

## Order of Administration for Select Drug Products - Eye Drops and Inhalers -

### BACKGROUND

**Ophthalmic drugs** are used to treat afflictions of the eye and the surrounding structures. These include many drug classes: antimicrobials, steroids, and anesthetics, among others. The most common formulations used are drops and ointments.

**Inhaled drugs** are commonly used to treat disorders of the respiratory system and typically include beta receptor agonists, muscarinic receptor antagonists, and corticosteroids. Several different formulations are used, such as metered-dose inhalers, soft mist inhalers, dry powder inhalers, and smart inhalers.

Because these drugs generally work locally (in the area where the medications is delivered), order-of-administration can be integral when multiple products are to be administered at once.

### ORDER OF ADMINISTRATION FOR OPHTHALMIC PRODUCTS

#### Key Points<sup>1,2</sup>

- Generally, drug viscosity is directly related to the length of time drug will stay in the eye:  $\uparrow$  VISCOSITY =  $\uparrow$  TIME IN EYE
- Time medication will remain in tear film: aqueous solutions < suspensions < gels or ointments.
- Viscous products create occlusive barriers that “waterproof” the eye, preventing aqueous solutions from reaching drug targets. Therefore, **drops should be administered before ointments**.
- **3 to 5 minutes** should be allowed between medication administrations in order to allow drops to maximally absorb.
- Refer to product package inserts for full prescribing info and product-specific details.
- Suggestions for the order of administration of ophthalmic drops can be found in **Table 1** (next page).

### ORDER OF ADMINISTRATION FOR INHALED PRODUCTS

#### Key Points<sup>3,4</sup>

- If a rescue inhaler and maintenance inhaler are prescribed to be administered at the same time, the **rescue inhaler should be used first** followed by the maintenance inhaler.
- It has been recommended that users **wait at least 1 to 2 minutes** between doses in order to maximize the dose received.
- Refer to product package inserts for full prescribing info and product-specific details (e.g., to rinse mouth with water after using an inhaled corticosteroid).

### SUMMARY

- Administer concurrently dosed ophthalmic products 3-5 minutes apart and refer to Table 1 for general guidance on order of administration.
- Rescue inhalers should be used 1 to 2 minutes before maintenance inhalers for patients using multiple inhalers at the same time.

*Information presented in this document is for general informational purposes only.  
Any changes in therapy must be discussed with the prescriber prior to initiation.*

Table 1. Order of Administration for Ophthalmic Drugs<sup>5</sup>

Order of Administration	Drug Class	
1	<b>Local anesthetics</b> Oxybuprocaine hydrochloride Proxymetacaine <b>Miotics</b> Pilocarpine	<b>Mydriatics and Cycloplegics</b> Atropine Cyclopentolate Homatropine Tropicamide
2	<b>Sympathomimetics</b> Phenylephrine Adrenaline Apraclonidine Brimonidine	<b>Tear Deficiency Products</b> Acetylcysteine Carbomers Hydroxyethylcellulose Hypromellose Polyvinyl alcohol Sodium Chloride
3	<b>Non-steroidal Anti-inflammatory (NSAID) Preparations</b> Diclofenac Ketorolac	<b>Steroids</b> Betamethasone Dexamethasone Fluorometholone Prednisolone
4	<b>Antibiotics</b> Cefuroxime Chloramphenicol Ciprofloxacin Fusidic acid Gentamicin Neomycin Penicillin  <b>Antifungals</b> Miconazole  <b>Anti-inflammatories</b> Antazoline Lodoxamide Sodium cromoglicate  <b>Beta-blockers</b> Betaxolol Carteolol Levobunolol Metipranolol Timolol	<b>Carbonic Anhydrase Inhibitors</b> Dorzolamide  <b>Prostaglandin Analogues</b> Bimatoprost Latanoprost Tafluprost Travoprost  <b>Ointments</b> Acyclovir Atropine Betamethasone Chloramphenicol Chlortetracycline Gentamicin Hydrocortisone Liquid paraffin Pilocarpine

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