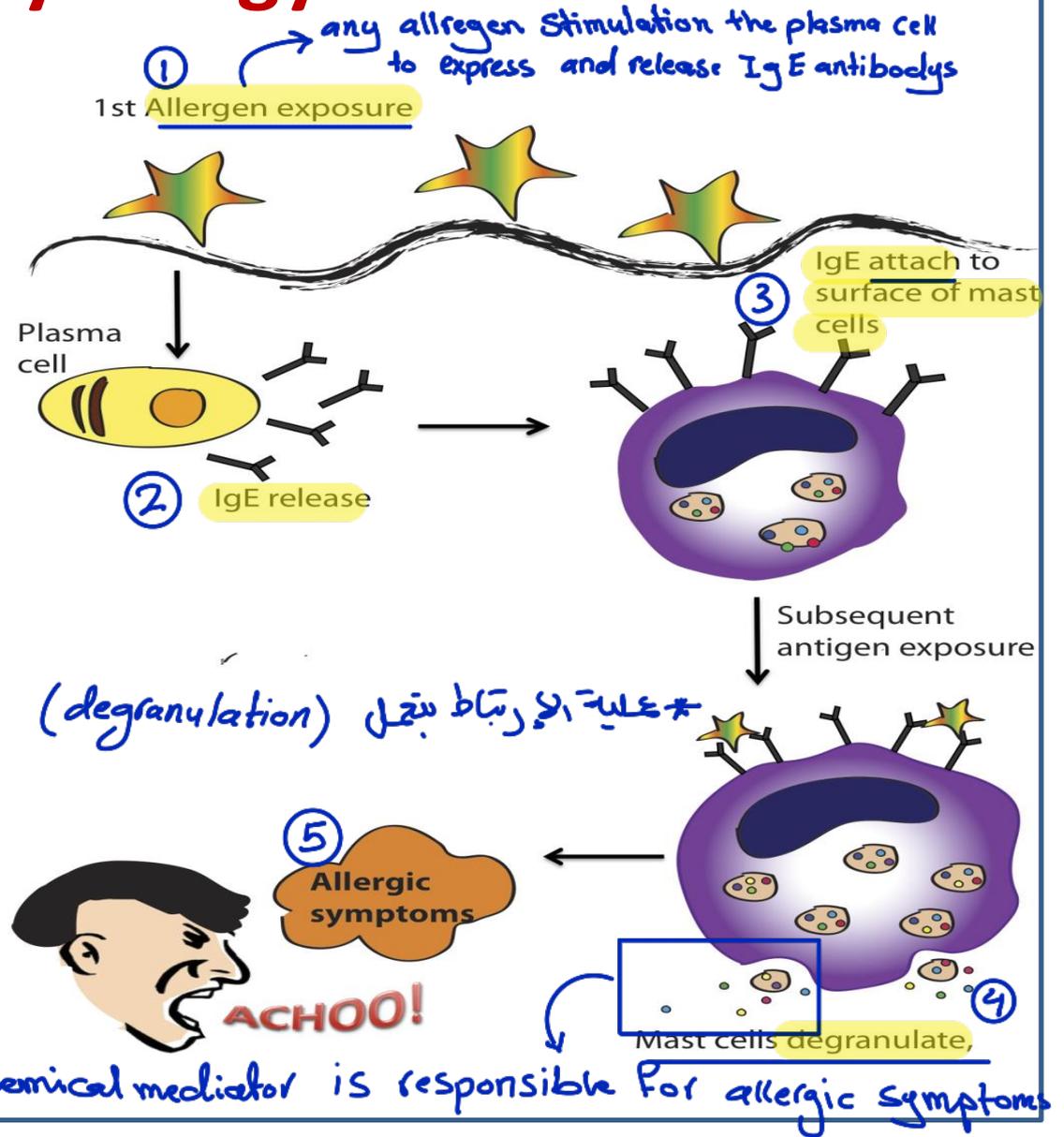
# Allergic Rhinitis

\* The most common respiratory disorder  
seen early in summer and later spring

- Allergic rhinitis is **systemic disease** with prominent **nasal symptoms**. due to over activation of immune system → IgE antibodies  
nasal symptoms can effect :-
- It is a worldwide problem that **affects adults** and **children**.  
An estimated **20% of adults** and **40% of children** in the **United States** have this disease.

