Cancer Survivorship Care

Adapted from the National Cancer Survivorship Resource Center

www.cancer.org/survivorshipcenter

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Overview of Survivorship

- Historically, 5 years after diagnosis
- From the moment of diagnosis through the balance of life
  - Including family and caregivers
- After active treatment
Focus on Survivorship

**Males**

- Prostate
- Colorectal
- Melanoma
- Urinary Bladder
- NH* Lymphoma
- Testis
- Kidney
- Lung/Bronchus
- Oral Cavity/Pharynx
- Leukemia

**Females**

- Breast
- Colorectal
- Uterine Corpus
- Melanoma
- Thyroid
- NH* Lymphoma
- Lung/Bronchus
- Cervix
- Ovary
- Kidney

*Non-Hodgkin

American Cancer Society, 2014a
Focus on Survivorship

Number of Cancer Survivors

- **Males**
  - 2014: 7,000,000
  - 2024: 9,000,000

- **Females**
  - 2014: 5,000,000
  - 2024: 7,000,000

American Cancer Society, 2014a
Focus on Survivorship – Males

2014

- Prostate
- Colorectal
- Melanoma
- Urinary Bladder
- NH* Lymphoma
- Testis
- Kidney
- Lung/Bronchus
- Oral Cavity/Pharynx
- Leukemia

2024

- Prostate
- Colorectal
- Melanoma
- Urinary Bladder
- NH* Lymphoma
- Kidney
- Oral Cavity/Pharynx
- Testis
- Lung/Bronchus
- Leukemia

*Non-Hodgkin
Focus on Survivorship – Females

2014

- Breast
- Uterine Corpus
- Colorectal
- Melanoma
- Thyroid
- NH* Lymphoma
- Uterine Cervix
- Lung/Bronchus
- Ovary
- Kidney

2024

- Breast
- Colorectal
- Uterine Corpus
- Melanoma
- Thyroid
- NH* Lymphoma
- Uterine Cervix
- Lung/Bronchus
- Ovary
- Kidney

*Non-Hodgkin

American Cancer Society, 2014a
Survivorship by Time Since Diagnosis

- Female
- Male

- 0 to < 5 years
- 5 to < 10 years
- 10 to < 15 years
- 15 to < 20 years
- 20 to < 25 years
- 25+ years

American Cancer Society, 2014
Impacts of Cancer Treatment

- Surgical Side Effects
- Radiation Side Effects
- Chemotherapy Side Effects
- Hormonal Therapy Side Effects
- Non-Treatment-Specific Side Effects

Individual Effects/Risks
Cancer Survivor Needs

**Physical Well-Being**
- Functional status
- Fatigue and sleep
- Overall physical health
- Fertility
- Pain

**Psychological Well-Being**
- Control
- Anxiety
- Depression
- Fear of recurrence
- Cognition/attention

**Social Well-Being**
- Family distress
- Roles and relationships
- Affection/sexual function
- Appearance
- Isolation
- Finances/employment

**Spiritual Well-Being**
- Meaning of illness
- Religiosity
- Transcendence
- Hope
- Uncertainty
- Inner strength

Ferrell & Hassey Dow, 1997
The Need for Survivorship Care

- Rapidly growing population of survivors
- Survivors experience unmet physical, psychosocial, practical and spiritual needs
- Inconsistent coordination of care and communication between primary care providers and oncologists
- Significant long-term and late effects
- Complexity of care, comorbid conditions

American Cancer Society, 2014a
Smith et al., 2008
Long-term and Late Effects

• **Long-term effects** are medical problems that develop during active treatment and persist after the completion of treatment.

