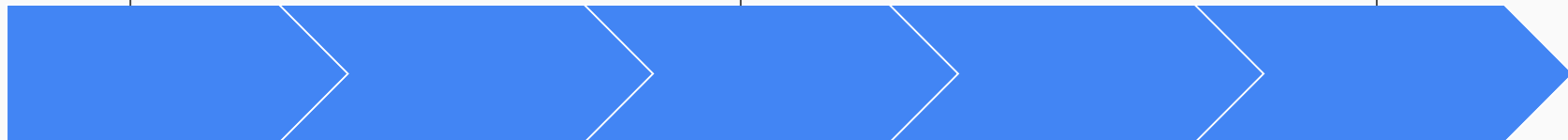


Schizophrenia

Dysfunction Junction - MCDB 3651

Caitlyn Cochran, Stephanie Salazar, Margo Dyer, & Rachel Golla

Historical Context
&
Relevance



Symptoms
&
The Brain



Drugs
&
MOA



Clinical
Trial



Resources



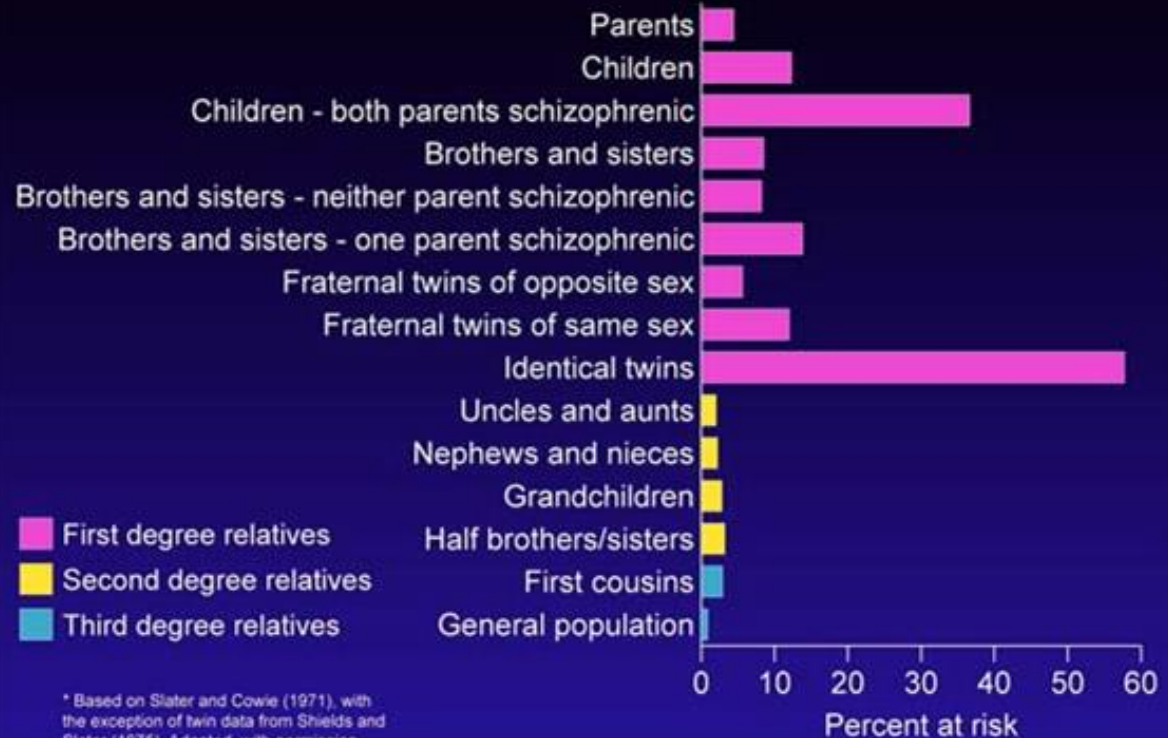
Questions

Schizophrenia

Historical Context

- What is Schizophrenia?
 - Schizophrenia is a rare, chronic, and severe mental disorder.
- Prevalence of Schizophrenia?
 - Less than 1% of the population.
 - Rare in children, but can emerge before puberty.
- Risk Factors?
 - Genetics
 - Environment
- Relevance?
 - Premature Mortality
 - Linkage to other disorders