# ⇒ Pathophysiology

The symptoms of allergic rhinitis occur after an inflammatory response involving the release of histamine, which is initiated by allergens being deposited on the nasal and respiratory tract mucosa.



nasal  
+  
respiratory  
symptoms

histamine



\* This chemical mediator is responsible for allergic symptoms

# Pathophysiology

بواسم معينة زي تزهين الزيتون ، شجر اللوز  
تسمى (hay Fever) ①

Allergens responsible for **seasonal allergic rhinitis** include:

② **perennial allergic**

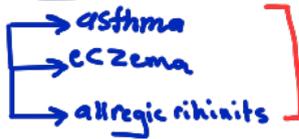
1. **Grass pollens**

2. **Tree pollens**

3. **Fungal mold spores.** ← مناطق الرطوبة

\* Highly susceptible for development allergic rhinitis why?!

= because of family history or what is known as disease of atopy



over stimulation of IgE \* ←



Allergic rhinitis on exposure to **cats** or **dogs** is also relatively common and sometimes **horses**, **rabbits** and **rodents** may trigger symptoms.

has a chance to develop asthma or eczema

Family history ← (Allergic rhinitis)

# Clinical Presentation of Allergic Rhinitis

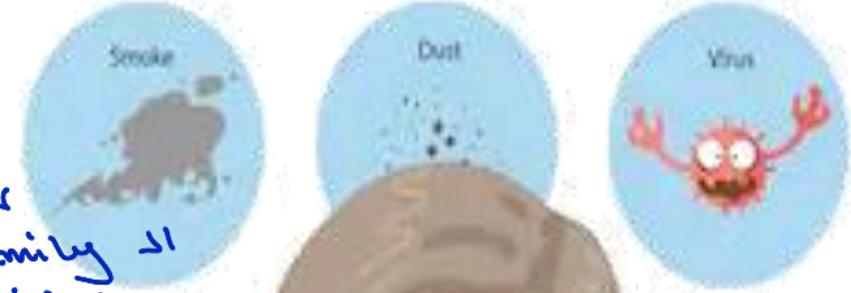
- Allergic rhinitis has been classified as <sup>①</sup> *Season* <sup>موسم</sup> **seasonal allergic rhinitis** (hay fever) and <sup>②</sup> **perennial allergic rhinitis**.  
↳ developed throughout the year
- **New** classifications, <sup>①</sup> **intermittent allergic rhinitis (IAR)** and <sup>②</sup> **persistent allergic rhinitis (PER)**, were proposed in the late 1990s and are now the more accepted terminology.

← في الناس عنها حساسية طول السنة (perennial)، بس في مواسم معينة يكون عندهم (Seasonal allergic) بتزيد الـ worst condition

← best treatment الـ IAR or PER or perennial or Seasonal

# Clinical Presentation of Allergic Rhinitis

**Perennial allergic** rhinitis occurs when symptoms are **present all year round** and is **commonly caused** by the house **dust** mite, **animal dander** and **feathers**.



المسبب  
Family history  
وجوده في مكان الدander وال dust  
بتأثير

Some patients may **suffer from a form of perennial rhinitis** that becomes **worse** in the **summer months** (possibly aggravated by **tree** or **grass pollen allergy**).

مثل ما حكينا قبل  
تكون Perennial وبفصل معينة تكون عنده Seasonal allergic فتتغير الأعراض عنده أسود



# Allergic Rhinitis

## Significance of questions and answers- Age ①

Symptoms of allergic rhinitis may start at any age. **It is more common in children and young adults.**

There is frequently a **family history of atopy in allergic rhinitis sufferers** (the typical atopy triad is **asthma, hay fever and eczema**).

Thus, **children** of allergic rhinitis sufferers are **more likely to have the condition**. The condition often **improves or resolves as the child gets older.** →

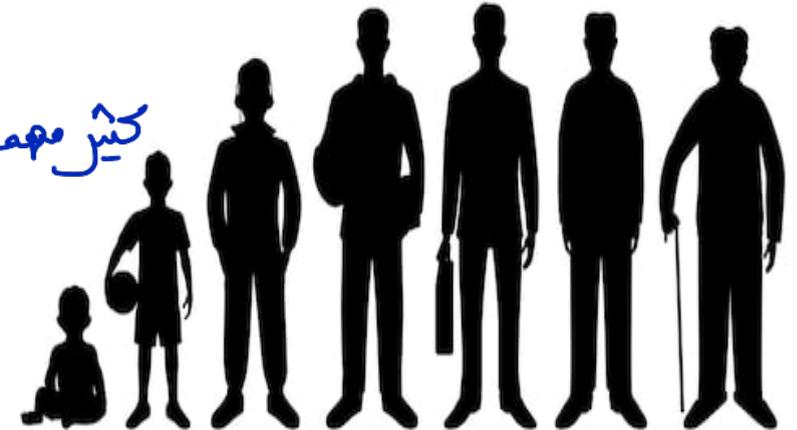
يعني الحالة بتتحسن أو تختفي مع تقدم العمر  
بتختفي مع تقدم العمر

