Sexual problems are common in most patients during and following cancer treatment and are especially frequent in survivors of breast cancer (50%), gynecologic cancer (50%), and prostate cancer (70%). The problems can be severe and generally persist over time (Schover, 2004).

Human sexuality includes three separate but intertwined aspects: body image, reproductive ability, and sexuality or sexual functioning. Body image, or the way individuals see themselves or think others see them, may be altered by changes in body appearance resulting from weight loss or gain, alopecia, mucositis, fatigue, or a variety of other changes that may not be visible to others. Changes in self-esteem may occur as a result of body image alterations, resulting in decreased desire and decreased sexual activity. Reproductive function, or the ability to bear or father children, may become impossible as a result of therapy-related infertility, and sexual functioning may be altered by changes in self-perception, decreased desire, general side effects of treatment (including cancer therapies and methods to manage side effects of therapy), or numerous other reasons. Some individuals are at higher risk for sexual side effects than others based on age, gender, type of cancer, type of cancer treatment, or concomitant medical or psychological illness (Krebs, 2001, 2005). See Figure 1 for a list of factors that contribute to sexual difficulties.

Pathophysiology

In men and women, three hormones regulate gonadal function. Any alteration in hormone production as a result of disease, cancer treatment, psychological factors, or nutritional status can result in sexual or reproductive dysfunctions. The hormones affected are included in the following list (Deneris, Huether, & Robinson, 2004).

**Men and Women**

- Gonadotropin-releasing hormone from the hypothalamus
- Luteinizing hormone and follicle-stimulating hormone from the anterior pituitary
- Estrogen and progesterone from the ovaries

**Women**

- Testosterone produced by the interstitial Leydig cells

**Chemotherapy**

Sexual and reproductive dysfunctions related to the administration of chemotherapy, hormonal agents, or biologics (see Figure 2) may be temporary or permanent. The effect of the newer targeted agents on sexual functioning remains, for the most part, unclear. In general, sexual side effects are related to one or more of the following individual drug characteristics (Krebs, 2005).

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