Cryobanking is an established strategy to preserve fertility in young patients before treatment of testicular cancer, Hodgkin's disease and leukemia. Whether cryobanking should be offered to Hodgkin's patients is controversial because of poor pre-freeze semen quality. It is generally accepted that the semen quality worsens with higher disease stage. This study retrospectively determined whether cancer stage, disease type, and patient response to treatment (if the patient survived following cancer therapy) correlated to pre-freeze and post-thaw semen quality. The clinical records, results of pre-freeze and post-thaw semen analysis of 106 cancer patients (testicular cancer n=46; Hodgkin's n=49; leukemia n=10) since 1983 were reviewed. Semen analysis was done using a computer-assisted semen analyzer. The nitrogen-vapor technique using TEST-yolk buffer with glycerol as a cryoprotectant was used for freezing. Sperm motion characteristics (motility, curvilinear velocity, straight-line velocity, average path velocity, linearity, and amplitude of lateral head displacement) were evaluated. The average total sperm count, pre- and post-thaw motility, and other motion characteristics did not correlate with the disease stage or treatment outcome. Pre-freeze and post-thaw semen quality did not differ between testicular cancer and Hodgkin's patients. Leukemia patients had higher total motile sperm count than other groups (pre-freeze P<0.01; post-thaw P<0.03). Disease type, stage, and treatment outcome are not correlated to pre-freeze and post-thaw semen quality. Although, leukemia patients had advanced disease and worse prognosis, they still had a significantly higher total motile sperm count. Semen cryopreservation should not be denied to cancer patients because of type or extent of disease.