

# Postoperative Delirium in the Geriatric Patient



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## KEYWORDS

• Postoperative delirium • Geriatric • Risk factors • Screening • Management

## KEY POINTS

- Delirium is a common postoperative complication in the geriatric population.
- Postoperative delirium is independently associated with increased morbidity and mortality.
- Validated screening tools are useful for early detection.
- Treatment is aimed at addressing underlying causes and managing symptoms.

## INTRODUCTION

Postoperative delirium (POD) is a common complication in older surgical patients and is associated with significantly prolonged hospitalizations, cognitive impairment, functional decline, and increased 6- to 12-month mortality rate.<sup>1–5</sup> Postoperative delirium has a reported incidence from 10% to 70% depending on the criteria used for diagnosis, the population studied, and the type of surgical procedure. Higher incidences tend to be reported in the oldest, most medically complex patients after vascular, cardiac, or hip fracture operations.<sup>6–9</sup> Skills essential for clinicians involved in the perioperative care of geriatric patients include the ability to (1) identify high-risk patients, (2) promptly diagnose POD, and (3) effectively manage patients with POD.

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## RISK FACTORS

Postoperative delirium is a complex, geriatric syndrome that results from interplay between a patient's baseline vulnerabilities (predisposing factors) and the insults that occur throughout the perioperative course (precipitating factors; [Table 1](#)).<sup>10</sup> Although many of the predisposing risk factors are not amenable to change, identification of patients with these factors can allow caregivers to direct preventive efforts to at-risk patients (see Management below). Because of the heterogeneity of the populations studied, research methodologies, and the syndrome itself, the reported risk factors for postoperative delirium vary. Predisposing risk factors frequently cited include age older than 65 years, functional impairment, preexisting neuropsychiatric conditions, and the presence of multiple medical comorbidities. Specific comorbidities associated with the development of postoperative delirium include heart failure, renal dysfunction, diabetes mellitus, and vascular disease.<sup>11</sup>

Together with knowledge of the predisposing factors, an understanding of the precipitating factors to which patients are exposed in the perioperative period can assist in directing perioperative care tailored to the individual patient. Although there is little evidence implicating a particular anesthetic agent or technique, emerging evidence suggests that the depth of anesthesia might play a role (see Current Controversies below). Other factors related to an increased risk of postoperative delirium include increased surgical duration, complexity, and invasiveness. Postoperative factors implicated in the development of delirium include admission to an intensive care unit, prolonged intubation/mechanical ventilation, poor pain management, and disrupted sleep patterns.

## DIAGNOSIS

Delirium is an acute confusional state with symptoms that wax and wane throughout the course of the illness. Because delirium is a complex syndrome with a variable

Table 1 Risk factors for postoperative delirium	
Predisposing Factors	Precipitating Factors
Age (>65 y)	Intraoperative
Neuropsychiatric conditions	<ul style="list-style-type: none"> <li>• Blood loss/blood transfusion</li> <li>• Surgery duration</li> <li>• Surgical urgency</li> <li>• Surgical complexity</li> <li>• Invasiveness of procedure</li> <li>• Depth of anesthesia</li> </ul>
<ul style="list-style-type: none"> <li>• Cognitive dysfunction</li> <li>• Dementia</li> <li>• Depression</li> <li>• Alcohol abuse</li> <li>• History of postoperative delirium</li> <li>• History of stroke</li> </ul>	Postoperative
Use of psychotropic medications	<ul style="list-style-type: none"> <li>• Admission to an ICU</li> <li>• Increased hospital/ICU length of stay</li> <li>• Increased duration of intubation/mechanical ventilation</li> <li>• Postoperative complications               <ul style="list-style-type: none"> <li>◦ Infection, stroke</li> </ul> </li> <li>• Use of physical restraints</li> <li>• Sleep disruption</li> <li>• Pain</li> <li>• Psychotropic medication use</li> </ul>
Poor physical status	
Medical comorbidities	
<ul style="list-style-type: none"> <li>• Heart failure</li> <li>• Kidney failure</li> <li>• Diabetes mellitus</li> <li>• Atrial fibrillation</li> <li>• Anemia</li> <li>• Atherosclerosis</li> <li>• Tobacco use</li> </ul>	

Abbreviation: ICU, intensive care unit.

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