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SEXUALITY AND FERTILITY

Allison Winacoo, MSN, RN, CPNP, CPHON, BMTCN

How the Experts Treat Hematologic Malignancies

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Disclosure

- Nothing to disclose

Objectives

- Review dimensions of and challenges to sexual well-being in oncology
- Describe effects of cancer diagnoses and treatments on fertility
- Explore fertility preservation methods and future directions
- Discuss sexuality and fertility resources available to patients and providers

Defining Sexual Health

Sexual health is the integration of the **somatic, emotional, intellectual and social aspects of sexual being**, in ways that are positively enriching and that enhances personality, communication, and love-World Health Organization [WHO] (1975)

Sexual health is the experience of the ongoing process of **physical, psychological and social-cultural well-being related to sexuality**. Sexual health is evidenced in the free and responsible expressions of sexual capabilities that foster harmonious personal and social wellness, enriching individual and social life. **It is not merely the absence of dysfunction, disease, and/or infirmity**. For sexual health to be attained and maintained it is necessary that the sexual rights of all people to be recognized and upheld-World Association for Sexual Health [WAS] (1991)

Sexual health is a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. **Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences**, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected, and fulfilled-WHO/WAS (2002)

Dimensions of Sexual Health

Physiologic

- Structures and functions enabling a sexual response

Psychologic

- Perception of self as a sexual being; influenced by body image and self-esteem

Social

- The emotional intimacy and connection established with another person through sexual activity

Sexuality During Cancer Treatment

Infection prevention

- Avoid sexual activity when neutropenic
- Use barrier methods for all penetrative activities (even when in a monogamous relationship)
- Avoid any activities that could result in oral exposure to feces

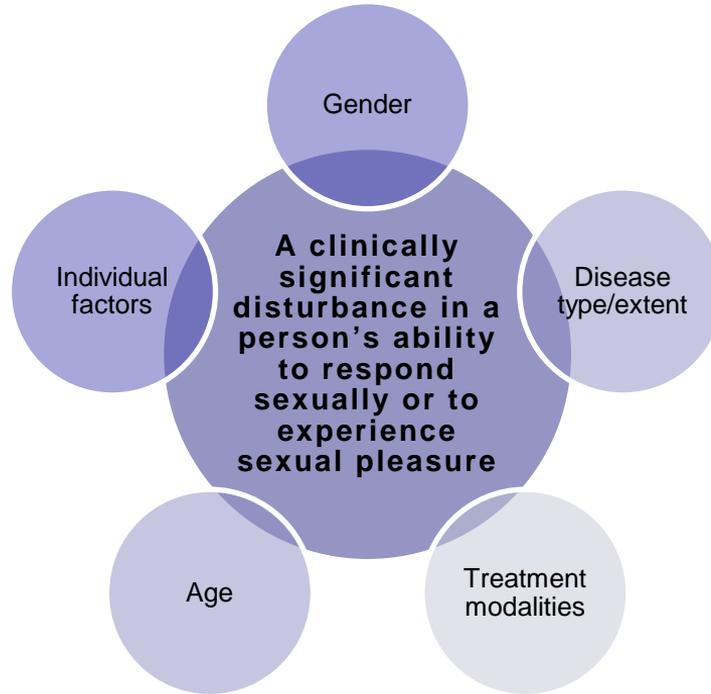
Contraception

- Should be used by all female patients of childbearing age who have sex with men and all female partners male patients
- Even if a patient is expected to have loss of fertility, they should still use contraception for all sexual encounters
- Contraceptive methods vary based on patients' disease, treatment, and comorbidities

