

# Atypical Antipsychotics and Incidence of Diabetes

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## Atypical Antipsychotic Drugs

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- Risperidone-Risperdal
- Olanzapine-Zyprexa
- Quetiapine-Seroquel
- Aripiprazole-Abilify
- Ziprasidone-Geodon
- Clozapine-Clozaril

## Incidence of Diabetes

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- Increased incidence of Type II diabetes and insulin resistance in schizophrenic patients (insulin shock therapy)
- Antipsychotic drugs increase incidence of diabetes 4-5% to 10-12%
- Discontinuing drug improves symptoms or allows for discontinuance of diabetes meds

## Med Watch Reports

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- Of newly diagnosed diabetes cases in pt on atypical antipsychotics mean age = 38.9yo
- General population expect Type II onset mid to late 50's and 60's
- Two to 1 male to female ratio (equal or increased in females normally)
- High glucose ranges (up to 700mg/dl)

## Scope of the Problem

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- 70% of pt treated with clozapine gain significant amounts of weight
- 40-80% of pt on olanzapine gain significant weight
- 40-60% of pt gain weight on tricyclic antidepressants
- Weight gain >8-10% of initial body weight is not uncommon

## Possible Mechanisms of Drug Induced Weight Gain

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- Decrease in metabolic rate (mitochondrial fxn)
- Carbohydrate craving
- Receptor mediated actions
- Serotonin receptors 5-HT inhibition
- Histamine H1 receptor inhibition
- Beta 3 adrenergic receptors
- Novel actions: glucose transport, increase in adipose cells

## How Do Antipsychotic Drugs Produce Adverse Effects on Glucose Metabolism

- Direct peripheral block of glucose uptake in liver, fat, pancreas, and muscle
- Indirect peripheral: increased fat (weight gain)
- Indirect central: Dopamine D2 receptors, Serotonin 5-HT receptors and Histamine H1 receptors

## Challenge of Treatment

- Multifactorial effects
- May have to do with central blocking of glucose sensing
- Blocking of muscle reuptake of glucose, triglyceride elevation, reduced responsiveness to insulin and a change in insulin sensitivity