A brief description of some plant remedies used for eye, ear, nose and oropharynx ailments and complaints
The eye, ear, nose and oropharynx

The eye

- Simple eye lotions containing mild astringent and soothing plant products are very popular, especially those containing distilled witch hazel and eyebright herb extracts.
Glaucoma

- It is associated with increased intraocular pressure and can cause blindness if not treated.
- Glaucoma is always treated by medical supervision.
- Most of the drugs used are synthetic sympathomimetics such as dipivefrine (a prodrug of epinephrine) and brimonidine, β-blockers such as timolol.
- There is also plant-derived miotics (related to miosis) like pilocarpine.

Glaucoma

- Pilocarpine: is an alkaloid from Pilocarpus jaborandi leaves.
- This alkaloid is parasympathomimetic that reduces the intraocular pressure by opening the drainage channels in the trabecular meshwork [an area of tissue in the eye located around the base of the cornea, near the ciliary body, and is responsible for draining the aqueous humor from the eye via the anterior chamber (the chamber on the front of the eye covered by the cornea)] which may be affected by a spasm or contraction of the ciliary muscle.
- It is used in open-angle glaucoma and to counteract the use of atropine.
- It is prescription-only medicine.
- **Precaution:** salivation, tachycardia if taken internally.
Anterior uveitis

- Anterior uveities is an inflammatory disorder of the anterior segment.
- It is treated with atropine or its derivative, homatropine and tropicamide.
Anterior uveities

- Is an inflammation of the middle layer of the eye. This layer includes the iris (colored part of the eye) and the adjacent tissue, known as the ciliary body. If untreated, it can cause permanent damage and loss of vision from the development of glaucoma, cataract or retinal edema.

- Atropine; it is an alkaloid obtained from *Atropa belladonna*.
- It is used in drop form to open the iris for examination or surgical procedures (Mydriatic effect).
Inflammation of the eye

- Inflammation may be a result of:
  1. An allergic reaction.
  2. Infection.
  3. Irritation of the eye.
- **Eyebright** (*Euphrasia officinalis*)
  - Has a long history of use in eye disorders.
  - It contains:
    1. Iridoid glycosides such as euphorosides.
    2. Tannins.
    3. Lignans.
**Witch hazel**

- Distilled *witch hazel* is prepared by macerating the dormant and partially dried twigs of *Hamamelis virginiana* leaves.
- It is used in **eye drops** dosage form to soothe the eye and clear redness.
Ear, nose, orthopharynx

- Infection of ear, nose and throat are treated under medical supervision with antibiotics, but a number of soothing and antiseptic preparations from plant sources are available for use.

**Decongestants**: shrink swollen blood vessels and tissues.

- Decongestants come in pills, liquids, nose drops, and nasal sprays.
- Many are available without a prescription.
The ear

- Infections of the ear are treated with either topical or systemic antibiotics.

- However, the removal of wax from the ear is achieved with the aid of softening agents such as almond, arachis (الفول السوداني), Peanut or olive oil followed by ear syringing (ear irrigation).

Ear

Almond oil

- *Prunus amygdalus*:
  - The fixed oil is obtained from the seeds of (sweet almond oil).
  - The oil consists of triglycerides mainly triolein ([is a symmetrical triglyceride derived from glycerol and three units of the unsaturated fatty acid, oleic acid](https://en.wikipedia.org/wiki/Oleic_acid)] and trioleolinolein, together with the fatty acids such as palmitic (16 C’s), lauric (12 carbons), myristic (14 C’s) and oleic (18 C’s) acids.
The ear
Olive oil

*Olea europaea*:

- The oil is expressed from the fruits (virgin or cold expressed) oil then refined where it will have a yellowish color.

- **Expression**: also referred to as “cold pressed”, is a method where oil is obtained by using high mechanical pressure to literally squeeze the oil from the plant material.

- It consists of glycerides of oleic acid (70-80%) with smaller amounts of linoleic, palmitic and stearic acid.
Oropharynx

- Special oral and throat irritation can be treated with an anti-inflammatory and antiseptic mouthwash, including thymol-type preparations.

- Many essential oils are used as deodorizers (unpleasant smell removers) and anti-inflammatory agents, including mint, clove, eucalyptus and lemon oils as well as menthol and thymol.

- These can be incorporated in artificial saliva products (hydroxypropyl methylcellulose = lubricants for eye and artificial saliva)
Oropharynx

Thymol

• Thymol is extracted from different species of thyme.
• It is widely used in dental products.
• It causes irritation in large concentrations when applied externally and should not be swallowed in significant amounts.
• Normal concentrations associated with the herb do not normally cause problems.
• Thymol is antiseptic, deodorizing and anti-inflammatory.
Oropharynx. Peppermint oil

- Peppermint oil is antiseptic, deodorizing and anti-inflammatory.
- It is widely used in skin and dental products.
Oropharynx
Sage

• **Sage** = *Salvia officinalis*:
  - The volatile oil contains \( \alpha \) and \( \beta \) thujone as the **major component** 50% with cineol, rosmarinic acid and flavonoids.
  - It is used as a tea or gargle to soothe inflammation of gums or throat.
  - Rosmarinic acid has antiviral and anti-inflammatory effect.

Oropharynx
Sage

• A throat spray containing sage and Echinacea [Coneflower, القنفذة] was recently compared to chlorohexidine / lidocaine spray.

• They used 2 puffs for acute sore throat, every 2 hours, up to 10 times daily for 5 days.

• The outcome of this study was that 63% of the patients were symptoms-free, compared to 57% of patients used chlorohexidine / lidocaine.
Clove

➤ They are the flower buds of *Syzygium aromaticum* = *Eugenia caryophyllus*
➤ The buds are very rich in essential oils 15-20% with *eugenol* as the main component.
➤ It is used for relief of *toothache* and other *dental preparations*.
➤ Eugenol inhibits prostaglandin synthesis *(possible mechanism of action)*.