• **Late effects** are medical problems that develop or become apparent months or years after treatment is completed.
Potential Physical Impacts
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Long-term side effects</th>
<th>Late side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemotherapy</td>
<td>Fatigue</td>
<td>Vision/cataracts</td>
</tr>
<tr>
<td></td>
<td>Premature menopause</td>
<td>Infertility</td>
</tr>
<tr>
<td></td>
<td>Sexual dysfunction</td>
<td>Liver problems</td>
</tr>
<tr>
<td></td>
<td>Neuropathy</td>
<td>Lung disease</td>
</tr>
<tr>
<td></td>
<td>“Chemo brain”</td>
<td>Osteoporosis</td>
</tr>
<tr>
<td></td>
<td>Kidney failure</td>
<td>Reduced lung capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Secondary primary cancers</td>
</tr>
<tr>
<td>Radiation therapy</td>
<td>Fatigue</td>
<td>Cataracts</td>
</tr>
<tr>
<td></td>
<td>Skin sensitivity</td>
<td>Cavities and tooth decay</td>
</tr>
<tr>
<td></td>
<td>Lymphedema</td>
<td>Cardiovascular disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hypothyroidism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infertility</td>
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<tr>
<td></td>
<td></td>
<td>Lung disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intestinal problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Second primary cancers</td>
</tr>
<tr>
<td>Surgery</td>
<td>Sexual dysfunction</td>
<td>Body image disturbance</td>
</tr>
<tr>
<td></td>
<td>Incontinence</td>
<td>Functional disability</td>
</tr>
<tr>
<td></td>
<td>Pain</td>
<td>Infertility</td>
</tr>
</tbody>
</table>
Potential Psychosocial Impacts
General Psychosocial Long-Term and Late Effects

- Depression, depressive symptoms
- Distress
- Worry, anxiety
- Fear of recurrence
- Pain-related concerns
- End-of-life concerns: death and dying
- Changes in sexual function and/or desire
- Challenges with body image
- Challenges with self-image
- Relationship and other social role difficulties
- Return to work concerns and financial challenges

Skoarus et al., 2014
Prevention and Wellness
Empowering Survivors to Live Well

• Prevention
  – Cancer
  – Comorbidities

• General Wellness
  – Diet
  – Exercise
  – Psychological well-being

• Surveillance and Screening
## ACS Nutrition and Physical Activity Guidelines for Cancer Survivors

### Achieve and maintain a healthy weight
- If overweight or obese, limit consumption of high-calorie foods and beverages and increase physical activity to promote weight loss

### Engage in regular physical activity
- Avoid inactivity and return to normal daily activities as soon as possible following diagnosis
- Aim for aerobic exercise at least 150 minutes per week
- Include strength training exercises at least 2 days per week

### Achieve a dietary pattern that is high in vegetables, fruits and whole grains

### Follow the American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention
Spirituality
Spirituality

Studies indicate that spirituality:
• Helps patient with chronic illness, end-of-life and better quality of life
• Increases one’s will to live
• Improves coping skills, sense of coherence, meaning
• Improves stress management (meditation, spiritual practices, mindfulness)
• Improves pain management
• Enables patient to have more realistic sources of hope (meaning in life, reconciliation, hope for finishing important goals—i.e., not cure-focused)
• Increases satisfaction with care
• Is a patient need

Puchalski, 2014
Formulation of a Bio-psycho-social-spiritual Assessment and Treatment Plan

Recommendations:
• Screen, history and assess
• All health care professionals should do spiritual screening
• Clinicians who refer should do spiritual histories and develop appropriate treatment plans working with Board Certified Chaplain, if possible
• Identify spiritual distress (diagnostic labels and codes)
• Treatment plans that include psychosocial and spiritual support
• Support/encourage in expression of needs and beliefs

Puchalski, 2014
Rehabilitation for Cancer Survivors

• Rehabilitation can significantly improve:
  – Physical outcomes
  – Psychological outcomes
  – Quality of life outcomes
• Survivors have unmet needs related to rehabilitation
• Rehabilitation can be incorporated across the care continuum, even at diagnosis (prehabilitation)
• Patients should be referred to licensed/board certified rehabilitation health care professionals

Silver et al., 2013
Silver, 2014
Care Coordination
Survivorship Care Plans

• Key survivorship component
• Road map for post-treatment care
• Tool for care coordination and communication

Treatment Summary + Follow-up Plan = Survivorship Care Plan
Survivorship Care Plan Templates

