

3. Pharmacology of drugs acting on central nervous system

a. Psychopharmacological agents: Antipsychotics, antidepressants, anti-anxiety agents, anti-manics and hallucinogens.

b. Drugs used in Parkinsons disease and Alzheimer's disease.

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c. CNS stimulants and nootropics.

d. Opioid analgesics and antagonists (Done)

e. Drug addiction, drug abuse, tolerance and dependence. (Done) → Cology unit 1

B. Antipsychotics

Phenothiazines: SAR of Phenothiazines - Promazine hydrochloride, Chlorpromazine hydrochloride*, Triflupromazine, Thioridazine hydrochloride, Piperacetazine hydrochloride, Prochlorperazine maleate, Trifluoperazine hydrochloride.

Ring Analogues of Phenothiazines: Chlorprothixene, Thiothixene, Loxapine succinate, Clozapine.

Fluro buterophenones: Haloperidol, Droperidol, Risperidone.

Beta amino ketones: Molindone hydrochloride.

Benzamides: Sulpieride.

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C. Anticonvulsants: SAR of Anticonvulsants, mechanism of anticonvulsant action

Barbiturates: Phenobarbitone, Methabarbital. **Hydantoins:**

Phenytoin*, Mephenytoin, Ethotoin **Oxazolidine diones:**

Trimethadione, Paramethadione **Succinimides:**

Phensuximide, Methsuximide, Ethosuximide* **Urea and**

monoacylureas: Phenacemide, Carbamazepine*

Benzodiazepines: Clonazepam

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Miscellaneous: Primidone, Valproic acid, Gabapentin, Felbamate

Narcotic and non-narcotic analgesics (Done)

Morphine and related drugs: SAR of Morphine analogues, Morphine sulphate, Codeine, Meperidine hydrochloride, Anilerdine hydrochloride, Diphenoxylate hydrochloride, Loperamide hydrochloride, Fentanyl citrate*, Methadone hydrochloride*, Propoxyphene hydrochloride, Pentazocine, Levorphanol tartarate.

Narcotic antagonists: Nalorphine hydrochloride, Levallorphan tartarate, Naloxone hydrochloride.

• Anti-depressant Drug.

↑
Opp.
↓
depression

Antidepressants are prescription medicines to treat depression. Depression is more than feeling a little sad or "blue" for a few days. It's a very common, serious medical illness that affects your mood and general mental health. It can make you feel tired, hopeless, worried, or fearful.

Depression → Deficiency of Serotonin, Dopamine,
(Endogenous depression) 5HT, Nor-Adrenalline

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Symptoms of Depression ⇒

① Emotional Symptoms → Sadness, Hopelessness, Low Self Confidence
→ Loss of Interest.

② Biological Symptom → Loss of Appetite, Sleep Abnormality
→ Low Concentration.

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Classification of Anti-depressant

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① Selective Serotonin reuptake Inhibitor → Sitalopram, Fluoxetine.

② Serotonin / Nor epinephrine reuptake Inhibitor → Duloxetine

③ Monoamine Oxidase Inhibitor → Selegiline.

