



- **Monoamine reuptake inhibitors:**

- **Non-selective (which means that they can inhibit the reuptake of NE, dopamine or serotonin):**

- ✓ Tricyclic (considered to be 1<sup>st</sup> generation):
  - ❖ **Amitriptyline:** it is used to treat neuralgia.
  - ❖ **Imipramine:** used to treat nocturnal enuresis  
*ADR of tricyclics (3 C's): convulsions, coma and cardiotoxicity.*
- ✓ Heterocyclic:
  - ❖ **2<sup>nd</sup> generation (Bupropion):** which is used for smoking cessation. As an adverse effect, it lowers the seizure threshold so it is contraindicated in patients with epilepsy.
  - ❖ **3<sup>rd</sup> generation (Mirtazapine):** it is used to treat a patient who presents with (depression + anorexia) or (depression + insomnia).

- **Selective Serotonin Reuptake Inhibitors (SSRIs):**

- ✓ Example: fluoxetine.
- ✓ Adverse effects of SSRIs:
  - ❖ They cause sexual dysfunction (but notice that they have a benefit in treating patients with premature ejaculation).
  - ❖ Severe anxiety at the beginning of treatment which will disappear later.
  - ❖ Suicide risk especially when used with children and adolescents.
  - ❖ Weight loss.
  - ❖ Inhibition of CYP<sub>450</sub> so causing a lot of drug-drug interactions.
  - ❖ Notice that all SSRIs belong to category-C except peroxetine which belongs to category-D.
- ✓ Augmentation strategies with SSRIs:
  - ❖ Lamotrigine.
  - ❖ Lithium.
  - ❖ Bupropion.
  - ❖ Thyroxine.

- **Selective Norepinephrine Reuptake Inhibitors (SNRIs):**

- ✓ Example: duloxetine (which is used for urinary stress incontinence).

- **Monoamine oxidase inhibitors (MAOIs):**

- **Non-selective (inhibiting both MAO-A which is degrading serotonin and NE and MAO-B which is degrading dopamine):**

- ✓ Example: phenelzine.

- **Selective (reversible inhibition of MAO-A):**

- ✓ Example: moclobemide

*Adverse effects of monoamine oxidase inhibitors (MAOIs):*

- ✓ When combined with food rich in tyramine → it leads to severe hypertension crisis.
- ✓ When combined with tricyclic antidepressants or SSRIs overdose → serotonin syndrome (which is characterized by: hyperthermia, hyperreflexia, shivering, penile erection, seizure and coma).
- ✓ Notice that MAOIs are not given with pethidine.

- **Treatment of mania (with mood stabilizers):**

- **Lithium:** adverse effects include cardiotoxicity, hypothyroidism, diabetes insipidus, teratogenic and it has a low therapeutic index.
- Olanzapine.
- Risperidone.
- Carbamazepine.