- American Society of Clinical Oncology
  www.asco.org
- Journey Forward
  www.journeyforward.org
- OncoLink Care Plan
  www.oncolink.org/oncolife
Survivorship Guidelines
## Cancer Survivorship Clinical Practice Guidelines

### National Comprehensive Cancer Network
- **By Topic:**
  - Anxiety and depression
  - Cognitive function
  - Exercise
  - Fatigue
  - Immunizations and infections
  - Pain
  - Sexual function (female/male)
  - Sleep disorders

### American Society of Clinical Oncology
- **By Topic:**
  - Neuropathy
  - Fatigue
  - Anxiety and depression
  - Fertility preservation
  - Breast cancer survivorship care guideline (ACS/ASCO)

### American Cancer Society Survivorship Care Guidelines for Primary Care Providers
- **By Topic:**
  - Holistic:
    - Surveillance
    - Screening
    - Long-term and late effects
    - Health promotion
  - Breast (ACS/ASCO), colorectal, head and neck and prostate currently available
American Cancer Society Cancer Survivorship Care Guidelines

- Surveillance for Cancer Recurrence
- Screening for Second Primary Cancers
- Assessment and Management of Physical and Psychosocial Long-Term and Late Effects
- Health Promotion
- Care Coordination
Breast Cancer Survivorship Care

**SEXUAL FUNCTION AND FERTILITY**
- Assess for sexual dysfunction or problems with sexual intimacy including sexual dysfunction disorders (e.g., arousal or lubrication concerns, vaginal dryness), vaginal or breast cancer (MC), loss of sexual function (MF), loss of sexual sensitivity of the skin in MC, vaginal dryness (MF)
- Assess for reversible contributing factors and treat when appropriate
- Offer nonhormonal, water-based lubricants and moisturizers for vaginal dryness
- Refer for psychosocial support, group therapy, sexual counseling, marital counseling or other psychotherapy where appropriate
- Refer questions to a multidisciplinary group who expertise referral to a specialist in reproductive endocrinology and infertility

**COGNITIVE FUNCTION**
- Ask patients if they are experiencing cognitive difficulties or problems with concentration, executive function and memory in treatment (MF), after treatment (MF)
- Assess for reversible contributing factors of cognitive impairment and treat when possible
- Refer patients with signs of cognitive impairment for neuropsychological assessment and rehabilitation, including group cognitive training if available

**MUSCULOSKELETAL HEALTH**
- Assess for musculoskeletal symptoms by asking about symptoms at each encounter
  - Ask about:
    - Difficulties with upper extremity function (MC)
    - Musculoskeletal pain (MF)
    - Difficulties with upper extremity function (MC), diminished range of motion (MC)
    - Anxiety (MF)
    - Arthritis (MF)
    - Weakness of upper extremity (MF)
    - Difficulty with walking (MC)
    - Difficulty with upper extremity strength (MF)
    - Vascular spasm (MF)
  - Offer one or more of the following interventions based on clinical indication: acupuncture, physical activity, referral for physical therapy or rehabilitation

**PREMATURE MENOPAUSE/HOT FLAShes**
- Assess for premature menopause (MC) due to radiotherapy (MC), chemotherapy-related early menopause (MF)
- Offer 5HT2A receptor antagonists (5HT2A), gabapentin, lifestyle modifications and anti-estrogenic modifications to help mitigate vasomotor symptoms of premature menopause

**BONE HEALTH**
- Assess for bone loss (osteopenia, osteoporosis) (MF)
- Refer patients for bone density scans of the lumbar spine and femur after treatment (MF)
- Refer for repeat ESRD scans every 2 years for women taking tamoxifen or aromatase inhibitors, non-insulin dependent diabetes, and postmenopausal women taking tamoxifen and estrogen plus a quinolone (MC) for breast cancer (MC), sporadic and women who have chemotherapy-induced premature menopause

**BODY IMAGE**
- Assess for body image appearance concerns (including breast asymmetry and defect, loss of breast, obesity, poor cosmetic outcomes, scarring and lymphedema) after surgery, skin changes from radiation, skin discoloration, subcutaneous fat gain
- Offer adaptive devices and/or surgery when appropriate
- Refer for psychosexual care as indicated

