

Serotonin - Anxiety + depression

depression can be linked w/ absence of a serotonin receptor  
→ depression in PD linked to reduced serotonergic function

Stimulating 5HT-1A in raphe w/ Buspar relieves anxiety.

↓ Serotonin → ↑ Spirituality

Cocaine blocks receptors, amphetamines open

GABA - inhibition

- Benzodiazepine "anxiolytics" increase GABA receptor activity in CNS  
→ Sedative, muscle relaxant, anticonvulsant, cognition-impairing effects.

Anxiolytic (anti anxiety) ← alcohol, barbiturates, benzodiazepines, depends on GABA

Glutamate - Neuroplasticity - struct. changes during development → in resp. to environmental factors

80% of all synapses in cortex use glutamate

Glutamate dys. related to cause of Schitzo.

(dysbindin mutations)

PCP blocks Glutamate receptor

Dopamine - Reward

- lives in Ventral tegmental + Substantia

- projects to Frontal lobe, Striatum nigra  
(motivation w/ Body movement)

Made from Tyrosine ( $\rightarrow$  Dopa  $\rightarrow$  Dopamine  $\rightarrow$  reup.)

\* All things rewarding things activate dopamine \*

- amphetamines, Cocain, chocolate,  
Marijuana, Food

Genuine Smiles involve dopamine controlled  
basal ganglia, false smiles do not

Immediate Reward VS Long-term reward

relies on dynamic interactions b/w

Pre-frontal cortex & Nucleus Accumbens

Cocain blocks reuptake of dopamine,  
over stimulus.  $\rightarrow$  effects are stronger  
in men.

Schitz. patients = enhanced response to dopamine  
releasing effects of amphetamine

## Atypical Neurotransmitter system

- Endogenous Marijuana = Anandamide

## Chocolate

- Xanthine
- Fats induce release of endogenous opiates
- presence of Amphetamine-like drug (PEA)
- anandamide
- Glucose
- Estrogen-like compound (good for men)
- Mg salts, good for post-menopausal
- Anti-oxidants, flavonoids = 1 glass wine