Chemotherapy exposure

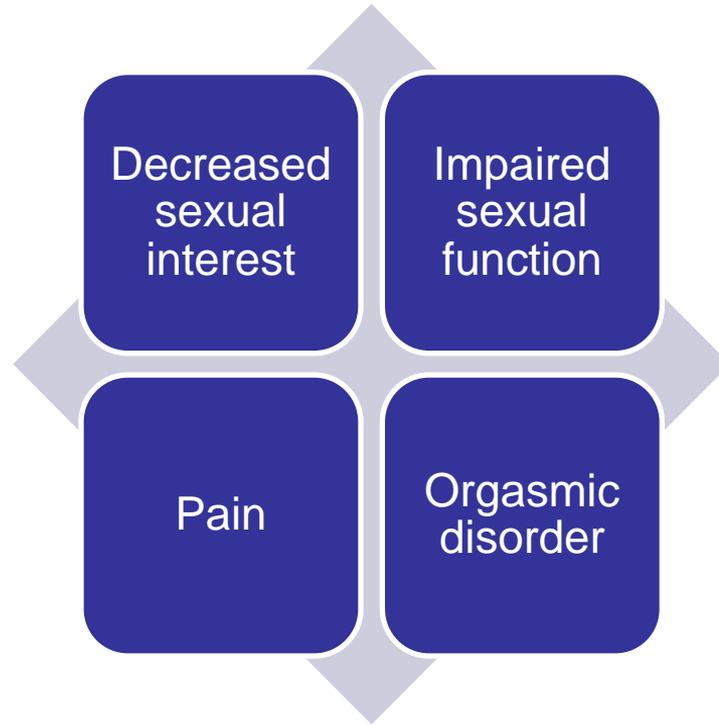
- Chemotherapy may be secreted in semen or vaginal secretions
- Barrier methods should be used for all sexual activities

Sexual Dysfunction



American Psychiatric Association (2013)

Sexual Health and Dysfunction in Oncology



Cancer and Treatment Impacts on Sexuality

Physiologic

- Impaired sexual response (desire, arousal, orgasm)
- Genital symptoms (dyspareunia, vaginal atrophy, vaginal dryness, loss of penile length)
- Vasomotor symptoms (night sweats, hot flashes, flushing)

Psychologic

- Depression
- Anxiety
- Changes in body image

Social

- Impaired intimacy
- Role changes
- Social isolation

Common Factors that Impact Sexual Health

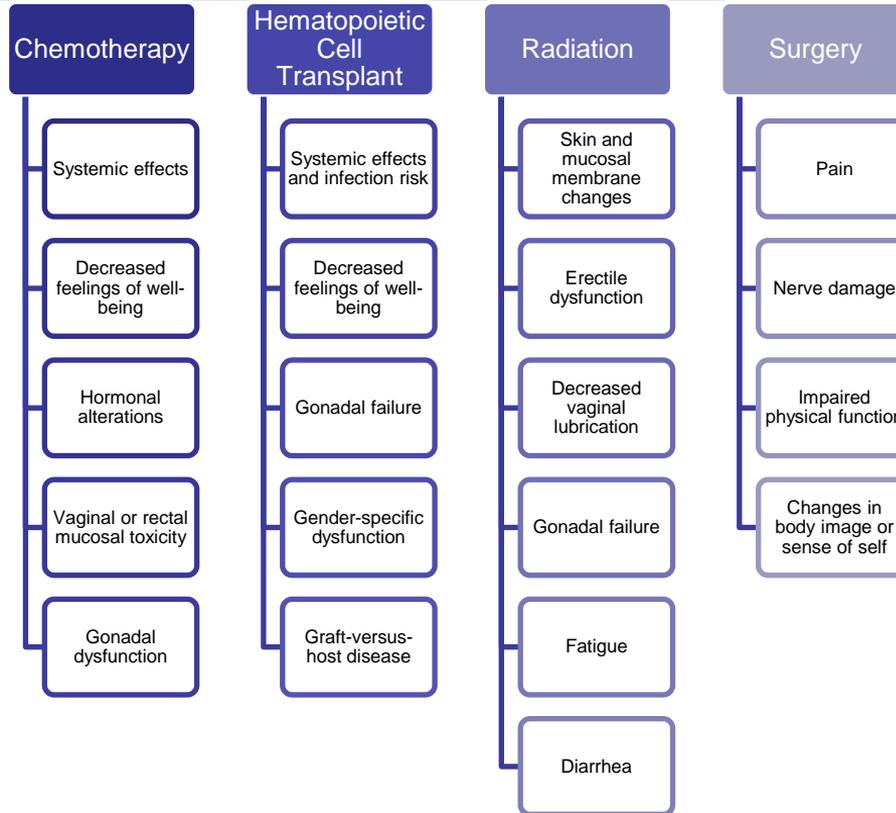
Physiologic

- Infertility
- Premature menopause
- Dyspareunia
- Decreased sexual satisfaction
- Inadequate lubrication
- Ejaculation difficulties
- Fatigue
- Neuropathies
- Cognitive dysfunction
- Alopecia
- Weight loss/gain
- Surgical scars
- Medical devices or lines