High prevalence ≥50% (H), Mid Prevalence 21-49% (M), Low Prevalence ≤20% (L), Unknown Prevalence (U)
Potential Surgery Effects

Long-term Effects

- Lack of skin sensitivity
- Body image issues
- Sexual dysfunction
- Numbness
- Pain
- Limited range of motion
- Weakness
- Poor cosmetic outcome

Late Effects

- Lymphedema
- Neuropathy

Runowicz et al., 2015
## Potential Radiation Therapy Effects

### Long-term Effects

- Fatigue*†
- Skin sensitivity/pain
- Sexual dysfunction
- Pain
- Pneumonitis
- Poor cosmetic outcome
- Breast atrophy/asymmetrical breast volume
- Lymphedema*
- Numbness or weakness of upper extremity*

### Late Effects

- Skin discoloration
- Breast may remain smaller and firmer than non-irradiated breast (breast asymmetry)
- Skin sensitivity/pain
- Telangiectasia
- Sexual dysfunction
- Lymphedema
- Shortness of breath (lung pneumonitis or fibrosis) *†
- Cardiovascular disease (e.g., pericardial effusion, pericarditis) †
- Numbness or weakness of the upper extremity*‡
- Second primary cancers (e.g., soft-tissue sarcomas of thorax, shoulder and pelvis; lung cancer)

*Risks are increased in patients who had RT also to supraclavicular lymph nodes
†Risks are increased in patients who had RT also to internal mammary lymph nodes
‡Need to be careful as these can also be signs of recurrent cancer. May need consultation with radiation oncologist.

Runowicz et al., 2015
### Potential Chemotherapy Effects

#### Long-term Effects
- Cognitive impairment
- Fatigue
- Ovarian failure with or without menopausal symptoms
- Sexual dysfunction
- Change in libido
- Infertility
- Weight gain
- Obesity
- Neuropathy (especially after taxanes)
- Oral health issues
- Hair loss

#### Late Effects
- Osteoporosis/osteopenia
- Increased risk of cardiovascular disease (cardiomyopathy, congestive heart failure) with anthracycline-based chemotherapy
- Increased risk of leukemia after anthracycline-based chemotherapy

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Runowicz et al., 2015
## Potential Hormonal Therapy Effects

### Long-term Effects

<table>
<thead>
<tr>
<th>Tamoxifen</th>
<th>Aromatase Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hot flashes</td>
<td>• Vaginal dryness</td>
</tr>
<tr>
<td>• Changes in menstruation</td>
<td>• Decreased libido</td>
</tr>
<tr>
<td>• Weight gain</td>
<td>• Musculoskeletal symptoms/pain</td>
</tr>
<tr>
<td>• Mood changes</td>
<td>• Cholesterol elevation</td>
</tr>
<tr>
<td>• Increased triglycerides</td>
<td></td>
</tr>
</tbody>
</table>

### Late Effects

<table>
<thead>
<tr>
<th>Tamoxifen</th>
<th>Aromatase Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased risk of stroke</td>
<td>• Increased risk of osteoporosis</td>
</tr>
<tr>
<td>• Increased risk of endometrial cancer</td>
<td>• Increased risk of fractures</td>
</tr>
<tr>
<td>• Increased risk of blood clots</td>
<td></td>
</tr>
<tr>
<td>• Osteopenia in premenopausal women</td>
<td></td>
</tr>
</tbody>
</table>
Potential Targeted Therapy Effects

Long-term Effects

Trastuzumab
• Increased risk of cardiac dysfunction

Runowicz et al., 2015
Colorectal Cancer Survivorship Care

SEXUAL FUNCTION AND FERTILITY
- Discuss symptoms of dyspareunia or sexual dysfunction, dyspareunia (5), vaginal dryness (6), breast changes (1), premature menopause (1), and baldness (1).
- Discuss symptoms of prostate cancer (9), bladder cancer (9), and rectal cancer (9) with survivors of those cancers.
- Consider the use of sildenafil (6), avanafil (6), and tadalafil (6) for erectile dysfunction (ED).
- Consider the use of transdermal patches (6) and oral medications (6) for ED.
- Consider the use of hormone therapy (6) for men with a history of prostate cancer.
- Consider the use of hormone therapy (6) for women with a history of breast cancer.