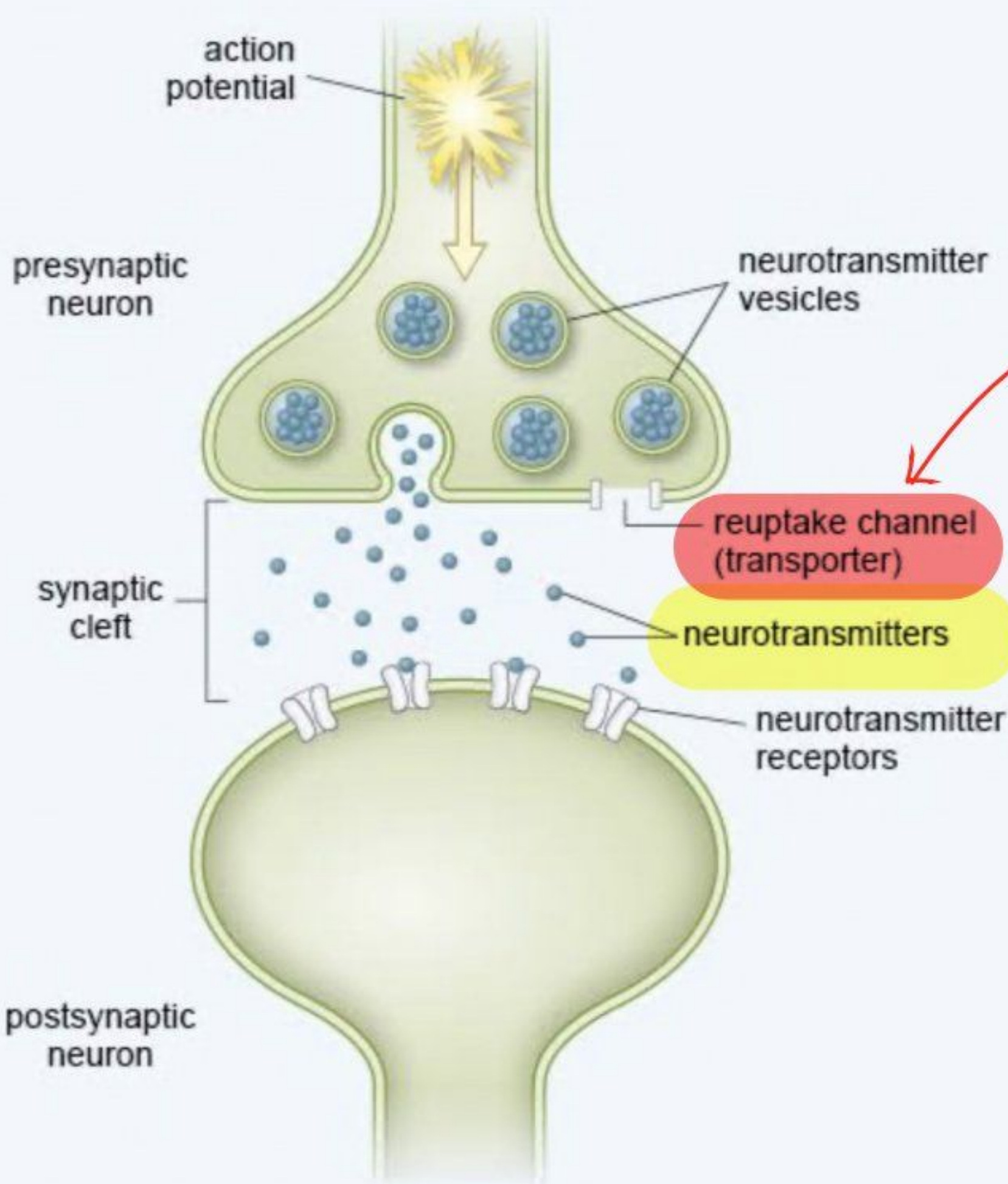
Eg = Dopamine, Serotonin, Nor-Epinephrine

oxidation

⊖ Inhibitor

oxidation ही होने दो।

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Selective Serotonin reuptake Inhibitor.

⇒ Serotonin ↑↑

Binding ↑↑

Action ↑↑

(Depression ↓).

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① Serotonin → Happiness, Enjoyment

