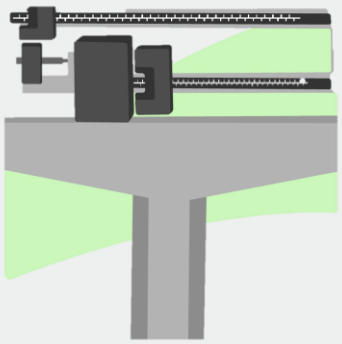
American Association of Psychiatric Pharmacists (aapp.org)

Metabolic Side Effects of Psychiatric Medications

Kristin Waters, PharmD, BCPS, BCPP, October 2020



Higher Risk of Metabolic Syndrome
People living with a mental illness may have a higher rate of metabolic syndrome compared to the general population due to:

- Higher **smoking** rate
- Higher level of **obesity** and **abdominal obesity** (larger waistline)
- Increaed level of **cortisol** (stress hormone)
- Some **psychiatric medications**
- Lower level of **physical activity**
- Poor **diet**
- Less likely to **access general health care**

Metabolic syndrome is a group of risk factors that can increase a person's risk of having a stroke, heart disease (including having a heart attack), and diabetes. The risk factors for metabolic syndrome include:

- Abdominal obesity (larger waistline)
- High fasting blood sugar or diagnosed with diabetes
- Low levels of HDL cholesterol (the "good" cholesterol) in blood
- High levels of triglycerides (fat) in blood
- High blood pressure

Approximately **1 out of 3** Americans currently meet criteria for metabolic syndrome. It is becoming more common as the rates of obesity and diabetes in the United States continues to increase. People with mental illness may experience higher rates of metabolic syndrome than the general population for several reasons (see side panel), including treatment with medications that increase this risk. Metabolic syndrome can lead to a shorter life expectancy as well as a poorer quality of life.

Metabolic Effects of Common Psychiatric Medications:

- Weight gain is the most common metabolic side effect associated with psychiatric medications (see table on next page)
  - Medications affect everyone differently → not everyone will experience the same side effects
- Weight gain can lead to problems with blood pressure, cholesterol, or maintaining a regular blood sugar
  - These side effects may sometimes occur even without weight gain
    - Example: Venlafaxine (Effexor®) may contribute to a high blood pressure

What role do medications have in causing or worsening metabolic syndrome?

- Some medications make you feel hungrier or crave sweet and fatty foods. Treating depression or other conditions can restore appetite, which may lead to weight gain.
- Certain medications may slow down how quickly your body burns calories.
- Medications can affect signals in your body that tell you when you're full, making it harder to stop eating.
- Some medications can make blood sugar, cholesterol, or triglycerides rise.

©2026 The American Association of Psychiatric Pharmacists (AAPP). AAPP makes this document available under the Creative Commons Attribution-NoDerivatives 4.0 International License. Last Updated: January 2016.

Key components of weight management:

Medications that May Affect Weight		
Antidepressants	Mood Stabilizers	Antipsychotics
Weight Loss		
Bupropion (Wellbutrin®)	Topiramate (Topamax®)	
Small to No Effect on Weight		
Fluoxetine (Prozac®) Sertraline (Zoloft®) Citalopram (Celexa®) Escitalopram (Lexapro®) Vilazodone (Viibryd®) Vortioxetine (Trintellix®) Trazodone (Desyrel®) Duloxetine (Cymbalta®) Venlafaxine (Effexor®) Desvenlafaxine (Pristiq®) Levomilnacipran (Fetzima)	Lamotrigine (Lamictal®) Oxcarbazepine (Trileptal®)	Haloperidol (Haldol®) Fluphenazine (Prolixin®) Perphenazine (Trilafon®) Ziprasidone (Geodon®) Aripiprazole (Abilify®) Brexpiprazole (Rexulti®) Cariprazine (Vraylar®) Lurasidone (Latuda®) Lumateperone (Caplyta®) Iloperadone (Fanapt®) Asenapine (Saphris®)
Weight Gain		
Amitriptyline (Elavil®) Nortriptyline (Pamelor®) Clomipramine (Anafranil®) Desipramine (Norpramin®) Doxepin (Silenor®) Imipramine (Tofranil®) Mirtazapine (Remeron®) Paroxetine (Paxil®) Phenelzine (Nardil®) Tranylcypromine (Parnate®) Isocarboxazid (Marplan®)	Valproate (Depakote®) Carbamazepine (Tegretol®) Lithium (Eskalith®, Lithobid®)	Clozapine (Clozaril®) Olanzapine (Zyprexa®) Olanzapine/Samidorphan (Lybalvi®) Quetiapine (Seroquel®) Risperidone (Risperdal®) Paliperidone (Invega®) Thioridazine (Mellaril®) Chlorpromazine (Thorazine®)