BOWEL/GI FUNCTION
- Discuss symptoms of diverticulitis (6), constipation (6), and rectal bleeding (6) with survivors of colorectal cancer.
- Discuss the use of stool softeners (6) and fiber supplements (6) for constipation.
- Consider the use of proctitis (6) and hemorrhoids (6) for rectal bleeding.
- Consider the use of anticoagulants (6) for prevention of deep vein thrombosis (DVT).
- Consider the use of anticoagulants (6) for prevention of pulmonary embolism (PE).

FATIGUE
- Assess for fatigue (6), sleep disturbances (6), and mood changes (6).
- Consider the use of cognitive behavioral therapy (6) and exercise (6) for management of fatigue.
- Consider the use of oxygen therapy (6) for management of hypoxemia.
- Consider the use of opioids (6) for management of pain.

URINARY FUNCTION
- Assess for stress and urge urinary incontinence (6), nocturia (6), and frequency (6).
- Consider the use of pelvic floor exercises (6) and biofeedback (6) for management of urinary incontinence.
- Consider the use of anticholinergics (6) and beta-blockers (6) for management of overactive bladder.
- Consider the use of transdermal patch (6) and gel (6) for management of Menopause.

NUMEROUS
- Assess for neuropathy (6), autonomic dysfunction (6), and peripheral neuropathy (6).
- Consider the use of medications (6) and physical therapy (6) for management of neuropathy.
- Consider the use of supportive care (6) for management of pain.
- Consider the use of palliative care (6) for management of end-of-life care.

PROSTATE CANCER
- Assess for prostate cancer (6), and consider the use of digital rectal examination (6) and PSA testing (6) for screening.
- Consider the use of surgery (6) and radiation therapy (6) for treatment.
- Consider the use of hormone therapy (6) and androgen deprivation therapy (6) for treatment.

COUNSELING AND PSYCHOSOCIAL SUPPORT
- Refer survivors to counseling services (6) and support groups (6) as needed.
- Consider the use of support services (6) for management of psychosocial issues.
- Consider the use of integrative therapies (6) for management of symptoms.

HIGH-PREVALENCE CONDITIONS
- High prevalence: 30% or higher
- Mid-prevalence: 10-29%
- Low prevalence: 1-9%
- Unknown prevalence: <1%
Potential Surgery Effects

Long-term Effects

- Ostomy care and complications
- Urogenital/sexual dysfunction
- Frequent and/or urgent bowel movements or loose bowels
- Gas and/or bloating
- Incisional hernia

Late Effects

- Bowel obstruction

El-Shami et al., 2015
Potential Pelvic Radiation Effects

Long-term Effects

- Chronic diarrhea
- Rectal ulceration/bleeding
- Emptying problems/incontinence
- Frequent bowel movements
- Abdominal pain
- Localized skin changes
- Urogenital/sexual dysfunction
- Gas

Late Effects

- Infertility
- Bone fracture in sacral region
- Second primary cancers in radiation field
- Bowel obstruction

El-Shami et al., 2015
Potential Chemotherapy Effects

Long-term Effects

- Peripheral chronic neuropathy
- Cognitive function deficits
- Chronic fatigue

Late Effects

- Dental/oral complications

El-Shami et al., 2015
Head and Neck Cancer Survivorship Care

**American Cancer Society Head and Neck Cancer Survivorship Care Guideline Summary**

**Musculoskeletal and Neuromuscular**
- Access for special exercise programs and refer to athletic trainers
- Specify care for spinal instability
- Refer to rehabilitation specialists for pain management
- Arrange for shoulder pain management
- Conduct baseline assessments for the shoulder function after treatment
- Refer to specialists for improvement in pain, disability and range of motion
- Refer to rehabilitation specialists and physical therapists for prevention and recovery

