

- 2) Constipation.
- 3) Blurred vision.
- 4) Dry mouth → this is sometimes actually desirable if **sialorrhoea** is a problem.

This is where there is excess saliva production and accumulation due to reduced ability to swallow. Muscarinic antagonists help to reduce these secretions.

- **Examples** → BENZHEXOL + BENZATROPINE.

Dopaminergic Drugs:

- **LEVODOPA:**
- Levodopa is the gold standard treatment of Parkinson's Disease but should **not** be used as a first line therapy due to the **long-term** side effects.
- The drug is delivered as a **natural dopamine precursor** so that it can use an **amino-acid transporter** to enter the brain (dopamine alone cannot do this).
- Once inside the brain, Levodopa is converted to **dopamine** via **DOPA DECARBOXYLASE**.
- However, the enzyme Dopamine Decarboxylase is also present in the **periphery** in the **intestinal wall**. If taken alone, then 90% of Levodopa would be converted to Dopamine in the gut resulting in no effect in the brain and just nausea.
- To avoid the peripheral metabolism of Levodopa, levodopa is **co-administered** with a **peripherally-acting Dopamine Decarboxylase inhibitor**.
 - This is either **carbidopa** (as sinemet) or **benserazide** (as madopar).
- Some of the Levodopa may be converted by the **plasma Catechol-O-Methyl-Transferase (COMT) enzyme**. This affects 5% of the levodopa.
 - To avoid this a COMT inhibitor is used (like **entacapone**) as an **adjunct**.
- The use of the two adjuncts ensures that **most of the Levodopa enters the brain unchanged**.
- The Dopamine Decarboxylase in the brain produces **Dopamine** in both **Dopaminergic** and **Serotonergic** neurones.