Rates of Schizophrenia Among Relatives of Schizophrenic Patients*



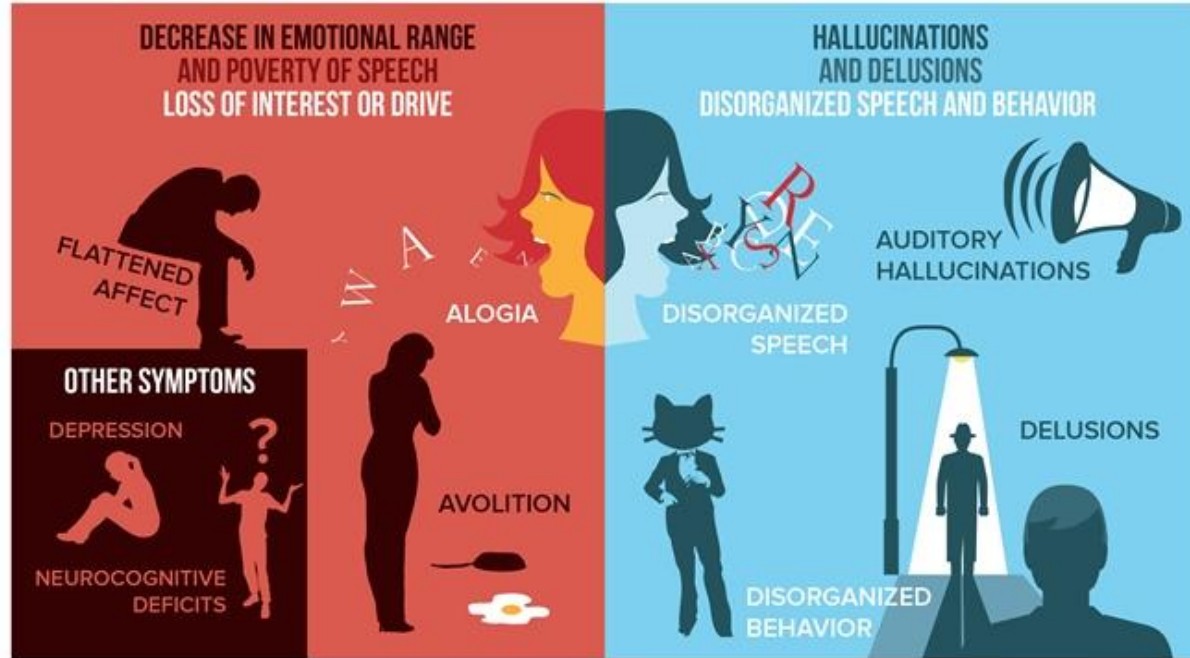
* Based on Slater and Cowie (1971), with the exception of twin data from Shields and Slater (1975). Adapted, with permission, from Tsuang and Vandermeij (1980).

Symptoms

- Positive - Psychotic behavior
- Negative - “Flat affect”
- Cognitive
- Symptoms begin between the ages 16 and 30.
 - Males - late teens/early twenties
 - Females - late twenties/early thirties
- Men are affected more than women
- Symptoms are more severe in men than women

NEGATIVE AND POSITIVE SYMPTOMS IN SCHIZOPHRENIA

“Positive” and “negative” do not refer to the symptom’s benefit or lack thereof but, rather, the nature of how they affect the person with schizophrenia. Positive symptoms are additions to consciousness (hallucinations) whereas negative symptoms are decreases in functionality (poverty of speech)



The Voices

Provided by Medford Police Department

Demo



Schizophrenia Demo

The Brain

Structural & Functional changes in the cortex

Enlarged Lateral Ventricles- less cortical matter

- Affects Neurodevelopment
- PET & MRI Scans

BRAIN MAP

Prefrontal Cortex (DLPFC)

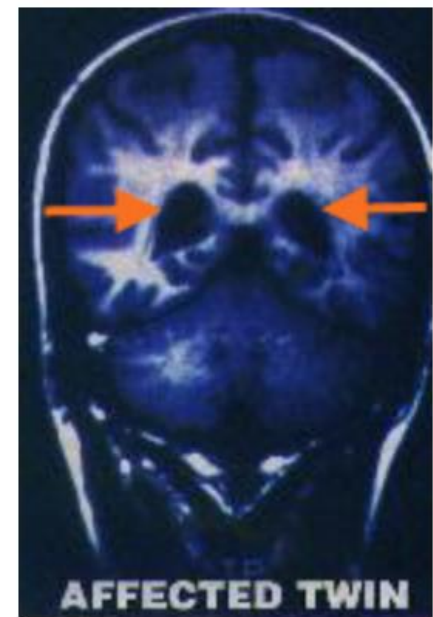
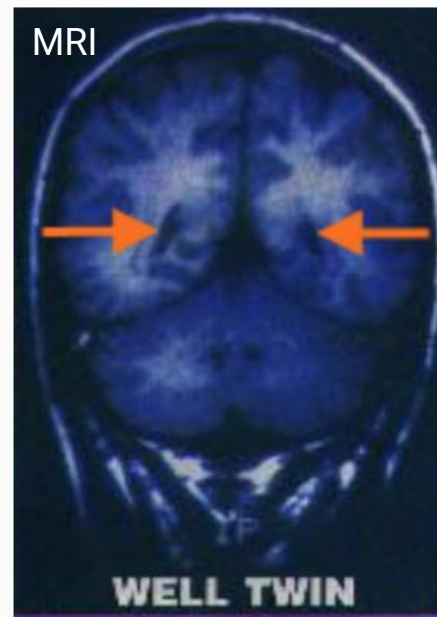
Temporal Lobe