**Swallowing**
- Assess for dysphagia
- Examine swallowing function
- Refer to swallowing rehabilitation specialists
- Refer to physical therapists and occupational therapists
- Refer to speech-language pathologists

**Reflux**
- Monitor for developing or worsening gastroesophageal reflux disease
- Consider routine follow-up for esophageal acid exposure
- Improve management

**Lymphedema**
- Assess for lymphedema
- Refer to lymphedema specialist

**Fatigue**
- Assess for fatigue
- Refer to fatigue management
- Refer to support groups

**Taste**
- Assess for altered or loss of taste
- Refer to dietitians for dietary counseling

GW Cancer Institute
The George Washington University

Cancer Center
Potential Surgery Effects

**Long-term Effects**

- **Shoulder function**
  - Shoulder mobility, pain
- **Oral health complications**
  - Xerostomia
  - Dysphagia
  - Oral infections
- **Musculoskeletal effects**
  - Trismus
  - Impaired neck motion, pain
  - Stricture

**Late Effects**

- Spinal nerve abnormalities
- Lymphedema
- Neuropathy
- Cervical radiculopathy

Cohen et al., 2016
# Potential Radiation Therapy Effects

<table>
<thead>
<tr>
<th>Long-term Effects</th>
<th>Late Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oropharyngeal</strong></td>
<td><strong>Vision</strong></td>
</tr>
<tr>
<td>• Xerostomia</td>
<td>• Premature cataracts</td>
</tr>
<tr>
<td>• Dysphagia</td>
<td><strong>Cardiovascular</strong></td>
</tr>
<tr>
<td><strong>Neuromuscular</strong></td>
<td>• Carotid obstruction</td>
</tr>
<tr>
<td>• Cervical dystonia</td>
<td>• Baroreceptor failure</td>
</tr>
<tr>
<td><strong>Musculoskeletal</strong></td>
<td><strong>Oropharyngeal</strong></td>
</tr>
<tr>
<td>• Trismus</td>
<td>• Xerostomia</td>
</tr>
<tr>
<td><strong>Integumentary</strong></td>
<td>• Dysphagia</td>
</tr>
<tr>
<td>• Radiation dermatitis</td>
<td><strong>Pulmonary</strong></td>
</tr>
<tr>
<td><strong>Lymphovascular</strong></td>
<td>• Pulmonary fibrosis</td>
</tr>
<tr>
<td>• Lymphedema</td>
<td><strong>Neuromuscular</strong></td>
</tr>
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<td><strong>Oral health complications</strong></td>
<td>• Cervical dystonia</td>
</tr>
<tr>
<td>• Xerostomia</td>
<td>• Trismus</td>
</tr>
<tr>
<td>• Oral infections</td>
<td>• Brachial plexopathy</td>
</tr>
<tr>
<td><strong>Lymphovascular</strong></td>
<td>• Cervical radiculopathy</td>
</tr>
<tr>
<td>• Lymphedema</td>
<td><strong>Musculoskeletal</strong></td>
</tr>
<tr>
<td><strong>Sensory complications</strong></td>
<td>• Osteonecrosis</td>
</tr>
<tr>
<td>• Hearing loss</td>
<td><strong>Cervical radiculopathy</strong></td>
</tr>
<tr>
<td>• Ocular issues</td>
<td><strong>Cervical radiculopathy</strong></td>
</tr>
<tr>
<td>• Altered or loss of taste</td>
<td><strong>Sensory complications</strong></td>
</tr>
</tbody>
</table>

*Cohen et al., 2016*
## Potential Chemotherapy Effects

### Long-term Effects

<table>
<thead>
<tr>
<th>Neuromuscular</th>
<th>Other effects</th>
<th>Late Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sensor/motor neuropathy</td>
<td>• Hot flashes/sweats</td>
<td>• Diabetes; decreased sensitivity to insulin and oral glycemic agents</td>
</tr>
<tr>
<td>• Sensory ataxia</td>
<td>• Weight gain, abdominal obesity</td>
<td>• Increased cholesterol</td>
</tr>
<tr>
<td>• Gait dysfunction</td>
<td>• Fatigue/decreased activity</td>
<td>• Increased fat mass and decreased lean muscle mass/muscle wasting</td>
</tr>
<tr>
<td>• Vertigo</td>
<td></td>
<td>• Venous thromboembolism</td>
</tr>
</tbody>
</table>

