

01 - 1. Introduction

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The term pharmacodynamics refers to the study of the mechanism of action of drugs (the effect of drugs on the body). Most psychotropics affect neurotransmitters of the brain. This effect can occur at various levels. Level of action in neurotransmission cycle Examples Synthesis L-tryptophan, L-dopa Storage Reserpine depletes NA and DA. Release from storage Amphetamine stimulates release of NA and DA Reuptake SSRI, TCA, cocaine – dopamine reuptake, Bupropion – dopamine & Noradrenaline reuptake Degradation MAO inhibitors, Acetyl cholinesterase inhibitors e.g. donepezil Pre synaptic receptors Clonidine, lofexidine at alpha2. Post synaptic receptors Most antipsychotics at D2 Partial agonism Aripiprazole – D2; Bupropion 5HT1A; Clonazepam – BDZ receptor; Buprenorphine – opioid receptor mu Antagonism Flumazenil for benzodiazepines, antipsychotics at D2 Full agonism Benzodiazepines at GABA-A complex, bromocriptine for dopamine Second messengers Lithium at inositol level.

Refer to Neurochemistry SPMM Notes for more details of different neurotransmitters, their structure and receptor actions.

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