أكثر عرضة

**Adults** are **more likely to have perennial allergic rhinitis**. The **age of the patient must be taken into account if any medication is to be recommended.**

لازم ننتبه لمرضى و إذا ميا تو حيا لدرء معين حسب عمره

كثير مهمة



# Allergic Rhinitis

\* ياتي عندهم Seasonal allergic  
بزيادة عندهم  
الحساسية بظهور حبوب اللقاح (pollen)



## Significance of questions and answers - Duration

يأتي عندهم حسب الحساسية  
↑ Count pollen  
↑ Worst condition

Sufferers will often present with **seasonal rhinitis** as soon as the **pollen count** becomes high.

Symptoms may start in **April** when tree pollens appear and the **hay fever** season may start 1 month earlier (depending on the country).

Hay fever peaks between the months of **May and July**, when grass pollen levels are highest and spells of good weather commonly cause patients to seek the pharmacist's advice.

# Significance of questions and answers- Duration

- Classification depends on the timing and duration of symptoms.
- Symptoms can be further classified as mild or moderate-severe.

TABLE 11-11 Classification of Allergic Rhinitis

Duration	Severity
<b>Intermittent</b> Symptoms occur ≤4 days per week OR ≤4 weeks	<b>Mild</b> Symptoms do not impair sleep or daily activities; no troublesome symptoms
	<b>Moderate-to-Severe</b> One or more of the following occurs: impairment of sleep; impairment of daily activities <sup>a</sup> ; troublesome symptoms
<b>Persistent</b> Symptoms occur >4 days per week AND >4 weeks	<b>Mild</b> Symptoms do not impair sleep or daily activities <sup>a</sup> ; no troublesome symptoms
	<b>Moderate-to-Severe</b> One or more of the following occurs: impairment of sleep; impairment of daily activities <sup>a</sup> ; troublesome symptoms

<sup>a</sup> Daily activities include work, school, sports, and leisure.

Source: Reference 39.

ما يتأثر على النوم والنشاط اليومية  
 ما يتأثر أعراضاً من عجة.

①

①

②

②

\*

\*

# Allergic Rhinitis

## What you need to know- Symptoms

### a. Runny nose

A runny nose is a commonly experienced symptom of allergic rhinitis.

Thick  
Colored  
pus

و تكون ممتلئة بلغم

Thin  
white/clear  
watery

غالبًا تكون الإفرازات

The discharge is often thin, clear and watery, but can change to a thicker, colored, purulent (discharging pus) one. ----- no need for antibiotic treatment.



# Allergic Rhinitis

## What you need to know- Symptoms

### b. Nasal Congestion

The **inflammatory response** caused by the allergen produces **vasodilation** of the nasal blood vessels and so **results** in **nasal congestion**.

• If **severe**, may lead to → **headache**, **earache**, **otitis** media and **sinusitis**



# Allergic Rhinitis

## What you need to know- Symptoms

حكة بالأنف

تصبيح في سقف الفم

③ **Nasal itching**, sometimes with irritation in the roof of the mouth

④ **Sneezing:**

Common with hay fever

⑤ **Eye symptoms:**

- Tearing.
- Itching.
- Redness.



# Nonallergic rhinitis

\* المطلوب المحدد

- Is characterized by perennial symptoms of rhinitis that are not a result of IgE-dependent events.

TABLE 11-13 Causes of Nonallergic Rhinitis

1	<b>Hormonal</b>	Pregnancy, puberty, thyroid disorders
2	<b>Structural</b>	Septal deviation, adenoid hypertrophy
3	<b>Drug-Induced</b>	Cocaine, <u>beta blockers</u> , ACEIs, chlorpromazine, clonidine, reserpine, hydralazine, oral contraceptives, aspirin or other NSAIDs, or <u>overuse of topical decongestants</u>
	<b>Systemic Inflammatory</b>	Vasomotor, eosinophilic nonallergic rhinitis (NARES)
	<b>Lesions</b>	Nasal polyps, neoplasms
	<b>Traumatic</b>	Recent facial or head trauma

\* في بعض الناس يكون عندهم الـ symptoms of allergic rhinitis  
 ولكن ما عندهم allergic rhinitis  
 الـ الاعراض ما يتكون ناجية عند الـ IgE  
 يكون سببها :-