Psychoemotional

- Body image changes
- Fears of rejection
- Social isolation
- Stigma of having cancer
- Anxiety/depression/stress
- Loss
- Mastery/lack of mastery of developmental tasks
- Vulnerability/insecurity
- Feeling misunderstood/not supported
- Loss of autonomy or independence
- Inadequate personal coping resources/reserves
- Contrasting patient/caregiver perspectives
- Feelings of being a burden
- Decreased self-esteem or sexual self-concept

Cancer Treatment Impacts on Sexuality



Gender-Specific Sexual Health: Females

Gonadal function

- Ovarian failure (temporary or permanent)
- Loss of estrogen production

Genital symptoms

- Vaginal atrophy or stenosis
- Vulvar lesions
- Vaginal adhesions
- Vaginal dryness
- Vulvodynia
- Dyspareunia
- Vaginismus

Vasomotor symptoms

- Hot flashes
- Night sweats

Gender Specific Sexual Health: Males

Gonadal function

- Gonadal failure (temporary or permanent)
- Oligospermia or azoospermia

Genital symptoms

- Loss of penile length
- Erectile dysfunction

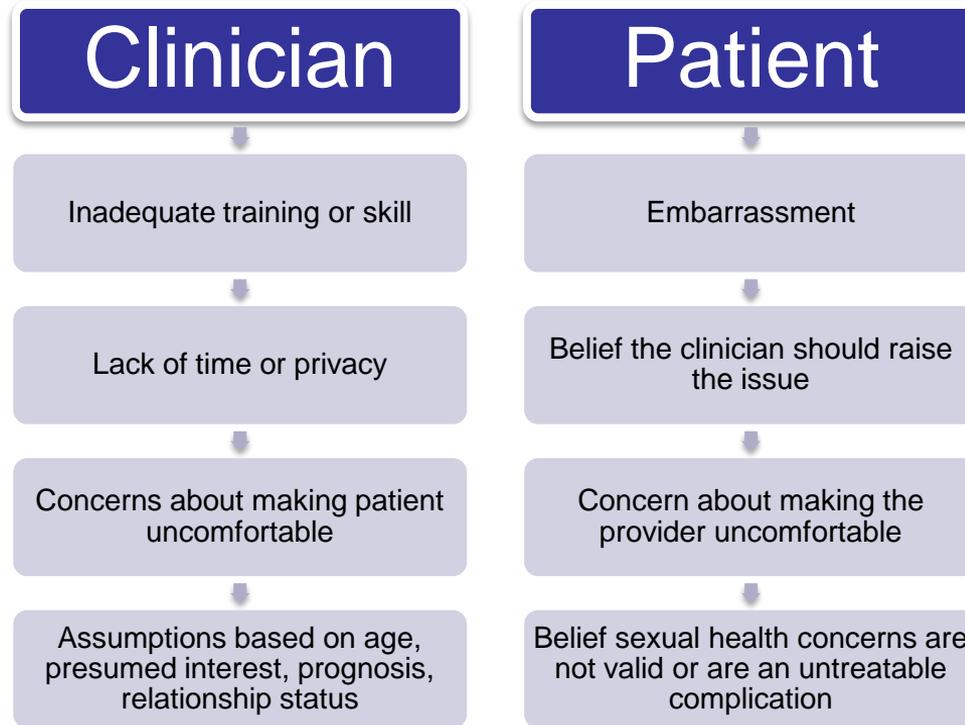
Vasomotor symptoms

- Hot flashes
- Night sweats

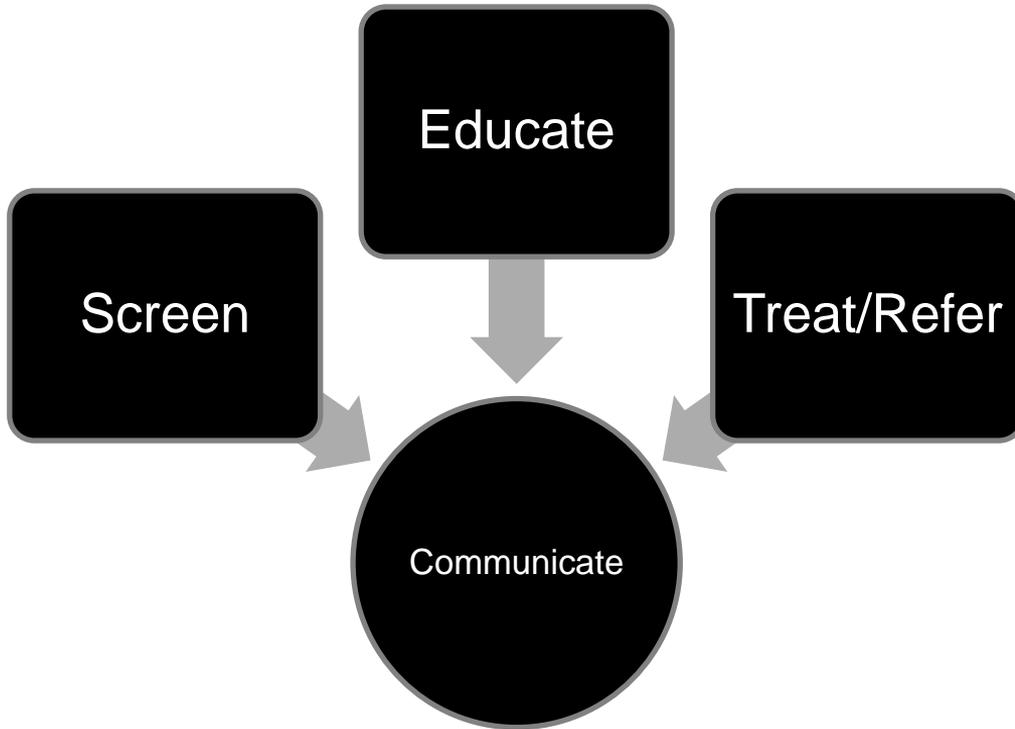
Principles of Sexual Health Promotion



Barriers to Discussing Sexual Health



Strategies for Providers



PLISSIT

P

- Permission giving

LI

- Limited information

SS

- Specific suggestions

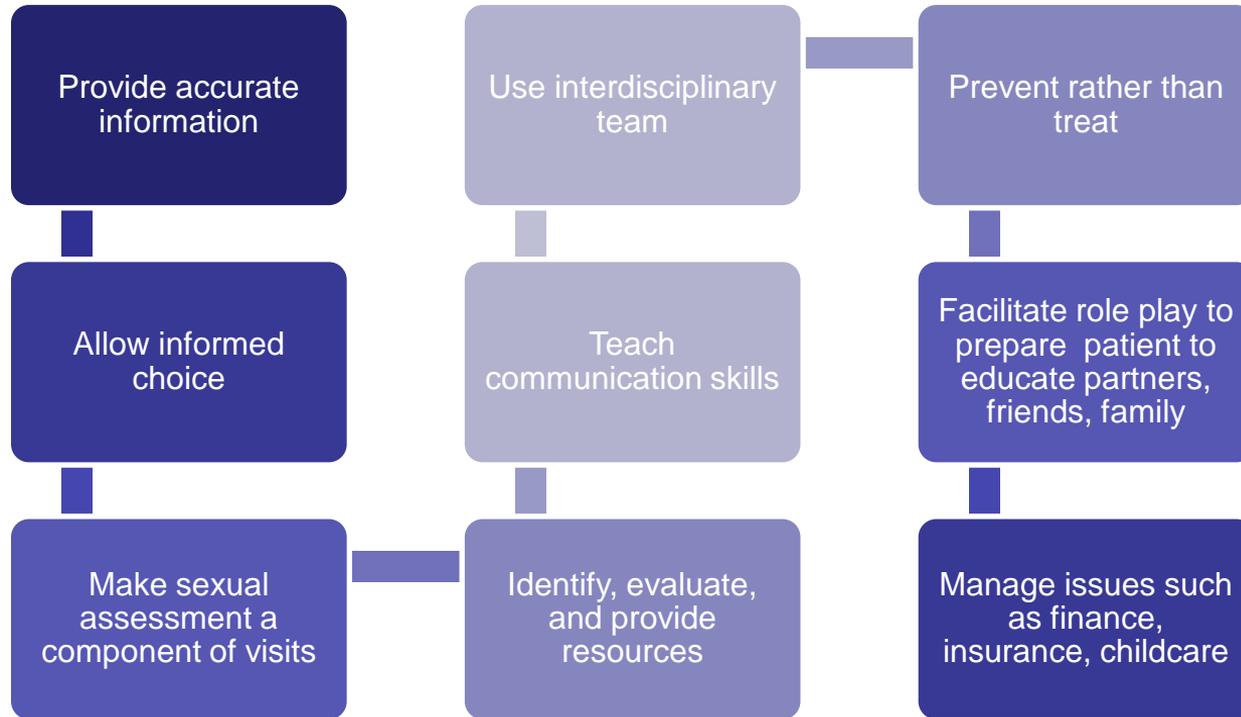
IT

- Intensive therapy

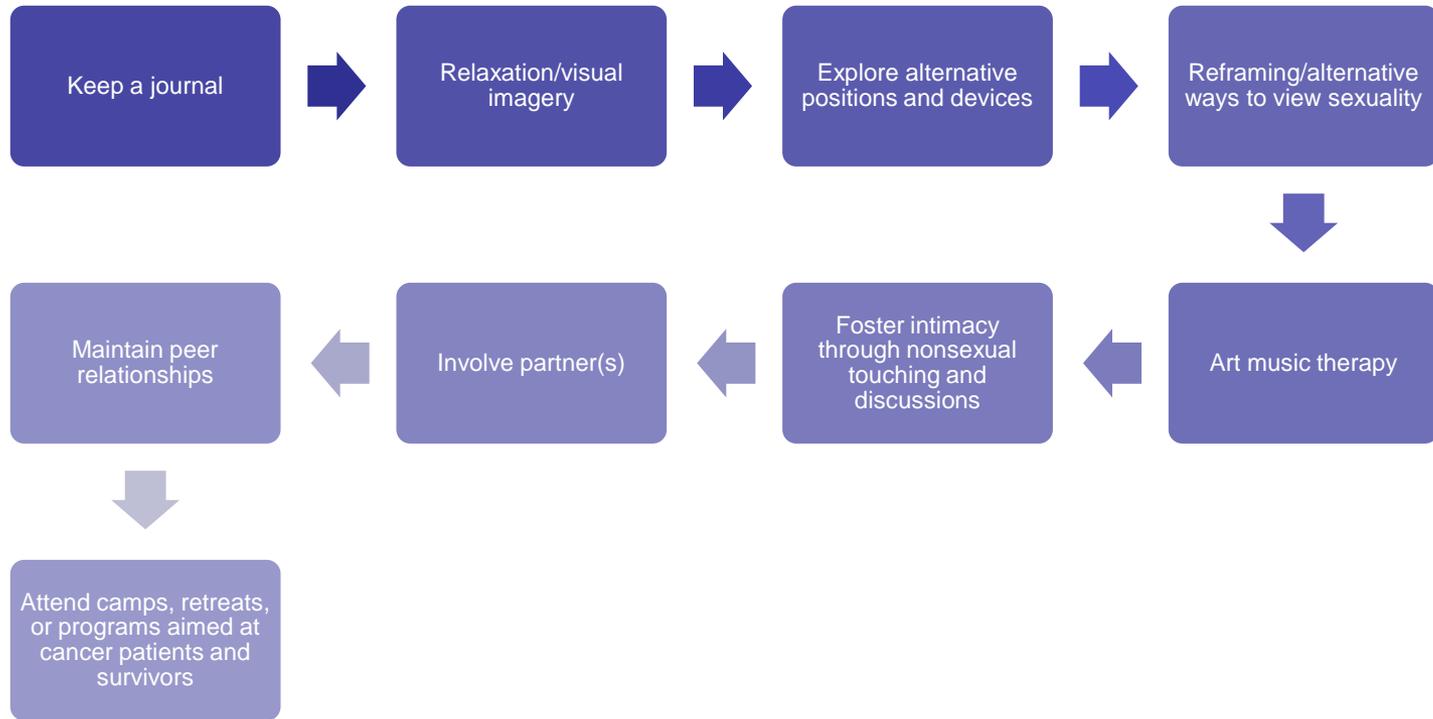
Management of Sexual Dysfunction

Symptom	Possible Intervention
Impaired sexual response	Psychosocial counseling, psychosexual counseling, regular stimulation
Vasomotor symptoms (females)	Cognitive behavioral therapy (CBT), hypnosis, hormonal therapy, pharmacologic therapy
Vasomotor symptoms (males)	CBT, acupuncture, hypnosis, pharmacologic therapy
Genital symptoms (females)	CBT, exercise, pelvic floor physiotherapy, vaginal moisturizers, lubricants, vaginal dilators, pain relievers
Genital symptoms (males)	Vacuum erection device, PDE5 inhibitor drugs, medicated urethral system
Body image	Psychosocial counseling, couples-based interventions
Intimacy/relationships	Psychosocial counseling, couples-based interventions