Thalamus

Hippocampus; CA1

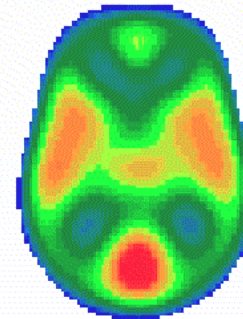
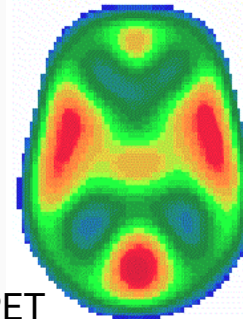
Basal ganglia

Striatum



without
schizophrenia

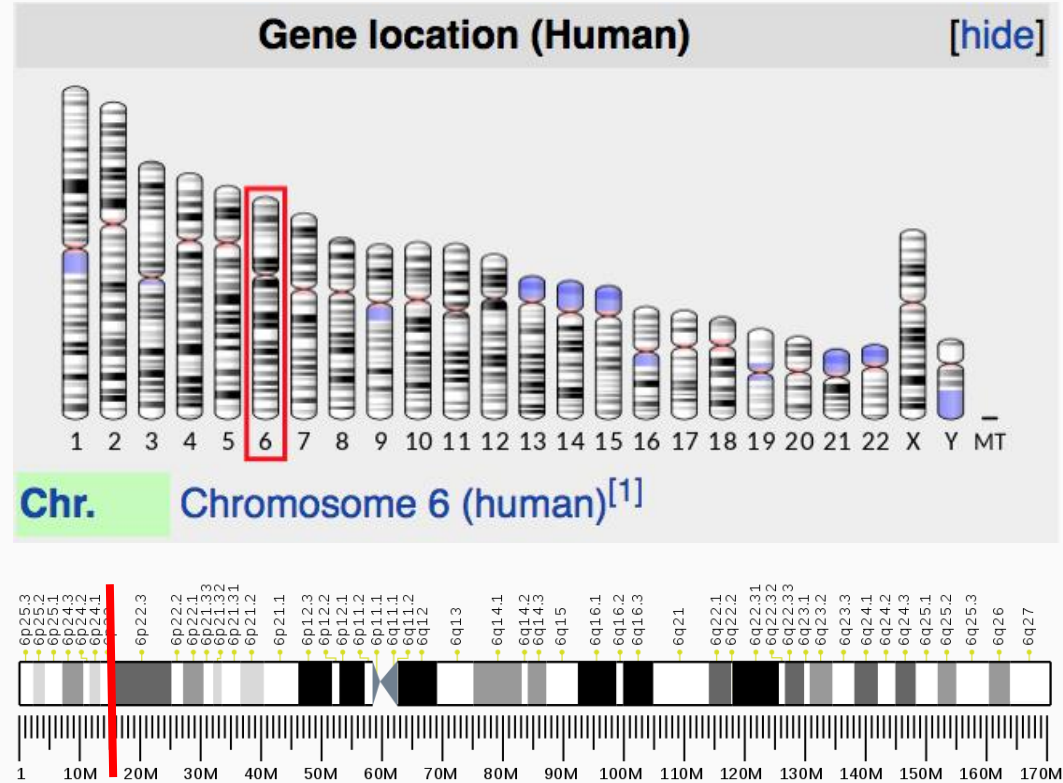
with
schizophrenia



PET

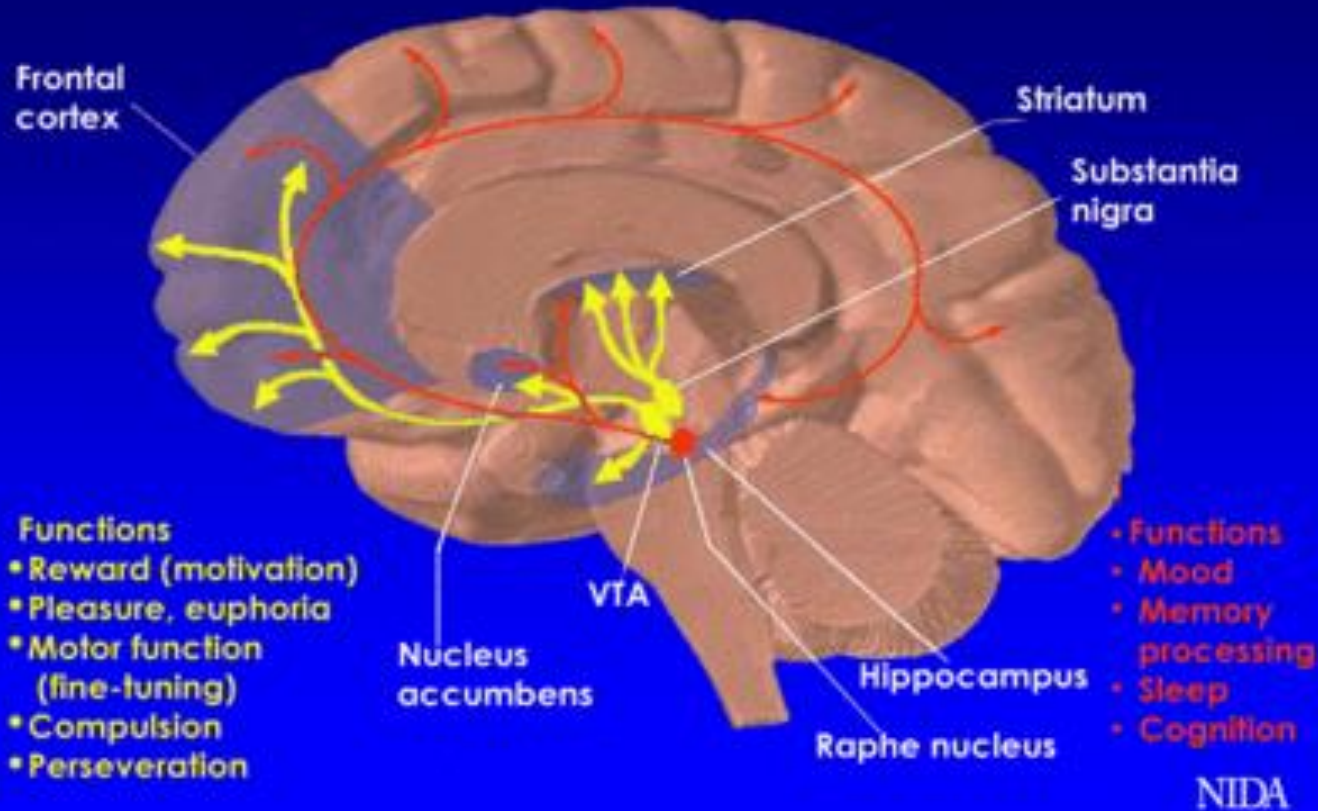
Dysbindin-1 (DTNBP1)

- Dystrobrevin-binding protein 1
- In the brain, dysbindin is found primarily in axon bundles.
 - Maintains the structure and stability of the neuronal synaptic membrane
- Widespread distribution in the brain
 - Expressed by many neuron populations.
- Dysbindin expression
 - Decreased in schizophrenia.