صفت المريض بجليك انا استخدمت العلاج مع انه الصي لذي بنصح ما تقاوز نشق الاستفهام اكثر من 2-3 ايام و احرضنا بياخذوها اسبوع نين حلقهم الـ nasal congestant

# Differences between allergic rhinitis and nonallergic rhinitis

	<u>Nonallergic rhinitis</u>	<u>allergic rhinitis</u>
<b>Temporal pattern of symptoms</b>	<u>perennial</u>	<u>seasonal or perennial</u> with seasonal exacerbations
<b>Type of symptoms</b>	congestion, rhinorrhea, posterior drainage, sinus pressure	sneezing, pruritus, congestion, rhinorrhea, posterior drainage, sinus pressure
<b>Age of onset</b>	<u>70% are older than 20</u>	<u>70% are younger than 20</u>
<b>Precipitating factors</b>	<u>nonspecific irritants</u>	<u>specific antigens</u> ± <u>nonspecific irritants</u>
<b><u>Other atopic disease</u></b>	<u>not present</u>	<u>frequently present</u>
<b><u>Family history of rhinitis</u></b>	<u>not frequent</u>	<u>frequent</u>

# Goals of the treatment

1. Improve symptoms
2. Improve the patient's functional status.

Treatment is individualized to provide optimal symptomatic relief and control.

①

②



# When to refer to a doctor ?

\* حکمت سے یہ بھی مطلوب  
و قرآنہ کامل !

## Exclusions for Self-Treatment

- Children <12 years<sup>a</sup>
- Pregnant or lactating women<sup>a</sup>
- Symptoms of nonallergic rhinitis
- Symptoms of otitis media, sinusitis, bronchitis, or other infection
- Symptoms of undiagnosed or uncontrolled asthma (e.g., wheezing, shortness of breath), COPD, or other lower respiratory disorder
- Moderate-to-severe persistent allergic rhinitis or symptoms unresponsive to treatment
- Severe or unacceptable side effects of treatment

<sup>a</sup> Excluded from self-treatment unless already diagnosed with allergic rhinitis and nonprescription therapy approved by a PCP.

# How is allergic rhinitis managed?

- **step 1**: Avoidance & Environmental control ⇒ *to keep of causative factor*
- **step 2**: Antihistamine, Decongestant, Mast cell stabilizer
- **step 3**: Corticosteroids
- **step 4**: Immunotherapy ⇒ *Sever Causes.*

⊕

# Antihistamines

\* Cheap, not expensive  
and effective  
but vary in S.E

- Both first and second generation, are the mainstay of treatment for allergic rhinitis.

- Ocular antihistamines may be used for the treatment of ophthalmic conditions associated with allergic rhinitis, though their use has been classified by the FDA as less than effective ⇒ FDA لا يقرها أو أقل فعالية

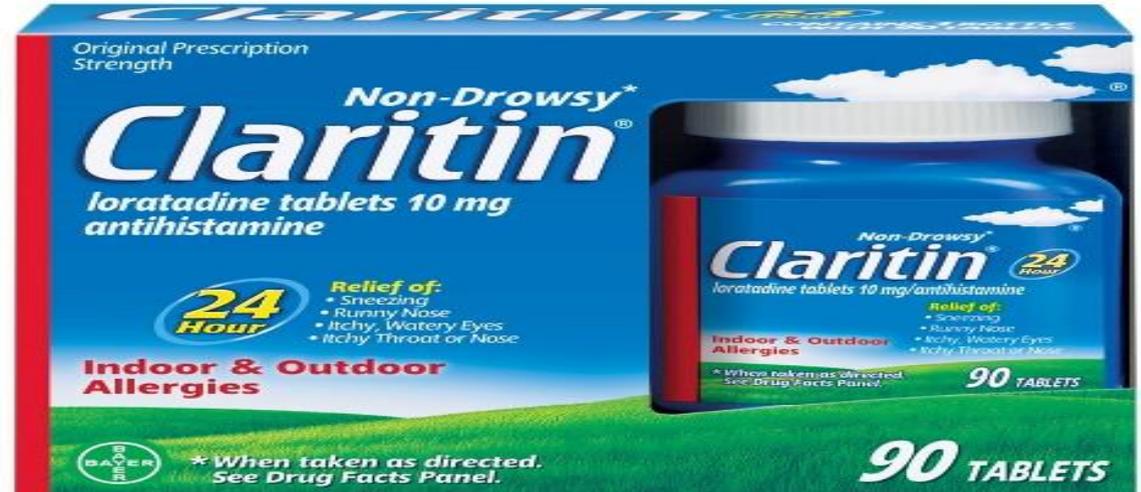
- a. First-generation antihistamines (Chlorphenamine, promethazine, Diphenhydramine) are the least expensive treatment option at this time, however limited in continuous treatment of allergic rhinitis because of???
- = because of their side effect