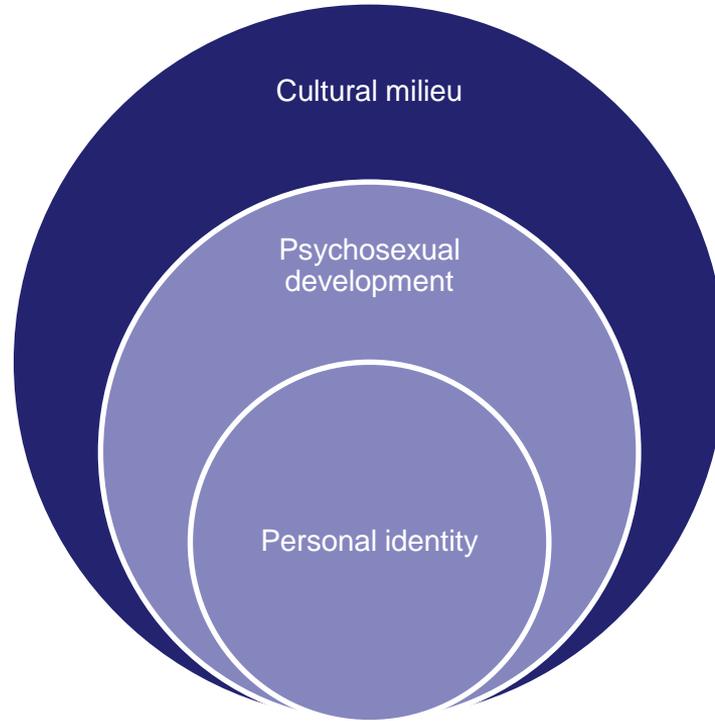
Strategies for Providers to Enhance Sexual Health



Strategies for Patients to Enhance Sexual Health



Adolescent and Young Adult (AYA) Considerations



Resources

American Society for Clinical Oncology

www.asco.org/survivorship-guidelines

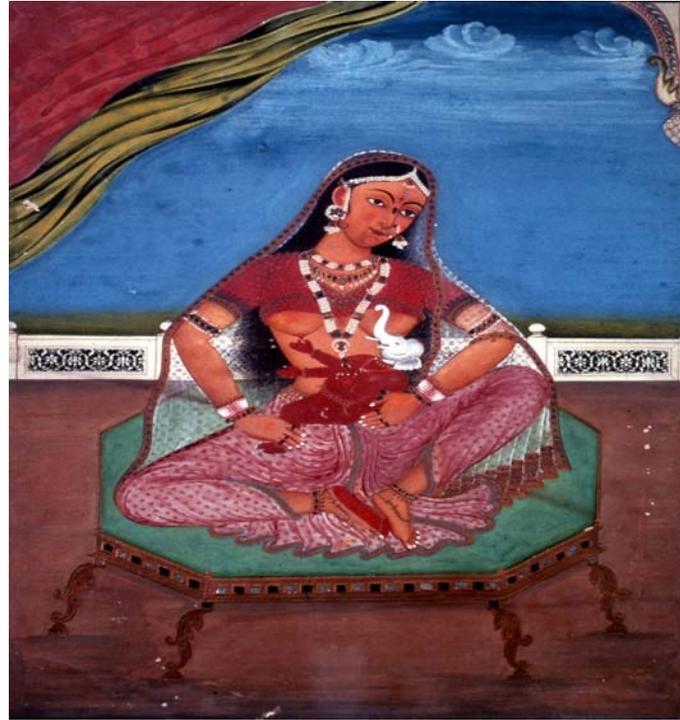
Massachusetts General Hospital Oncology Sexual Health Clinic