Dopamine Pathways

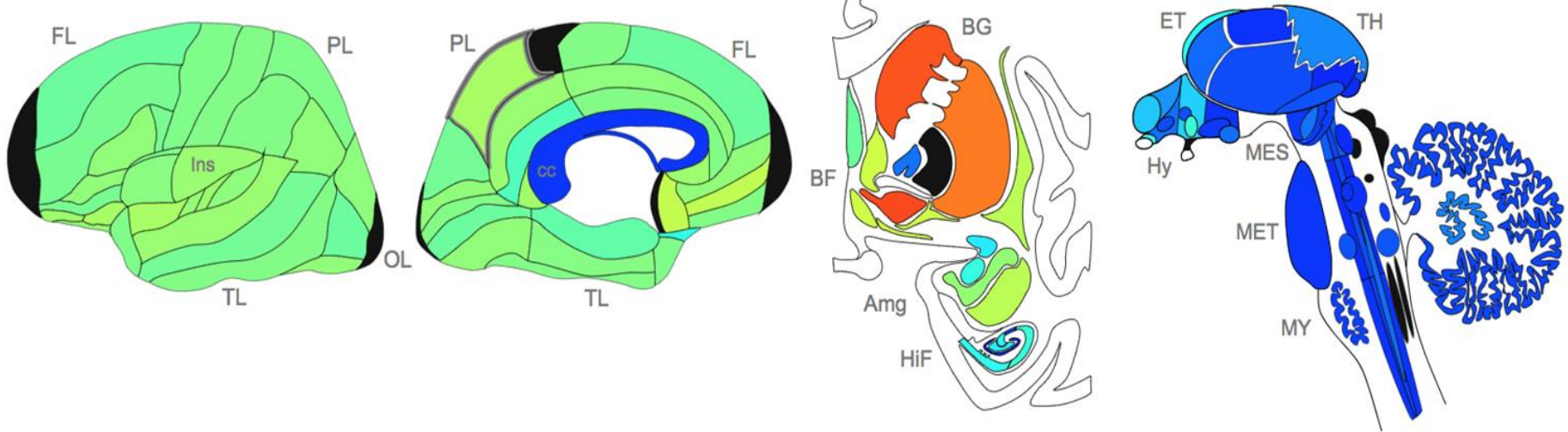
Serotonin Pathways



Dopamine & Serotonin Hypotheses

Dopamine (D2) Receptors

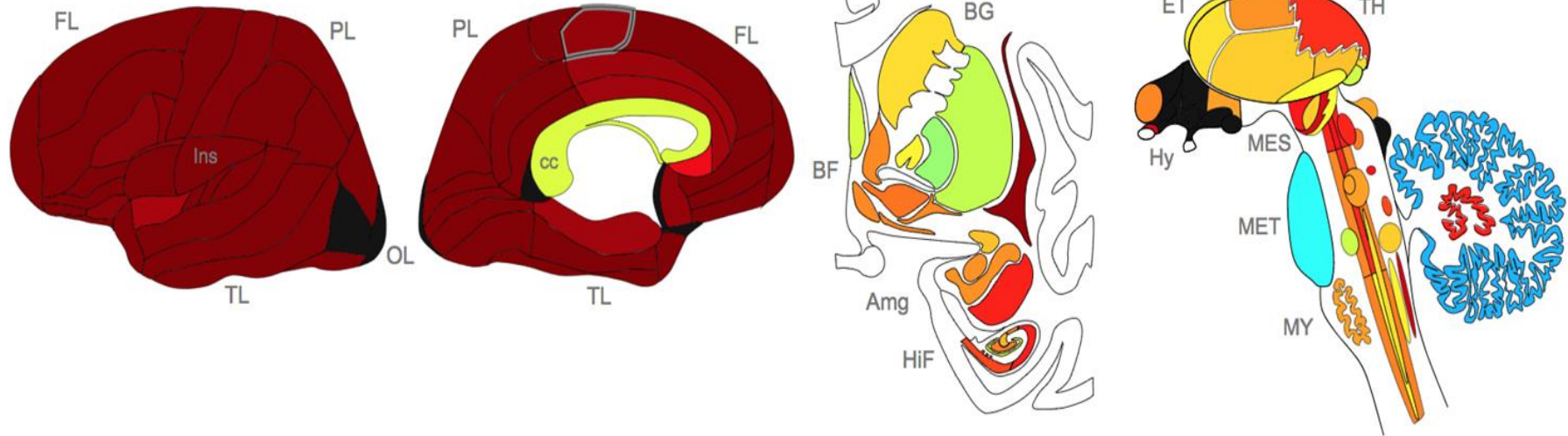
Donor: ■ H0351.1012, 31 yrs, M, White or Caucasian



Selected Structure: [precuneus](#), z-score: 1.20615, log2 level: 5.3616, view in: [planar view](#) [brain explorer](#)

Serotonin (5HT2A) Receptors

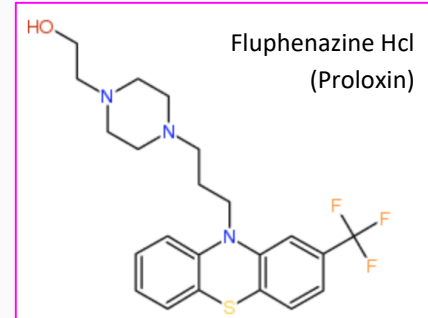