# Antihistamines

\* التأثير يكون على الـ peripheral H<sub>1</sub> receptor بتاي بكون التأثير اقل على الـ CNS و S.E اقل .

b. **Second-generation** antihistamines (loratadine, fexofenadine) are advantageous because of their **preferential peripheral H<sub>1</sub>-receptor binding**. This allows for **minimal CNS effects**, **minimal sedative effects**, and **minimal anticholinergic activity**.

\* الـ First generation بتاثر على الـ central H<sub>1</sub> receptor بالتاي بتاثر على الـ CNS و S.E اقل  
→ **anticholinergic effect**

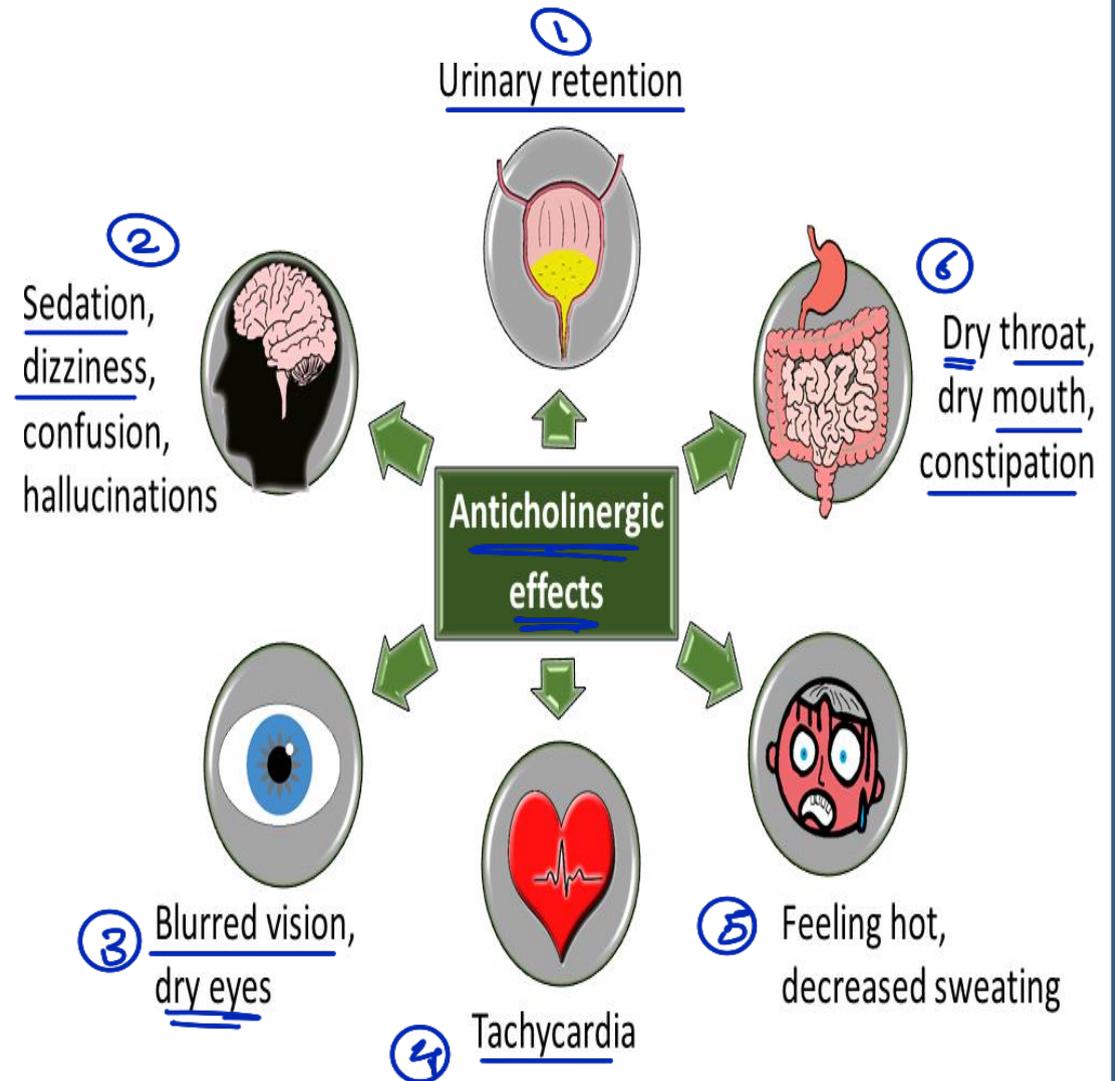


# Antihistamines

## Adverse Effects:

The **problem of using antihistamines**, particularly the **older types** (e.g. <sup>First</sup> *chlorphenamine*), is that they **can cause Drowsiness**.

