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

Prevention ➔ Detection ➔ Diagnosis ➔ Treatment ➔ Survivorship
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

*Note: NH+ Lymphoma refers to Non-Hodgkin Lymphoma.*

American Cancer Society, 2014a
Focus on Survivorship

Number of Cancer Survivors

- Males:
  - 2014: 8,000,000
  - 2024: 12,000,000

- Females:
  - 2014: 4,000,000
  - 2024: 8,000,000

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
- Testis
- Oral Cavity/Pharynx
- Lung/Bronchus
- Leukemia

*Non-Hodgkin

American Cancer Society, 2014a
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
- Ovary
- Kidney

*Non-Hodgkin

American Cancer Society, 2014a
Survivorship by Time Since Diagnosis

American Cancer Society, 2014
Impacts of Cancer Treatment

- Individual Effects/Risks
  - Surgical Side Effects
  - Radiation Side Effects
  - Chemotherapy Side Effects
  - Hormonal Therapy Side Effects
  - Non-Treatment-Specific Side Effects
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

Quality of Life

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
## Potential Long-Term/Late Effects by Treatment Type

<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, Premature menopause, Sexual dysfunction, Neuropathy, “Chemo brain”, Kidney failure</td>
<td>Vision/cataracts, Infertility, Liver problems, Lung disease, Osteoporosis, Reduced lung capacity, Secondary primary cancers</td>
</tr>
<tr>
<td>Radiation therapy</td>
<td>Fatigue, Skin sensitivity, Lymphedema</td>
<td>Cataracts, Cavities and tooth decay, Cardiovascular disease, Hypothyroidism, Infertility, Lung disease, Intestinal problems, Second primary cancers</td>
</tr>
<tr>
<td>Surgery</td>
<td>Sexual dysfunction, Incontinence, Pain</td>
<td>Body image disturbance, Functional disability, 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
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
Survivorship Care Plan Templates

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

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American Cancer Society
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

AMERICAN CANCER SOCIETY/AMERICAN SOCIETY OF CLINICAL ONCOLOGY
BREAST CANCER SURVIVORSHIP CARE GUIDELINE SUMMARY
Assessment and Management of Long-term and Late Effects

SEXUAL FUNCTION AND FERTILITY
- Assess for sexual dysfunctions or problems with sexual intimacy including sexual dysfunction disorder (SD), sexual interest or desire disorder (SI), problems with initiating or maintaining an orgasm (MO), or problems with sexual function (PF), loss of sexual sensation of the vulva or clitoris, vaginismus, or vaginismus-like pain (VLP)
- Assess for reversible contributing factors and treat when appropriate
- Offer non-prescription, water-based lubricants and moisturizers for vaginal dryness
- Refer for psychosocial support, group therapy, sexual counseling, marital counseling, or intensive psychotherapy where appropriate
- Other questions of distressing signs who experience infertility in a specialist in reproductive endocrinology and infertility

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

MUSCULOSKELETAL HEALTH
- Assess for musculoskeletal symptoms by asking about symptoms at each encounter
  - Ask about:
    - Numbness of upper extremity limbs (A/1)
    - Musculoskeletal pain (A/1)
    - Difficulty with a plan for upper extremity, dexterity limited range of motion (A/1)
    - Malignancy (A/1)
    - Arthritis (A/1)
    - Weakness of upper extremity (A/1)
    - Difficulty with physical activity, adhesion (A/1)
    - Weakness of spinal cord injury (A/1)
- Offer one or more of the following interventions, based on clinical indication: acupuncture, physical activity, referral to physical therapy or rehabilitation

PREMATURE MENOPAUSE/HOT FLASHES
- Assess for premature menopause in declining hot flashes (PH), changes in menstrual (M), chemotherapy-related early menopause (C)
- Offer: NSAIDs, selective serotonin reuptake inhibitors (SSRIs), gabapentin, lifestyle modifications and dietary and functional modifications to help mitigate somatic symptoms of premature menopause

BONE HEALTH
- Assess for bone loss (osteoporosis, osteopenia) (O)
- Refer postmenopausal women to local for dual energy x-ray absorptionmetry (DEXA) scan
- Refer for repeat DEXA scores every 2 years for women taking and aromatase inhibitor, or menopausal women taking tamoxifen and/or a gonadotropin-releasing hormone (GnRH) agonist and women who have chemotherapeutic treatments for metastatic breast cancer (M)

BODY IMAGE
- Assess for body image appearance concerns (including breast asymmetry and shape) for all breast cancer survivors and their family members, patients with breast cancer, and their family members, patients with non-metastatic cancer, and their family members, patients with cancer and their family members
- Other interventions and surgery when appropriate
- Refer for psychosocial care as indicated