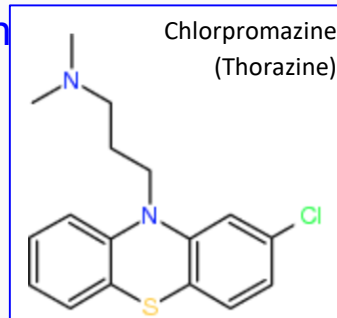
Donor: ■ H0351.2001, 24 yrs, M, Black or African American



Selected Structure: [paracentral lobule, anterior part](#), z-score: 0.817567, log2 level: 9.779, view in: [planar view](#) [brain explorer](#)

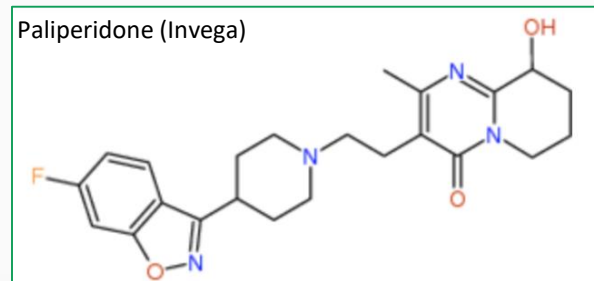
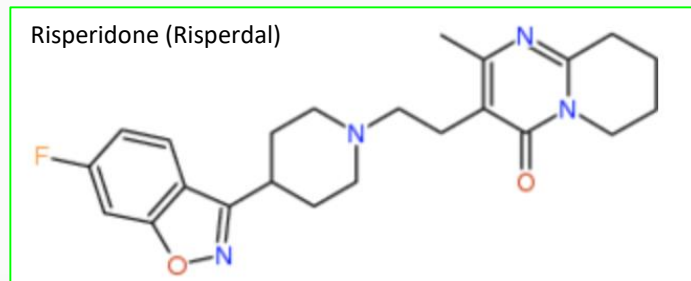
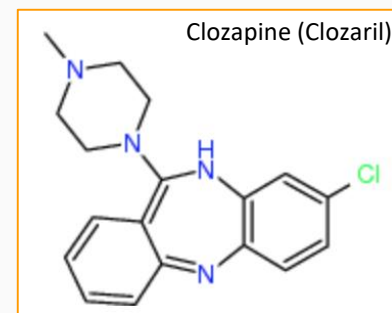
Older (Typical) Antipsychotic Medications (First Generation)