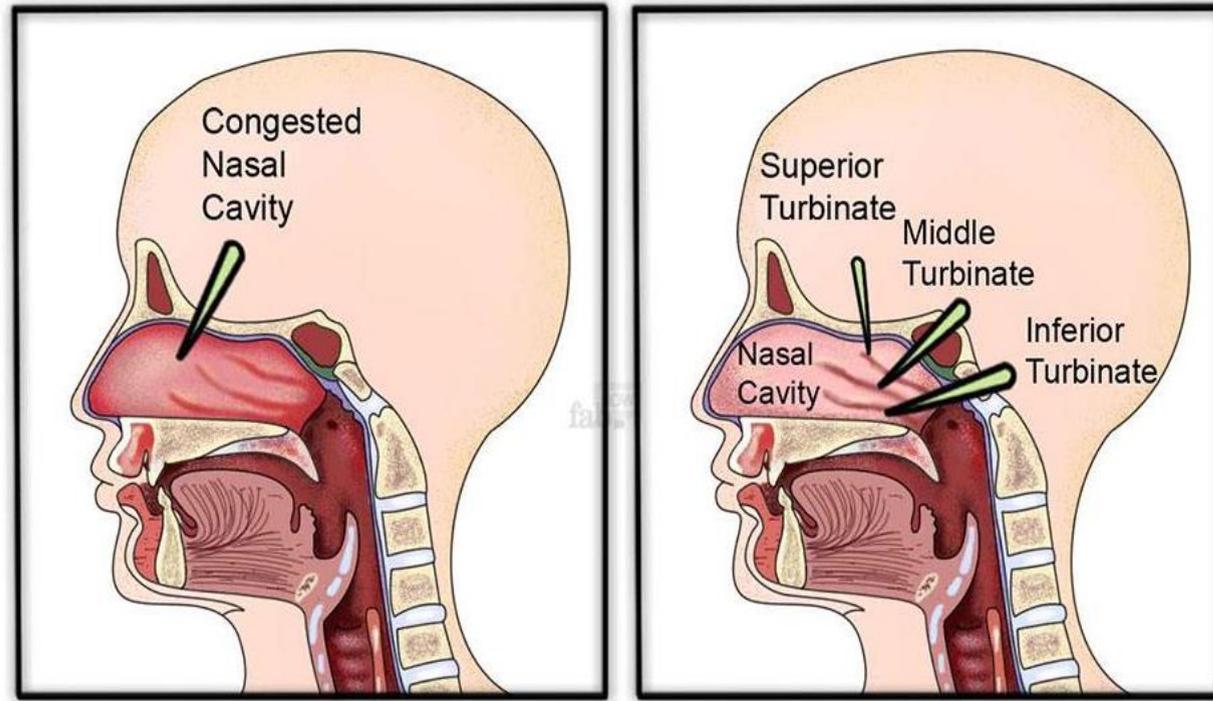
Because of their **anticholinergic activity**, the **older antihistamines** may produce the same adverse effects as **anticholinergic drugs** (i.e. **dry mouth**, **blurred vision**, **constipation** and **urinary retention**).



# Decongestants

Work by constricting the dilated blood vessels in the nasal mucosa

Provide short-term relief for a blocked or stuffy nose (nasal congestion).



CONGESTED NASAL CAVITY

NORMAL NASAL CAVITY

# Decongestants

- E.g **Pseudoephedrine, oxymetazoline**
- These medicines **can be given orally** (systemic effect) (Tablets and syrups) or **applied topically** (nasal sprays and drops).