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High prevalence = 50% (H), Mid Prevalence 21-49% (M), Low Prevalence <20% (L), Unknown Prevalence (U)

CDC
Centers for Disease Control and Prevention

American Cancer Society®
Potential Surgery Effects

<table>
<thead>
<tr>
<th>Long-term Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of skin sensitivity</td>
</tr>
<tr>
<td>Body image issues</td>
</tr>
<tr>
<td>Sexual dysfunction</td>
</tr>
<tr>
<td>Numbness</td>
</tr>
<tr>
<td>Pain</td>
</tr>
<tr>
<td>Limited range of motion</td>
</tr>
<tr>
<td>Weakness</td>
</tr>
<tr>
<td>Poor cosmetic outcome</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Late Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphedema</td>
</tr>
<tr>
<td>Neuropathy</td>
</tr>
</tbody>
</table>

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

### Tamoxifen
- Hot flashes
- Changes in menstruation
- Weight gain
- Mood changes
- Increased triglycerides

### Aromatase Inhibitors
- Vaginal dryness
- Decreased libido
- Musculoskeletal symptoms/pain
- Cholesterol elevation

## Late Effects

### Tamoxifen
- Increased risk of stroke
- Increased risk of endometrial cancer
- Increased risk of blood clots
- Osteopenia in premenopausal women

### Aromatase Inhibitors
- Increased risk of osteoporosis
- Increased risk of fractures

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Runowicz et al., 2015
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 prolonged dyspareunia, sexual dysfunction, depression, fatigue, and quality-of-life issues.
- Discuss the potential impact of surgical therapy and pelvic irradiation on sexual function and emotional well-being.
- Discuss the potential impact on fertility in women, including options for preservation of fertility and methods to preserve fertility.
- Consider referral to a mental health professional for evaluation of depression or anxiety.
- Consider referral to a urologist for evaluation of sexual dysfunction in men.
- Discuss the potential impact on sexual function and emotional well-being.

**BOWEL/GI FUNCTION**
- Discuss the potential impact of surgery and/or radiation therapy on bowel function, including the potential for diarrhea, constipation, and fecal incontinence.
- Discuss the potential impact on sexual function and emotional well-being.
- Consider referral to a mental health professional for evaluation of depression or anxiety.
- Consider referral to a urologist for evaluation of sexual dysfunction in men.
- Discuss the potential impact on sexual function and emotional well-being.

**FATIGUE**
- Discuss the potential impact of surgery and/or radiation therapy on energy levels, including the potential for fatigue.
- Discuss the potential impact on sexual function and emotional well-being.
- Consider referral to a mental health professional for evaluation of depression or anxiety.
- Consider referral to a urologist for evaluation of sexual dysfunction in men.
- Discuss the potential impact on sexual function and emotional well-being.

**URINARY FUNCTION**
- Discuss the potential impact of surgery and/or radiation therapy on urinary function, including the potential for incontinence, urgency, and frequency.
- Discuss the potential impact on sexual function and emotional well-being.
- Consider referral to a mental health professional for evaluation of depression or anxiety.
- Consider referral to a urologist for evaluation of sexual dysfunction in men.
- Discuss the potential impact on sexual function and emotional well-being.

**NEUROPATHY**
- Discuss the potential impact of surgery and/or radiation therapy on peripheral neuropathy.
- Discuss the potential impact on sexual function and emotional well-being.
- Consider referral to a mental health professional for evaluation of depression or anxiety.
- Consider referral to a urologist for evaluation of sexual dysfunction in men.
- Discuss the potential impact on sexual function and emotional well-being.

**High prevalence ≥5% (H), Mid Prevalence: 21%-49% (M), Low Prevalence ≤20% (L), Unknown Prevalence (U)**
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 optimal emergency room policy and refer to rehabilitation specialists in the range of mobility and ability to perform daily tasks with effective physical situations referred to a Physical Medicine and Rehabilitation physician for prompt assessment.
- Assess for central adiposity and refer for comprehensive nutrition and lifestyle management if central-dysphagia or neuropathy found.
- Prescribe neuromuscular agents such as pregabalin, gabapentin, and duloxetine or refer for trial treatment to combat muscle spasticity and irritations in the affected muscles for pain management and spasm control as needed.
- Assess for shoulder pain (MSK) and dysphagia after neck dissection.
- Conduct baseline assessment for swallowing function prior to treatment and conduct routine assessment for swallowing deficits as part of the oncologic treatment regimen, referring to rehabilitation specialist for improvement to pain, disability and range of motion.
- Refer to rehabilitation specialists and dental professionals to prevent and treat oral hygiene and refer for proper exercises to prevent oral and parotid glands as indicated.