- Haloperidol (Haldol)
 - First drug developed with specific antipsychotic action and would serve as the prototype for the phenothiazine class of drugs
- Chlorpromazine (Thorazine)
- Fluphenazine Hcl (Proloxin)
- Perphenazine (Etrafon)
 - No longer available in the U.S.



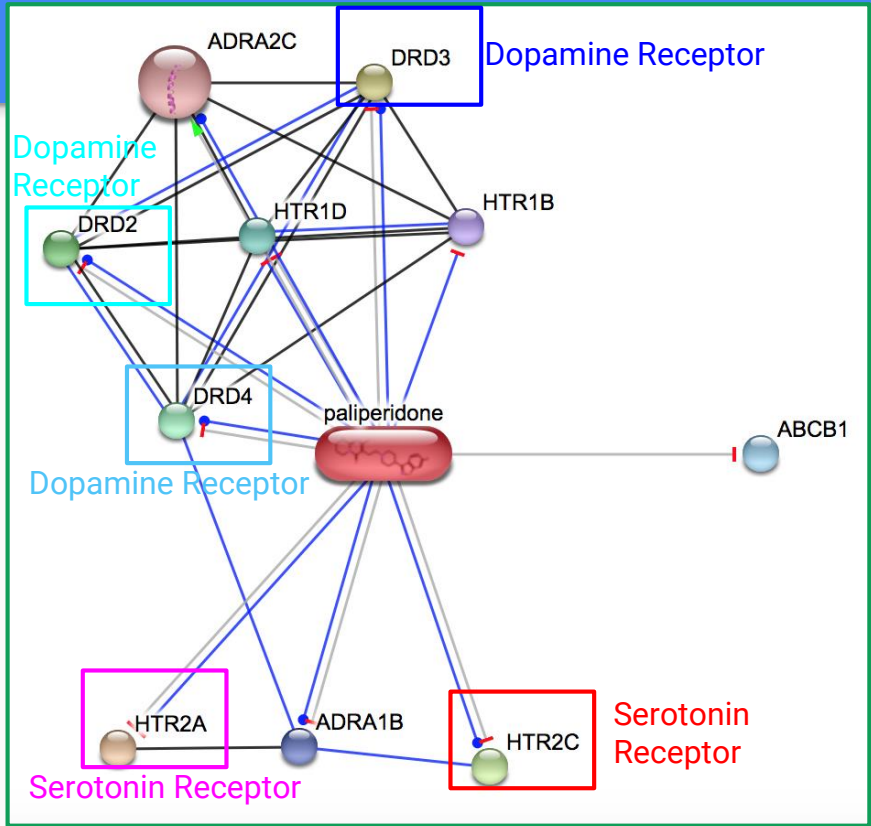
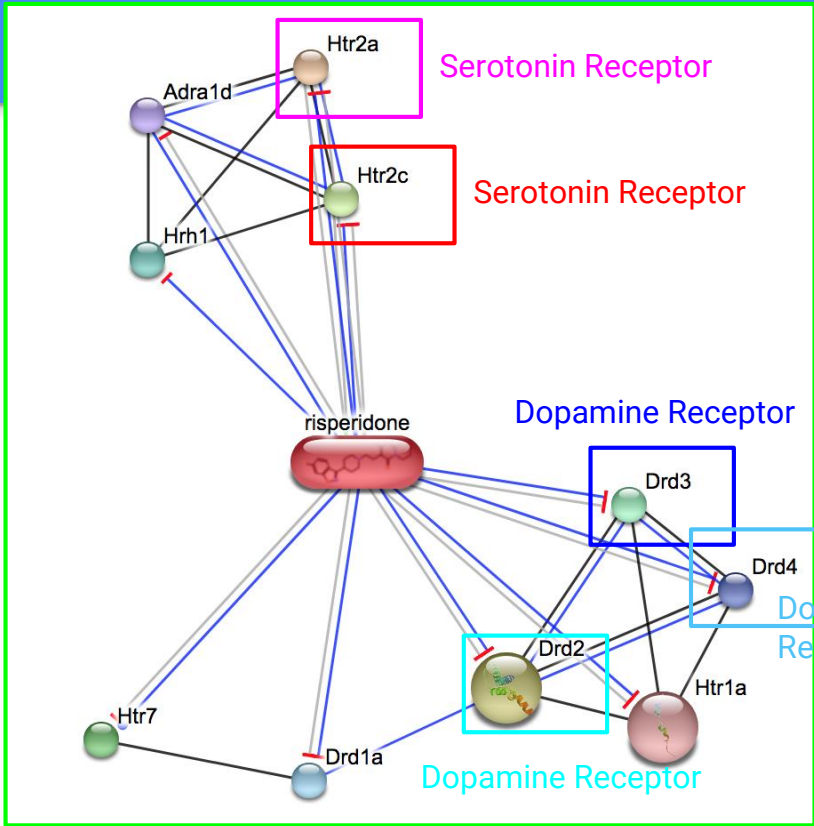
Newer (Atypical) Antipsychotic Medications (Second Generation)

