

measures for providing relief are discussed previously in this chapter and outlined in [Table 25-1](#).

The most common side effect of extensive irradiation is malaise, which may result from damage to the thyroid gland, causing hypothyroidism. Lack of energy is particularly difficult for adolescents because it prevents them from keeping up with their peers. Regular bedtimes and periodic rest times are important for these children, especially during chemotherapy, when myelosuppression increases the risk of infection and debilitation. Before discharge, the nurse should discuss a feasible school schedule with the parents and child. If alterations are necessary (such as elimination of strenuous physical education), they are discussed with the teacher, school nurse, and principal. Follow-up care is essential to diagnose hypothyroidism early and institute thyroid replacement.

An area of concern for adolescents is the high risk of sterility from irradiation and chemotherapy. Both irradiation to the gonads and drugs, particularly alkylating agents, may lead to infertility. Younger patients with a greater complement of oocytes are more likely to retain ovarian function.

Although sexual function is not altered, the appearance of secondary sexual characteristics and menstruation may be delayed in the pubescent child. Adolescents should be informed of these side effects early in the course of the diagnosis and treatment. Delayed sexual maturation may be an extremely sensitive and painful area for children (see [Chapter 15](#)).

## **Non-Hodgkin Lymphoma**

Approximately 800 new diagnoses of NHL occur each year in the United States, with an incidence of 10 children per 1 million younger than 20 years old ([National Cancer Institute, 2015b](#)). Histologic classification of childhood NHL is strikingly different from that of Hodgkin disease.

### **Staging and Prognosis**

NHL is heterogeneous, exhibiting a variety of morphologic, cytochemical, and immunologic features, not unlike the diversity seen in leukemia. Classification is based on the pattern of histologic presentation: lymphoblastic, Burkitt or non-Burkitt, or large cell.