

## Be prepared to adjust dosing of psychotropics after bariatric surgery

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### Disclosures

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Approximately 113,000 bariatric surgeries were performed in the United States in 2010; as many as 80% of persons seeking weight loss surgery have a history of a psychiatric disorder.<sup>1,2</sup>

Bariatric surgery can be “restrictive” (limiting food intake) or “malabsorptive” (limiting food absorption). Both types of procedures can cause significant changes in pharmacokinetics. Bariatric surgery patients who take a psychotropic are at risk of toxicity or relapse of their psychiatric illness because of inappropriate formulations—immediate-release vs sustained-release—or incomplete absorption of medications. You need to anticipate potential pharmacokinetic alterations after bariatric surgery and make appropriate changes to the patient’s medication regimen.

### Pharmacokinetic concerns

Roux-en-Y surgery is a malabsorptive procedure that causes food to bypass the stomach, duodenum, and a variable length of jejunum. Secondary to bypass, iron deficiency anemia is a common nutritional complication.

Other changes that affect the pharmacokinetics of psychotropics after bariatric surgery include:

- an increase in percentage of lean body mass as weight loss occurs
- a decrease in glomerular filtration rate as kidney size decreases with postsurgical weight reduction
- reversal of obesity-associated fatty liver and cirrhotic changes.

With time, intestinal adaptation occurs to compensate for the reduced length of the intestinal tract; this adaptation pro-

duces mucosal hypertrophy and increases absorptive capacity.<sup>3</sup>

### Medications to taper or avoid

The absorption and bioavailability of a medication depend on its dissolvability; the pH of the medium; surface area for absorption; and GI blood flow.<sup>4</sup> Medications that have a *long absorptive phase*—namely, sustained-release, extended-release, long-acting, and enteric-coated formulations—show compromised dissolvability and absorption and reduced efficacy after bariatric surgery.

Avoid **slow-release formulations**, including ion-exchange resins with a semipermeable membrane and those with slowly dissolving characteristics; substitute an immediate-release formulation.

**Medications that require acidic pH** are incompletely absorbed because gastric exposure is reduced.

**Lipophilic medications** depend on bile availability; impaired enterohepatic circulation because of reduced intestinal absorptive surface causes loss of bile and, therefore, impaired absorption of lipophilic medications.

**Medications that are poorly intrinsically absorbed** and undergo enterohepatic circulation are likely to be underabsorbed after a malabsorptive bariatric procedure.

**Lamotrigine, olanzapine, and quetiapine** may show decreased efficacy because of possible reduced absorption.

The **lithium** level, which is influenced by volume of distribution, can become toxic postoperatively; consider measuring the serum lithium level.

### References

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