- Clozapine (Clozaril)
 - The first drug of second generation
- Quetiapine (Seroquel)
- Olanzapine (Zyprexa)
- Risperidone (Risperdal)
- Lurasidone (Latuda)
- Paliperidone (Invega)
- Aripiprazole (Abilify)
- Asenapine (Saphris)
- Iloperidone (Fanapt)
- Ziprasidone (Geodon)

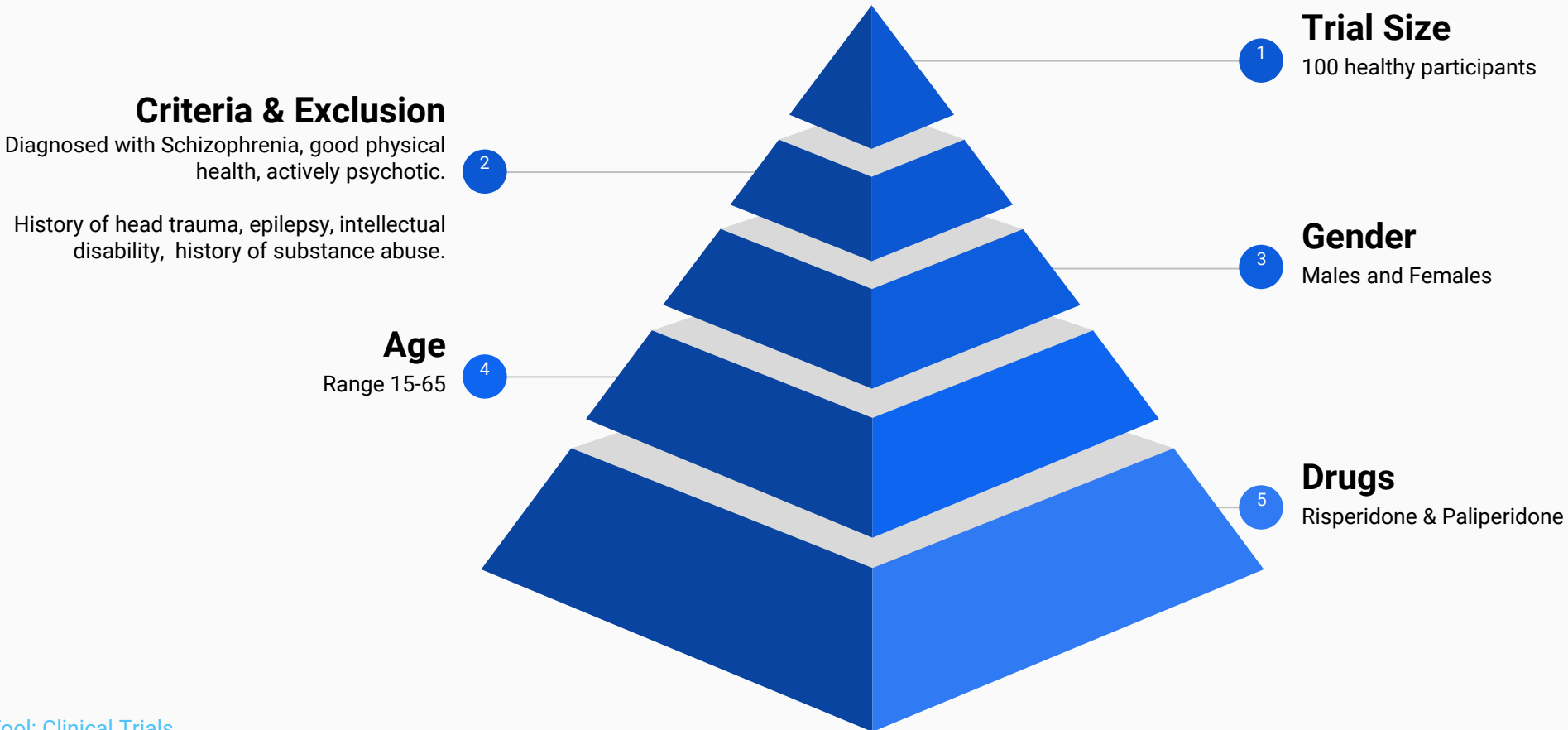


Mechanism of Action

Risperidone & Paliperidone - (Antagonists)