### Late Effects

<table>
<thead>
<tr>
<th>Neuromuscular</th>
<th>Other effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cardiac abnormality, cardiomyopathy</td>
<td>• Osteoporosis, fractures</td>
</tr>
<tr>
<td></td>
<td>• Metabolic syndrome</td>
</tr>
<tr>
<td></td>
<td>• Cardiovascular disease—possible increased risk of myocardial infarction</td>
</tr>
</tbody>
</table>

- Anemia
- Body hair loss
- Dry eyes

Cohen et al., 2016
Potential Surgery Effects

**Long-term Effects**

- **Urinary dysfunction**
  - Urinary incontinence (stress)
  - Urinary symptoms (urgency, frequency, nocturia, dribbling)
  - Urethral stricture formation (scarring at the urethra)
- **Sexual dysfunction**
  - Erectile dysfunction (ED)
  - Lack of ejaculation
  - Orgasm changes (without erection, associated with incontinence)
  - Penile shortening

**Late Effects**

- Disease progression

Skolarus et al., 2014
Potential Radiation Effects

**Long-term Effects**

- **Urinary dysfunction**
  - Urinary incontinence
  - Urinary symptoms (dysuria, urgency, frequency, nocturia, dribbling)
  - Hematuria
  - Urethral stricture

- **Sexual dysfunction**
  - Progressive erectile dysfunction (ED)
  - Decreased semen volume

- **Bowel dysfunction**
  - Fecal urgency, frequency, incontinence
  - Blood in stool
  - Rectal inflammation, pain

**Late Effects**

- **Urinary dysfunction**
  - Urethral stricture
  - Hematuria due to small blood vessel changes

- **Sexual dysfunction**
  - ED can be delayed in onset 6-36 months after therapy

- **Bowel dysfunction**
  - Rectal bleeding secondary to thinning/small blood vessel changes of anterior rectal wall mucosa

- **Disease progression**

Skolarus et al., 2014
# Potential Hormonal Therapy Effects

<table>
<thead>
<tr>
<th>Long-term Effects</th>
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<tbody>
<tr>
<td><strong>Sexual dysfunction</strong></td>
<td></td>
</tr>
<tr>
<td>• Loss of libido</td>
<td></td>
</tr>
<tr>
<td>• Erectile dysfunction (ED)</td>
<td></td>
</tr>
<tr>
<td><strong>Other effects</strong></td>
<td></td>
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<tr>
<td>• Hot flushes/sweats</td>
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<tr>
<td><strong>Weight gain, abdominal obesity</strong></td>
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<tr>
<td>• Change in body image</td>
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<tr>
<td>• Excessive emotional reactions and frequent mood changes</td>
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<tr>
<td><strong>Depression</strong></td>
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<tr>
<td>• Fatigue/decreased activity</td>
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<tr>
<td>• Gynecomastia</td>
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<tr>
<td>• Anemia</td>
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<tr>
<td>• Body hair loss</td>
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<tr>
<td>• Dry eyes</td>
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</table>

**Late Effects**

- Osteoporosis, fractures
- Metabolic syndrome
- Cardiovascular disease (possible increased risk of myocardial infarction)
- Diabetes; decreased sensitivity to insulin and oral glycemic agents
- Increased cholesterol

- Increased fat mass and decreased lean muscle mass/muscle wasting
- Venous thromboembolism
- Vertigo
- Cognitive dysfunction
- Disease progression

Skolarus et al., 2014
Potential Expectant Management Effects

Long-term Effects
- Stress, anxiety, worry
- Risks associated with repeat biopsy (active surveillance), PSAs and DREs
- Symptoms associated with disease progression

Late Effects
- Disease progression

Skolarus et al., 2014
Primary Care Providers’ Role in Cancer Survivorship Care

• PCPs should play an active role in the care coordination of cancer survivors by:
  – Promoting healthy behaviors
  – Assisting in the surveillance for cancer recurrence and second primary cancers
  – Assessing and managing physical and psychosocial long-term and late effects
  – Clarifying care roles when needed with other members of the cancer treatment team
View the Guidelines