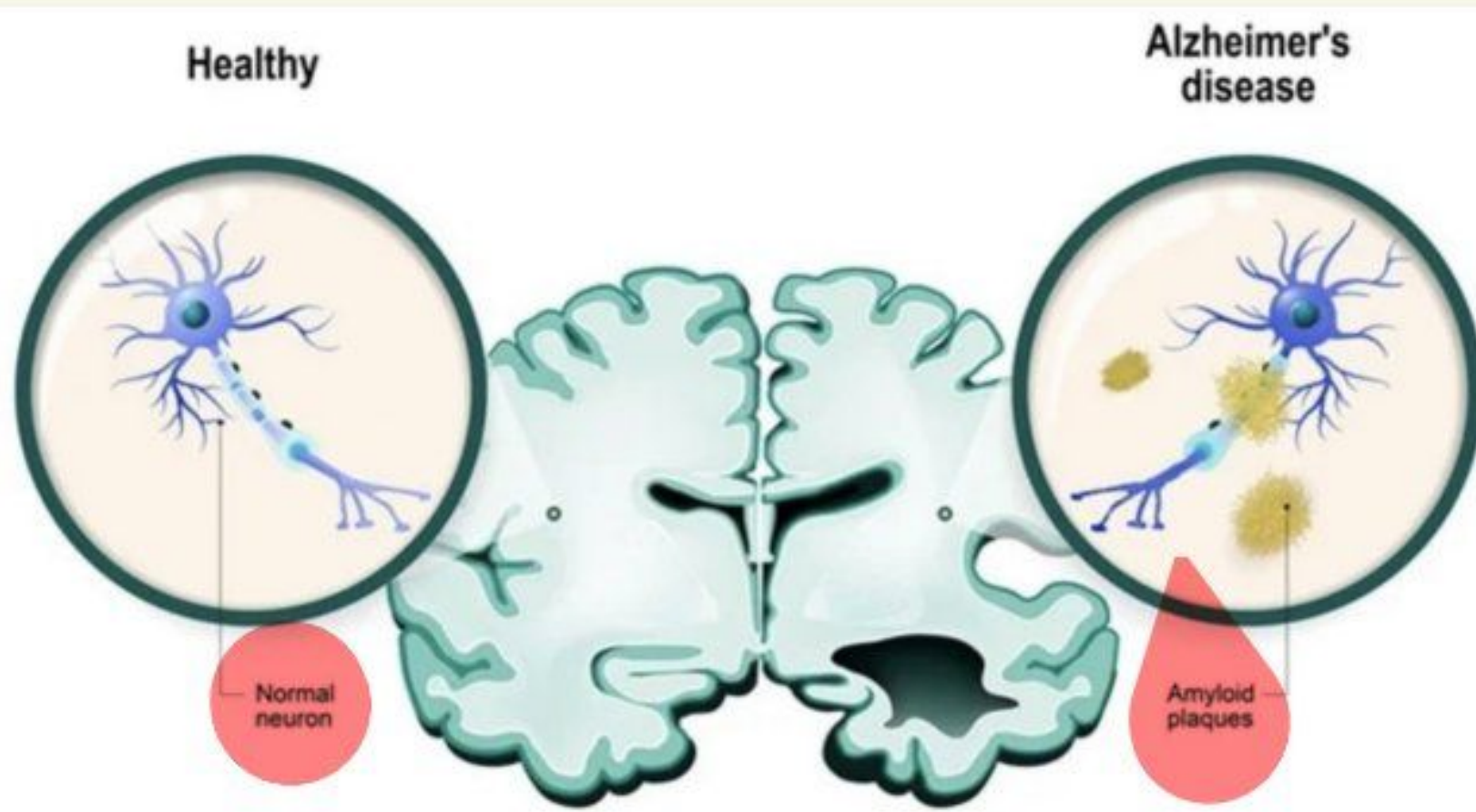
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② Drug Used in Alzheimer disease

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Pathophysiology (2nd sem.)
(Description)

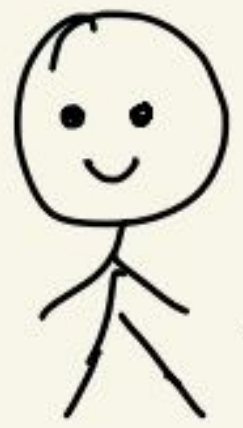
• It is a Neurodegenerative disease

⇒ Progressive Impairment of Memory.

⇒ Plaque formation lead to Neuronal destruction.

⇒ Cholinergic Neuron are Mainly affected.