Diet

- Weight loss occurs by using more calories or energy than caloric intake through the diet
- Increase vegetable and protein portions and decrease carbohydrate (starch) and sugar portions
- Build balanced meals:
    - Choose high-fiber carbohydrates instead of refined carbs
        - Dark leafy greens like spinach and kale
        - Green peas
        - Broccoli
    - Consistent meal timing to reduce binge eating
- Reduce higher-risk foods:
    - Cutting these items out of diets entirely is not necessary, but we should try to limit:
        - Sugary beverages
        - Fast foods and fried foods

- Better eating habits:
    - Avoid trendy crash diets that are not possible to continue over an extended period of time
    - Eat slowly
    - Avoid skipping meals as it can cause binging later down the line
    - Stay hydrated

Exercise

- Design an exercise plan focusing on the F.I.T.T. formula
- Think about the frequency, intensity, time, and type of exercise that is possible and enjoyable

Goals for Exercise (F.I.T.T)	
Frequency	3-5 times per week
Intensity	Include a variety of easy, moderate, and vigorous
Time	Start small and increase overtime to a total of 150 minutes of moderate-intensity exercise per week
Type	Mixture of cardio, strength, and flexibility training

- NEAT (Non-Exercise Activity Thermogenesis)
    - Routine exercise may not be realistic for some patients. Here are ways to incorporate movement into your daily life:
        - Take stairs
        - Stand during phone calls
        - Park farther away from entrances
        - Stand up and stretch for 5 minutes every hour

Sleep

- Poor and not enough sleep can slow the body's metabolism and increase appetite by increasing cortisol (stress hormone), appetite, and insulin resistance
- Aim for 7-9 hours per night
- Practice good sleep hygiene:
    - Limit caffeine after noon
    - Avoid screentime 30-60 minutes before bed
    - Keep naps under 30 minutes and before 3 PM
    - Avoid heavy meals or alcohol before bed
- Screen for sleep apnea if:
    - Loud snoring
    - Daytime fatigue
    - Weight gain

Medications

- Talk with a provider about weight gain concerns
- Switch to an antipsychotic, antidepressant, or mood stabilizer that does not cause weight gain (with help of a provider). Ask your provider:
    - "Does this medication increase weight or blood sugar?"
    - "Are there lower-risk alternatives that might suit my condition?"
- Do not stop medications on your own

- Some studies suggest other medications can help prevent weight gain caused by antipsychotics:
  - Metformin: a medication commonly used for diabetes or prediabetes. It may help prevent weight gain and improve blood sugar
  - GLP-1 medications: help lower blood sugar and can reduce appetite, which may support weight control
  - Topiramate: sometimes used to help reduce appetite and support weight control

Support

- Consider the In SHAPE Fitness Plan (Self-Health Action Plan for Empowerment). Health mentors and patients made diet and exercise goals based on individual goals, motivation, and readiness for making changes in behavior and routine
  - Exercise activities included: classes at local gyms, walking, swimming, tai-chi, yoga, strength training, or cardiovascular training
  - Progress was assessed on a weekly basis; points and prizes were awarded for certain milestones
  - At the end of 9 months, patients had a reduction in waist circumference, greater fitness satisfaction, mental health function, and a decrease in negative symptoms
- Takeaway: Team up with a fitness trainer or friend to help establish goals and a plan, make exercise more sociable and enjoyable, assess progress, and celebrate success
- When to contact your provider:
  - Rapid weight gain
  - Increased thirst or urination
  - Dizziness from blood pressure changes

Go online to find more information.

https://aapp.org/resource/patients

Important Disclosure: This information is being provided as a community outreach effort of the American Association of Psychiatric Pharmacists. This information is for educational and informational purposes only and is not medical advice. This information contains a summary of important points and is not an exhaustive review of information about the topic. Always seek the advice of a physician or other qualified medical professional with any questions you may have regarding medications or medical conditions. Never delay seeking professional medical advice or disregard medical professional advice as a result of any information provided herein. The American Association of Psychiatric Pharmacists disclaims any and all liability alleged as a result of the information provided herein.