<http://www.massgeneral.org/cancer/services/treatmentprograms.aspx?id=1744>

OncoLink Guides to Sexuality During & After Cancer Treatment

<https://www.oncolink.org/support/sexuality-fertility/sexuality>

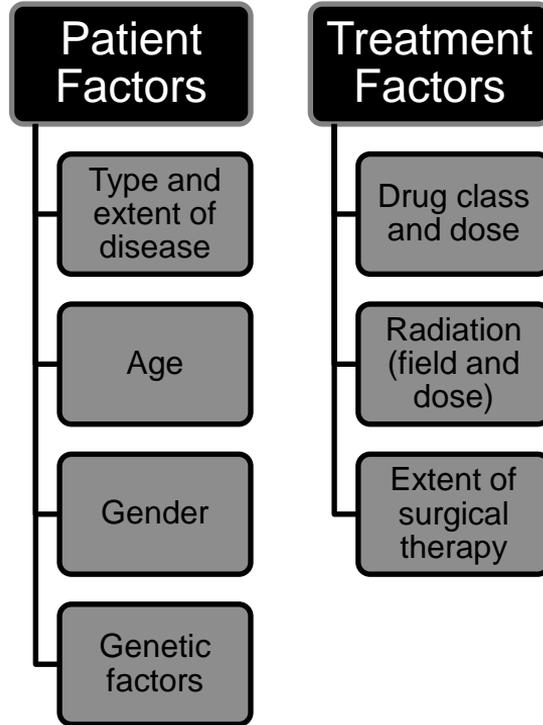
Oncofertility



Causes of Oncoinfertility

- Two primary mechanisms:
 - Injury to the hypothalamic-pituitary-gonadal axis
 - Damage to the organs of the reproductive tract
- Contributing Factors:
 - Disease process
 - Cytotoxic therapy, radiation, surgery

Contributing Factors to Oncoinfertility



Diseases/Treatments Affecting Fertility

Childhood Cancers

Leukemia

Lymphoma

Ewing sarcoma

Pelvic Osteosarcoma

Wilms tumor

Genital rhabdomyosarcoma

Neuroblastoma

Germ cell tumors

Adult Cancers

Leukemia

Lymphoma

Breast cancer

Testicular cancer

Malignancies of the gastrointestinal tract

Testicular cancer

Gynecologic cancers

Other

Sickle cell disease

Aplastic Anemia

Autoimmune thrombocytopenia

Pelvic radiation

Hematopoietic cell transplantation

Fertility Effects in Females

Diminished ovarian reserve

- Premature ovarian failure
- Infertility/subfertility
- Early menopause

Pituitary damage

- Impaired maturation of eggs
- Anovulation and ovulatory dysfunction

Other

- Absence of or damage to uterus, fallopian tubes, ovaries, cervix, or vagina (surgery/radiation)

Chemotherapy-Associated Ovarian Toxicity

Definite Risk

- Nitrogen mustard
- Cyclophosphamide
- Melphalan
- Busulfan

Probable Risk

- Vinblastine
- Cytarabine
- Cisplatin
- Carmustine
- Etoposide
- Imatinib

Low Risk

- Methotrexate
- 6-mercaptopurine
- Vincristine

Unknown

- Doxorubicin
- Bleomycin
- Daunorubicin

Fertility Preservation Options in Females

Cryopreservation

- Embryo
- Oocyte (mature/immature)
- Whole ovary and pedicle
- Ovarian tissue

Protecting native ovarian function

- Oophoropexy
- Shielding
- Ovarian autotransplantation
- Gonadotropin-releasing hormone (GnRH) agonists

Alternative methods

- Orthotopic transplantation
- Uterine transplantation
- Oocyte or embryo donation
- Gestational surrogate

Fertility Effects in Males

Impaired sperm production

- Oligospermia
- Azoospermia

Impaired sperm transport

- Erectile dysfunction
- Impaired ejaculation

Pituitary Damage

- Impaired sperm production

Chemotherapy-Associated Gonadal Toxicity

Definite Risk

- Busulfan
- Cyclophosphamide
- Procarbazine
- Melphalan
- Cisplatin
- Carmustine
- Bendamustine
- Ifosfamide
- Nitrogen mustard
- Actinomycin D

Probable Risk

- Carboplatin
- Doxorubicin
- Thiotepa
- Cytarabine
- Vinca alkaloids

Low/Temporary Risk

- Bleomycin
- Dacarbazine
- Daunorubicin
- Etoposide
- Fludarabine
- 6-mercaptopurine
- Methotrexate
- Mitoxantrone