\* لا تستخدم أكثر من 7 أيام

- If **nasal sprays/drops** are to be recommended, the pharmacist should advise **the patient not to use the product for longer than 7 days.**



\* استخدام اد nasal decongestant أكثر من 7 أيام يتكون النتيجة و-  
 Rebound Congestion (Medicamentosa) ← وهي تعود بالاحتقان  
 ناتج عن الاستخدام المفرط  
 لبخاخات الأنف  
 العنقولة للاحتقان

لا يـ حال ظهور أعراض عند nasal decongestant لا يتم توقف العلاج بشكل تدريجي  
 و- بهاب الفترة يمكن يستخدم intranasal Corticosteroid and normal saline

## Steroid nasal sprays

- A corticosteroid nasal spray is the treatment of choice for \* moderate-to-severe nasal symptoms that are continuous.
- The steroid acts to reduce inflammation that has occurred as a result of the allergen's action.
- Regular use is essential for full benefit to be obtained and \* treatment should be continued throughout the hay fever season.

حتى تحصل على الفائدة كاملة

# Steroid nasal sprays

- E.g <sup>①</sup> Beclometasone, <sup>②</sup> fluticasone.

• لازم المريض يعرف أنه يحتاج يوم Several days قبل ما يحصل على العلاج الكامل

- If symptoms of hay fever are already present, the patient needs to know that it is likely to take several days before the full treatment effect is reached.

\* Adverse reaction:-

- <sup>①</sup> Dryness and irritation of the nose and throat as well as <sup>②</sup> nose bleeds have occasionally been reported.

C.I :-

- They should not be recommended for pregnant women or for anyone with glaucoma.

# Sodium Cromoglicate (mast Cell stabilizer, prophylactic)

- It **stabilizes mast cells**, thereby preventing mediator release. → histamine (كبريت) ال
- can be effective as a **prophylactic** if used correctly. **It should be started at least 1 week before the hay fever season is likely to begin and then used continuously.**  
 ← من عمر سنتين فأكثر بخبة وحدة في كل فتحة أنف من ٣-٤ أمرات باليوم على فترات منتظمة
- Cromolyn is approved for patients **ages 2 years or older**; the recommended dosage is 1 spray in each nostril 3-6 times daily at regular intervals.
- There seem to be **no significant side effects**, although **nasal irritation may occasionally occur**.
- **Cromoglicate eye drops** are usually highly effective for the treatment of eye symptoms → Like itching, Conjunctivites or eye redness.

# Allergic Rhinitis

## Present medication

The pharmacist must establish whether any prescription or OTC medicines are being taken by the patient.

Potential interactions between prescribed medication and allergic rhinitis medications can therefore be identified.

It would be useful to know if any medicines have been tried already to treat the symptoms, especially where there is a previous history of allergic rhinitis.

فهم حتى تعرف إذا الدواء  
Fail to Control the symptoms  
or  
patient non-adherence the medications

\* مهم الصيدلاني يعرف  
إذا بياخذ prescription or OTC drug  
والتفاعلات بينها وبين الـ allergic rhinitis medications  
أو إذا أخذ أي دواء لعلاجها في الأخرى

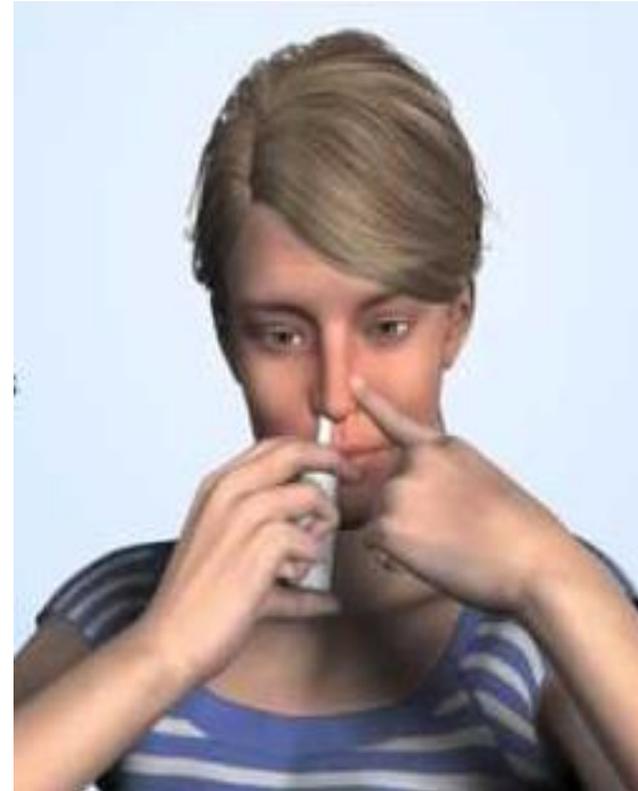
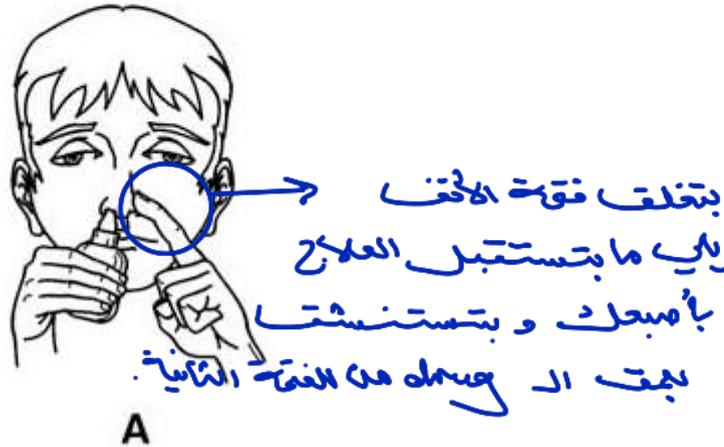