• Breast at bit.ly/BrCaCare
• Colorectal at bit.ly/acscolorc
• Head and Neck at bit.ly/acsheadneck
• Prostate at bit.ly/ACSPrCa
Survivorship Continuing Education

GW Cancer Institute
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Cancer Survivorship E-Learning Series for Primary Care Providers

The Cancer Survivorship E-Learning Series is a continuing education program offered at no cost that provides a forum to educate primary care providers (e.g., general medicine physicians, geriatricians, gynecologists, physician assistants, nurse practitioners, nurses) who may have patients who are cancer survivors about how to better understand and care for survivors in the primary care setting.

Clinicians can learn about caring for survivors of adult-onset cancers through a series of ten enduring online educational modules.

For more information visit: CancerSurvivorshipCenterEducation.org

Module 1: Current Status of Survivorship Care and the Role of Primary Care Providers
Module 2: Late Effects of Cancer and its Treatments: Managing Comorbidities and Coordinating with Specialty Providers
Module 3: Late Effects of Cancer and its Treatments: Meeting the Psychosocial Health Care Needs of Survivors
Module 4: The Importance of Prevention in Cancer Survivorship: Empowering Survivors to Live Well
Module 5: A Team Approach: Survivorship Care Coordination
Module 6: Cancer Recovery and Rehabilitation
Module 7: Spotlight on Prostate Cancer Survivorship: Clinical Follow-Up Care Guideline for Primary Care Providers
Module 8: Spotlight on Colorectal Cancer Survivorship: Clinical Follow-Up Care Guideline for Primary Care Providers
Module 9: Spotlight on Breast Cancer Survivorship: Clinical Follow-Up Care Guideline for Primary Care Providers
Module 10: Spotlight on Head and Neck Cancer Survivorship: Clinical Follow-Up Care Guideline for Primary Care Providers

CONTINUING EDUCATION

For more information, please visit: CancerSurvivorshipCenterEducation.org

PROGRAM SUPPORT:

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CDC
Centers for Disease Control and Prevention

American Cancer Society®
Cancer Survivorship E-Learning Series

bit.ly/PCPE-Learning
# E-Learning Series: Module Topics

<table>
<thead>
<tr>
<th>Module 1</th>
<th>• The Current State of Survivorship Care and the Role of Primary Care Providers</th>
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</thead>
<tbody>
<tr>
<td>Module 2</td>
<td>• Late Effects of Cancer and its Treatments: Managing Comorbidities and Coordinating with Specialty Providers</td>
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E-Learning Series: Module Topics

Module 4
- The Importance of Prevention in Cancer Survivorship: Empowering Survivors to Live Well

Module 5
- A Team Approach: Survivorship Care Coordination

Module 6
- Cancer Recovery and Rehabilitation
E-Learning Series: Module Topics

Module 7
• Spotlight on Prostate Cancer Survivorship

Module 8
• Spotlight on Colorectal Cancer Survivorship

Module 9
• Spotlight on Breast Cancer Survivorship

Module 10
• Spotlight on Head and Neck Cancer Survivorship
E-Learning Series: Module Topics

• Each module includes:
  – Survivor interview
  – Narrated presentations
  – Pre/post assessments
  – List of resources
  – One hour CME/CNE per module
Survivorship Resources

• National Cancer Survivorship Resource Center
  www.cancer.org/survivorshipcenter

• Cancer Survivorship E-Learning Series for Primary Care Providers
  bit.ly/PCPE-Learning

• ACS Prevention, Early Detection and Survivorship Guidelines
  www.cancer.org/professionals
Questions?

If you have questions about the National Cancer Survivorship Resource Center, contact survivorship@cancer.org.

For questions about this presentation or the National Cancer Survivorship Resource Center Toolkit, contact gwci@gwu.edu.

www.gwcancerinstitute.org
www.cancer.org/survivorshipcenter
References


References


References


