

# Major Complications of Sickle Cell Disease and Nursing Implications

Complication	Nursing Implications
<b>Acute pain</b>	<ul style="list-style-type: none"> <li>• Conduct a comprehensive pain assessment.</li> <li>• Advocate for appropriate pain management.</li> <li>• Help patients to understand potential triggers and avoidance strategies.</li> <li>• Ensure patients understand how to take pain medicines to manage acute pain.</li> <li>• Encourage fluid intake (unless contraindicated, as in the presence of heart failure or kidney disease), ambulation, and incentive spirometry.</li> </ul>
<b>Chronic pain</b>	<ul style="list-style-type: none"> <li>• Understand the SCD complications that can contribute to chronic pain.</li> <li>• Perform a comprehensive patient assessment and history.</li> <li>• Obtain a thorough medication history.</li> <li>• Teach patients which types of chronic pain are more or less amenable to different interventions and how to use both medications and nonpharmacologic interventions most effectively.</li> </ul>
<b>Avascular necrosis</b>	<ul style="list-style-type: none"> <li>• Conduct a thorough chronic pain assessment (type of pain and underlying mechanism) and maintain a high index of suspicion for AVN.</li> <li>• Refer patients experiencing hip pain for orthopedic consultation.</li> </ul>
<b>Priapism</b>	<ul style="list-style-type: none"> <li>• Teach patients that priapism is a potential complication of SCD.</li> <li>• Emphasize importance of reporting events to prevent adverse sequelae and of seeking medical attention for prolonged episodes within four hours of onset.</li> <li>• Answer patient questions with the understanding that priapism can be an uncomfortable and anxiety-inducing topic.</li> <li>• Remind patients who experience priapism to pay attention to precipitating factors.</li> <li>• Be sensitive to the potential psychological effects the condition may have on patients.</li> </ul>
<b>Acute chest syndrome</b>	<ul style="list-style-type: none"> <li>• Conduct a comprehensive respiratory assessment, noting even subtle changes in respiratory status.</li> <li>• Teach and encourage the use of incentive spirometry.</li> <li>• Report any changes in respiratory status to the primary care provider.</li> </ul>
<b>Stroke</b>	<ul style="list-style-type: none"> <li>• Conduct neurologic assessments routinely in children and adults, and maintain a high index of suspicion for SCI in patients who demonstrate neurologic deficits.</li> <li>• Assess parents' understanding of the need to seek care for any emerging neurologic symptoms.</li> <li>• Teach parents about the importance of routine TCD ultrasound screening in children with SCA.</li> <li>• Remind parents that a child's poor academic performance may signal neurocognitive deficits resulting from SCIs.</li> <li>• Encourage parents to discuss poor academic performance with the health care team.</li> <li>• Report any acute changes in neurologic status to the primary care provider.</li> </ul>
<b>Splenic complications</b>	<ul style="list-style-type: none"> <li>• Conduct a thorough assessment of abdominal pain, closely monitor temperature, and anticipate the need for a sepsis evaluation.</li> <li>• Teach parents the importance of immunizations, how to measure their child's spleen, and the importance of recognizing fever early and notifying the child's health care team immediately.</li> </ul>
<b>Infection and sepsis</b>	<ul style="list-style-type: none"> <li>• Monitor vital signs and report elevations in temperature to the primary care provider.</li> <li>• Teach patients or their parents the importance of monitoring fever and receiving age-appropriate immunizations.</li> </ul>
<b>Organ failure</b>	<ul style="list-style-type: none"> <li>• Monitor renal function and IV fluid administration, especially in patients with a history of renal failure.</li> <li>• Assess kidney disease risk factors throughout hospitalization and maintain a high index of suspicion for proteinuria or reduced urine output.</li> <li>• For patients at high risk for kidney disease, discuss NSAID administration with the primary care provider prior to administration, and monitor fluid intake and urinary output.</li> <li>• Monitor patients for any changes in respiratory status and report even minor changes, such as elevated respiratory rate or decreased oxygen saturation, to the primary care provider, as they could be early signs of ACS.</li> <li>• Work with other members of the health care team to minimize disruptions to patients' dialysis schedule.</li> </ul>
<b>Psychosocial complications</b>	<ul style="list-style-type: none"> <li>• Assess patients, especially those with frequent ED visits and hospitalizations, for the presence of psychosocial health complications, in order to identify any who may benefit from social work, psychiatric, or case management referral.</li> </ul>

**Abbreviations:** ACS = acute chest syndrome. AVN = avascular necrosis. SCA = sickle cell anemia. SCD = sickle cell disease. SCI = silent cerebral infarction. TCD = transcranial Doppler. IV = intravenous. ED = emergency department. NSAID = nonsteroidal anti-inflammatory drug.

Adapted from "Understanding the Complications of Sickle Cell Disease." *American Journal of Nursing*, 119 (6), p.26–35. Copyright [2019] by Wolters Kluwer. Reprinted with permission.