Unknown Risk

- Taxanes
- Tyrosine kinase inhibitors
- Monoclonal antibodies

Fertility Preservation Options in Males

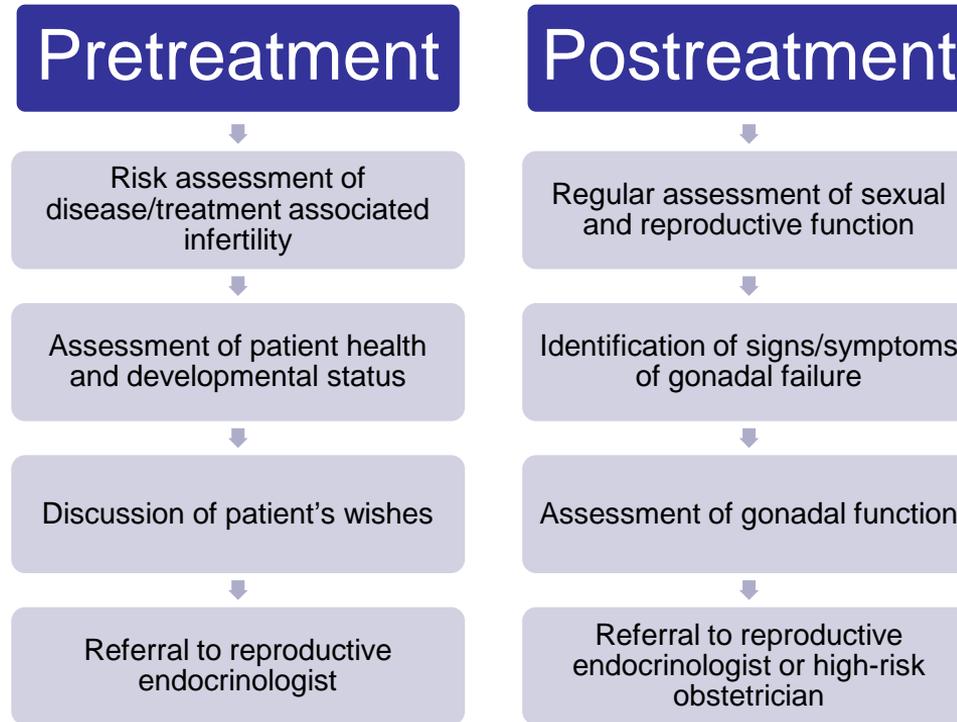
Cryopreservation

- Sperm
- Testicular sperm extraction
- Testicular tissue

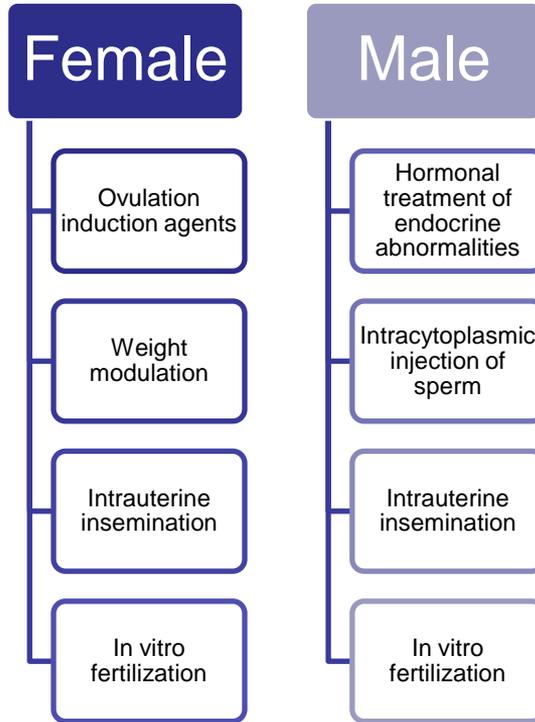
Alternative methods

- Gonadal shielding
- Donor sperm insemination

Fertility Assessments and Interventions



Treatment of Infertility



Challenges



Resources

Alliance for Fertility Preservation Financial Assistance Program

<http://www.allianceforfertilitypreservation.org/costs/financial-assistance>

National Comprehensive Cancer Network® Patient and Caregiver
Resources

https://www.nccn.org/patients/resources/life_with_cancer/fertility.aspx

The Oncofertility Consortium®

<https://oncofertility.northwestern.edu/>

ECHO at Moffitt Cancer Center



Questions



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