

## Local anesthesia

Local anesthesia acts by reducing sensitivity **which therefore** reduces anxiety and stress related to treatment; salivation is also decreased.

Scopolamine, atropine and benztropine are **anticholinergic** drugs. Not only do they decrease the flow of saliva, but also decrease the secretion from respiratory glands during general anesthesia.

1. The **duration of action** of local anesthetics is directly proportional to **protein binding** and **lipid solubility**. Increased protein binding — increased lipid solubility = increased duration of action.
2. The **lower the pKa** (*dissociation constant*) of the local anesthetic, the **faster** the onset of action. **Important point:** a local anesthetic with a low pKa has a very large number of lipophilic free base molecules that are able to diffuse through the nerve membrane.
3. **Increased** blood flow — **shorter** duration of action.
4. **Metabisulfite** is an antioxidant that protects the vasoconstrictor from oxidation. It has a low incidence of allergenicity.
5. The local anesthetic **prilocaine** can produce **methemoglobinemia** in patients with subclinical methemoglobinemia when administered in large doses. The topical anesthetic **benzocaine** also can induce **methemoglobinemia**, but only when administered in very large doses.
6. **The administration of levonordefrin** should be **avoided** in patients receiving tricyclic antidepressants. There is an increased sensitivity to vasoconstrictors. \*\*\* Epinephrine should be used cautiously.
7. The administration of **vasoconstrictors** in patients being treated with **nonselective beta-blockers** (*i.e.*, *Propranolol*) increases the likelihood of a serious elevation of the blood pressure accompanied by a reflex bradycardia. Use vasoconstrictors cautiously.