\* مثل المريض عند Cataract / glaucoma  
لا ينطبق nasal corticosteroids

# Administration Guidelines for nasal dosage formulations

## Nasal Sprays

- Gently insert the bottle tip into one nostril, as shown in drawing A.
- Keep head upright. Sniff deeply while squeezing the bottle. Repeat with other nostril.



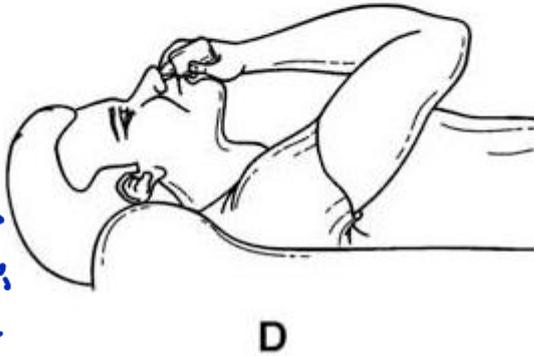
Nasal Spray Administration

# Administration Guidelines for nasal dosage formulations

## Nasal Drops

- Squeeze the bulb to withdraw medication from the bottle.
- Lie on bed with head tilted back and over the side of the bed, as shown in drawing D.
- Place the recommended number of drops into one nostril. Gently tilt head from side to side.
- Repeat with other nostril. Lie on bed for a couple of minutes after placing drops in the nose.
- Do not rinse the dropper.

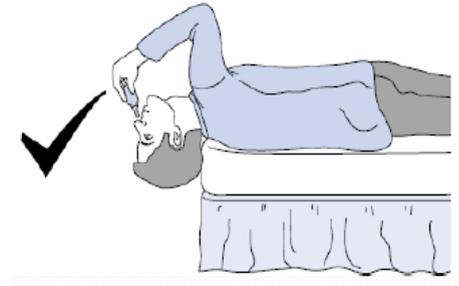
رأسه لازم  
يكد من قنغ  
أو تازل مشرب  
عنا جسمه



يعتمد على نوع الـ dropper

الاشارة انه انما يرجع رأسه (Back)  
للخلف وبعين نفسه القطرة الأنفيا-  
وهذا خطأ X

X



Nasal Drops Administration

# Administration Guidelines for nasal dosage formulations

## Nasal Inhalers

- **Warm** the inhaler in hand **just before use.**
- Gently insert the **inhaler tip into one nostril**, as shown in drawing C. **Sniff deeply while inhaling.**
- **Wipe the inhaler after each use.** Discard after **2-3 months** even if the **inhaler still smells medicinal.**

بتخلص منه  
بعد ٣-٣ أشهر  
حتى لو نية له medicinal smell



**Note** Do not share the drug with anyone. Discard solutions if discolored or if contamination is suspected. Remove caps before use and replace tightly after each use. Do not use expired products. Clear nasal passages before administering the dose. Gently depress the other side of the nose with finger to close off the nostril not receiving the medication. Aim tip of products away from nasal septum to avoid accidental damage to the septum. Wait a few minutes after using the drug before blowing the nose.

١. ٢. ٣. ٤. ٥. ٦.  
بدك تغلق  
بأصبعك  
على الطرف الثاني  
من الأنف

بدك تنتظر دقائق به العلاج  
قبل فتح الأنف

١. ما تشارك الدواء مع أي شخص  
٢. تخلص من العقاقير إذا تغير لونها  
أو فيها قلوثة  
٣. أزل الأغشية قبل كل استعمال  
وإغلاقها بإحكام بعد الاستخدام  
٤. ما تستخدم الأدوية منتهية الصلاحية  
٥. تنظيف الأنف قبل إعطاء الجرعة