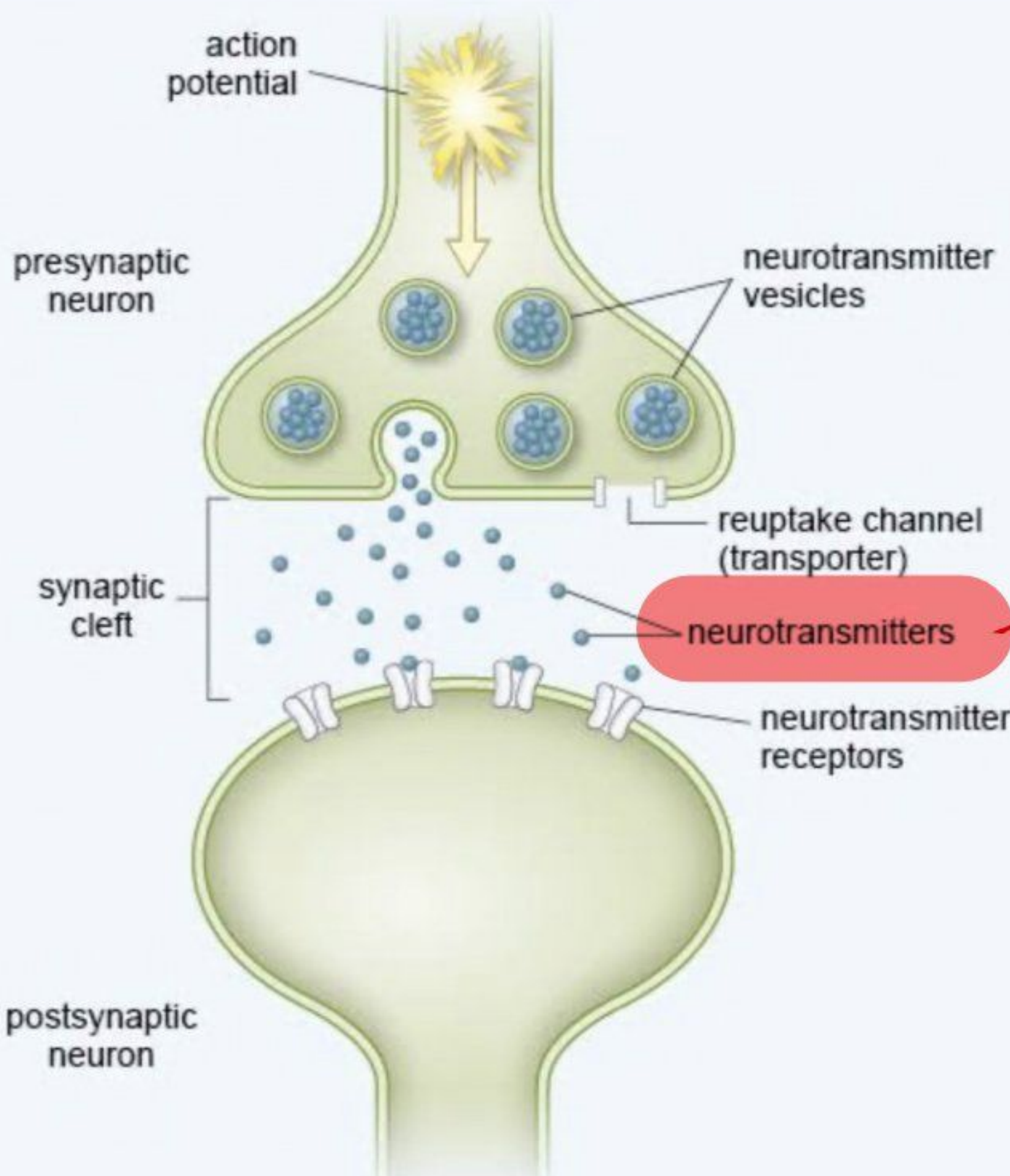
ACh ↓↓



We Need to
(↑) the level of ACh

① Acetyl Cholinesterase ↓↓

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Acetylcholinesterase Inhibitor
⊖
ACh ↓ Acetylcholinesterase
→ ACh

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Alzheimer's Symptoms

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? ? ? ?
**CONFUSION WITH
TIME AND LOCATION**

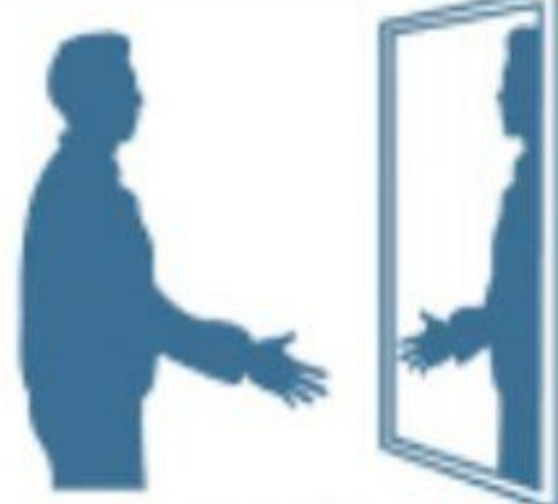

**WITHDRAWAL FROM
SOCIAL ACTIVITIES**


**DIFFICULTY
COMPLETING
FAMILIAR
TASKS**

1+1=?
**DIFFICULTY
SOLVING
PROBLEMS**

?? ?