Created Clinical Trial





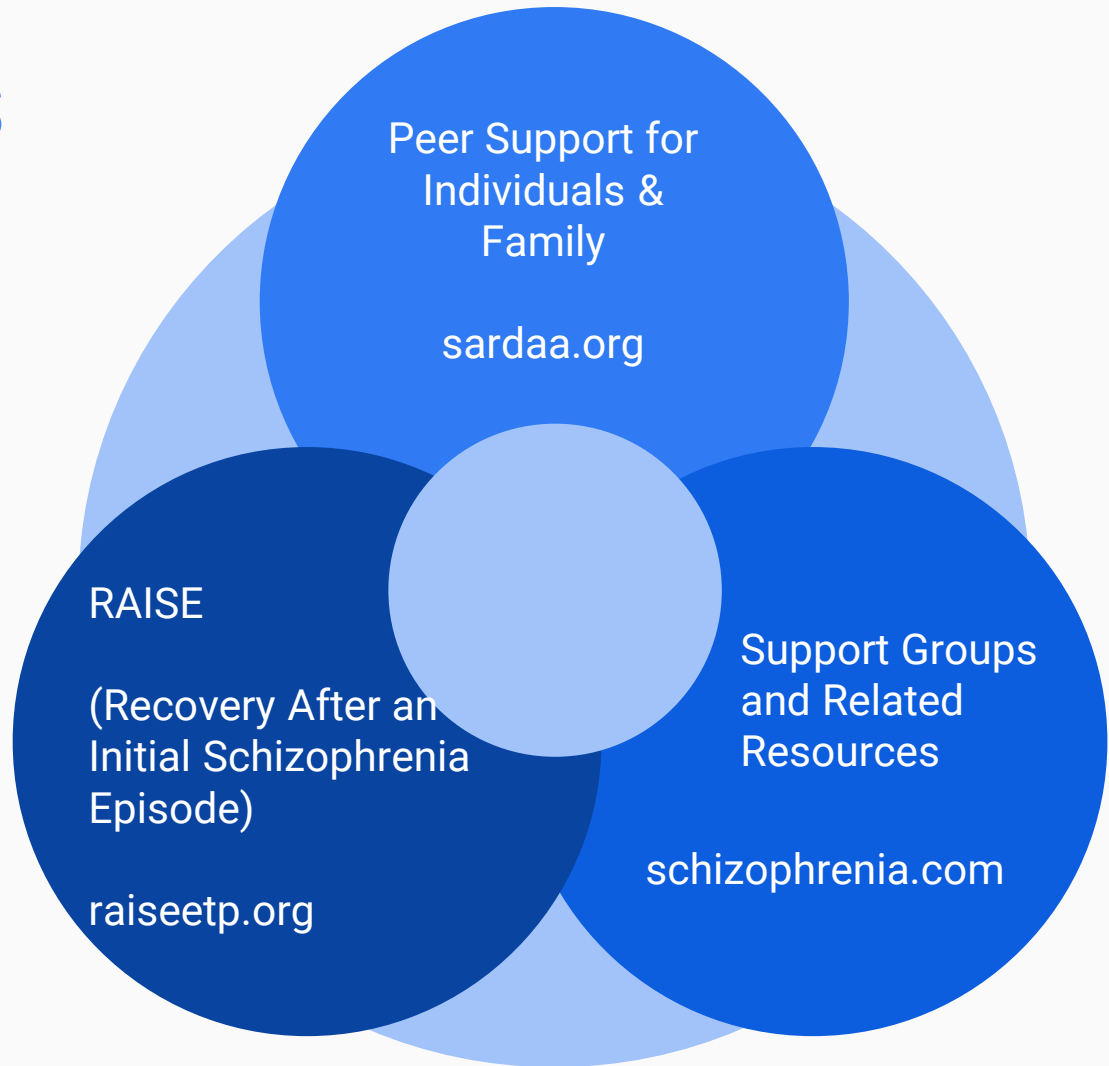
CBTp

Cognitive Behavioural
Therapy for psychosis

Therapy

- Medication in combination with therapy has shown to have the greatest success
- Specifically CBTp
 - Establish thoughts between
 - Thoughts, feelings & actions
- Process
 - Assessment
 - Engagement Phase
 - ABC Model
 - Activating Events
 - Patient's Beliefs
 - Cause
 - Goal Setting
 - Teaching techniques and strategies

Resources



Questions?

Thank you!



CANDY!

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