**POOR
JUDGEMENT**


**TROUBLE
WITH IMAGES
AND SPACES**

WHERE
IS IT?

**MISPLACING
ITEMS**

?? ?

**MEMORY
LOSS**


**UNFOUNDED
EMOTIONS**

UM

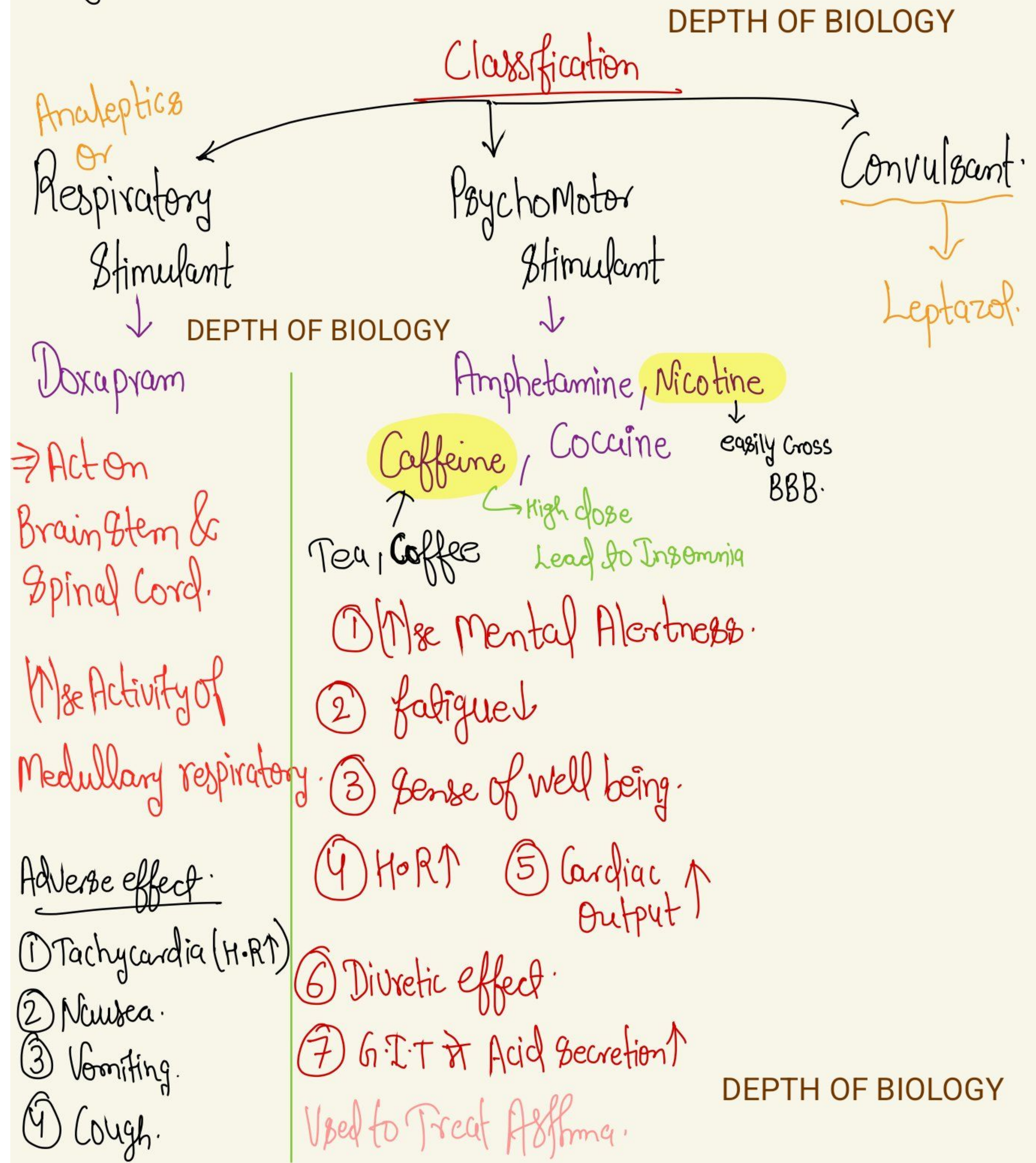
**DIFFICULTY
WITH WORDS**

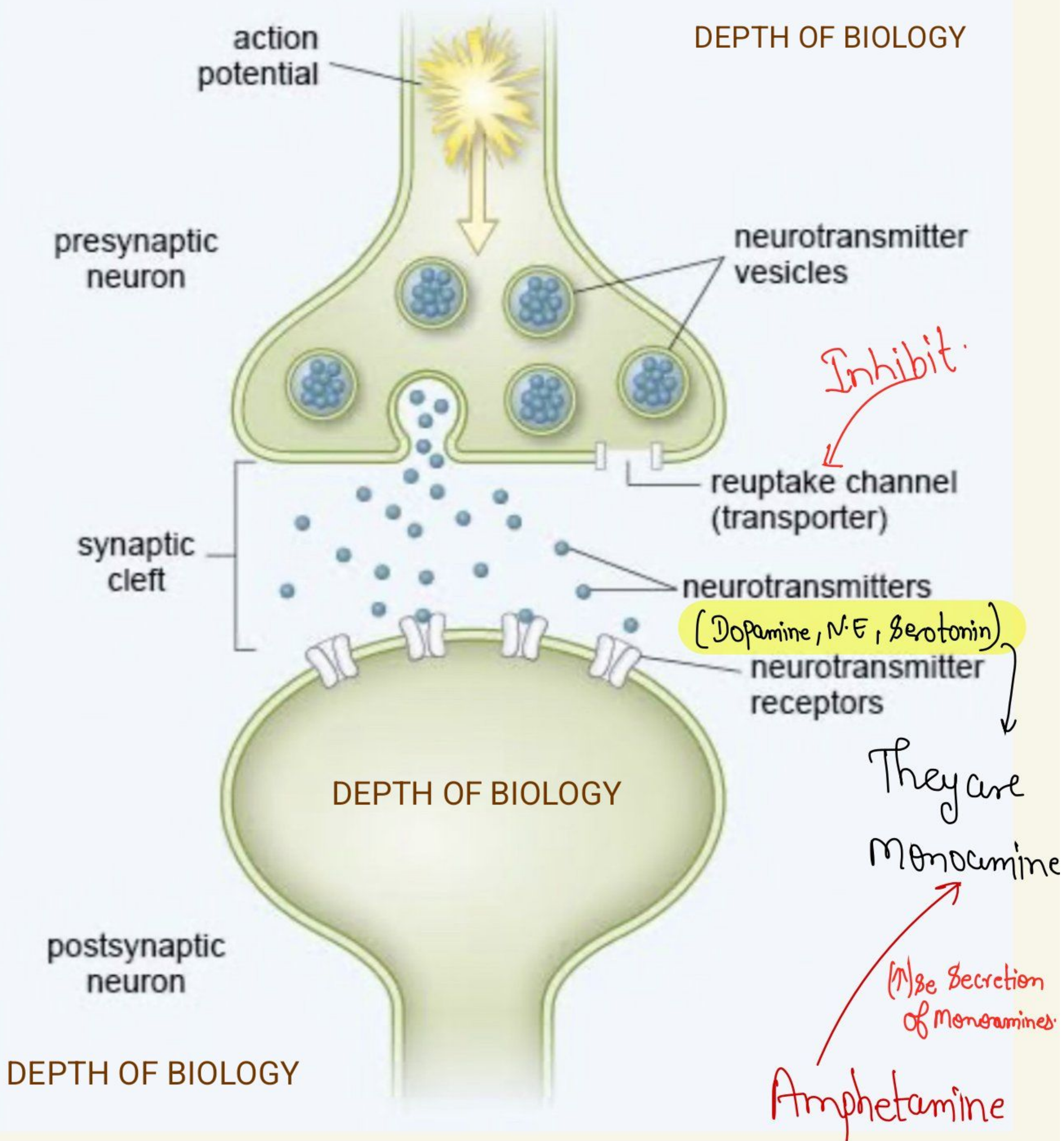
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③ CNS Stimulants & Nootropics.

Drug which stimulate CNS is called CNS Stimulant drug.





Nootropics / Cognition Enhancer / CerebroActive drugs.

Noos = Mind

Tropein = Change / Turn.

Drug which Improve
Memory.
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Used in case of

- Alzheimer dz.
- Learning defect.
- Mania.

Classification of Nootropics

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Cholinergic
Activator

Rivastigmine

Glutamate
(NMDA)
Antagonist

Memantine

Other
drug.

Citicoline

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