**Reflux**
- Monitor for developing or worsening gastrointestinal reflux disease.
- Counsel on prescribed medications and associated symptoms.
- Recommend proton pump inhibitors or proton-pump inhibitors with a three-inch block under head of bed, not using or reclining three hours before bed, tobacco cessation and alcohol moderation.
- Refer to psychosocial specialists on referral list to treat treatments.

**Lymphedema**
- Assess for lymphedema using NCCN’s Common Toxicity Criteria for Adverse Events v. 4.03 in order for oncologic evaluation of upper arm edema to the arm above and below, tissue measurements, echography, or general imaging.
- Refer to rehabilitation specialists for treatment consisting of manual lymphatic drainage and, if needed, compression bandaging.

**Fatigue**
- Assess for fatigue and treat if necessary (e.g., anemia, thyroid or cardiac dysfunction).
- Other treatment or referral for factors that may impact fatigue (e.g., mood disorders, sleep or nutrition, pain).
- Counsel on ways to engage in regular physical activity and refer for cognitive behavioral therapy as appropriate.

**Taste**
- Assess for altered or loss of taste.
- Refer to infection control unit for dietary counseling and assistance in additional assessing of food, avoiding unpleasant food and expanding dietary options.

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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>• Dysarthria</td>
</tr>
<tr>
<td><strong>Lymphovascular</strong></td>
<td><strong>Pulmonary</strong></td>
</tr>
<tr>
<td>• Lymphedema</td>
<td>• Pulmonary fibrosis</td>
</tr>
<tr>
<td><strong>Oral health complications</strong></td>
<td><strong>Neuromuscular</strong></td>
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<td>• Xerostomia</td>
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<td>• Oral infections</td>
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<tr>
<td><strong>Neuromuscular</strong></td>
<td>• Brachial plexopathy</td>
</tr>
<tr>
<td>• Cervical radiculopathy</td>
<td><strong>Musculoskeletal</strong></td>
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<tr>
<td>• Cervical dystonia</td>
<td>• Osteonecrosis</td>
</tr>
<tr>
<td><strong>Lymphovascular</strong></td>
<td><strong>Sensory complications</strong></td>
</tr>
<tr>
<td>• Lymphedema</td>
<td>• Hearing loss</td>
</tr>
<tr>
<td>• Carotid stenosis</td>
<td>• Ocular issues</td>
</tr>
<tr>
<td><strong>Sensory complications</strong></td>
<td>• Altered or loss of taste</td>
</tr>
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<td>• Hearing loss</td>
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<td><strong>Cohen et al., 2016</strong></td>
</tr>
</tbody>
</table>

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American Cancer Society
### Potential Chemotherapy Effects

**Long-term Effects**

- **Neuromuscular**
  - Sensor/motor neuropathy
  - Sensory ataxia
  - Gait dysfunction
  - Vertigo

- **Other effects**
  - Hot flashes/sweats
  - Weight gain, abdominal obesity
  - Fatigue/decreased activity

- **Late Effects**
  - **Neuromuscular**
    - Cardiac abnormality, cardiomyopathy
  - **Other effects**
    - Osteoporosis, fractures
    - Metabolic syndrome
    - Cardiovascular disease—possible increased risk of myocardial infarction

- **Other effects**
  - Anemia
  - Body hair loss
  - Dry eyes

- **Other effects**
  - 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

_Cohen et al., 2016_
Prostate Cancer Survivorship Care

**SEXUAL FUNCTION AND INTIMACY**
- Discuss sexual function.
- Use validated tools to monitor erectile function over time.
- Erectile dysfunction (ED) may be addressed through a variety of options, including penile rehabilitation or prescription of phosphodiesterase type 5 inhibitors (e.g., sildenafil, tadalafil).
- Refer to a sexual health specialist or psychologist to review treatment and counseling options.
- Encourage couples to discuss sexual intimacy and refer to counseling or support services as appropriate.
- Instruct couples on use of sexual aids to improve erectile dysfunction (ED) for male and female partners.
- Refer to mental health professionals with expertise in sex therapy.

**BOWEL FUNCTION**
- Discuss bowel function and symptoms (e.g., rectal bleeding or constipation).
- For men with a negative colonoscopy, counseling should include education on rectal bleeding (e.g., prolapsed hemorrhoids, anal fissures, or anal warts).
- Consider a referral to a gastroenterologist or colorectal surgeon as appropriate.

**URINARY FUNCTION**
- Discuss urinary function (e.g., decreased bladder capacity, dribbling, hesitancy, frequency, hematuria, incontinence, urgency, nocturia).
- Consider referral to a urologist for further evaluation.
- Provide education on the importance of regular bladder training and the use of anticholinergic medications or beta blockers (e.g., tolterodine).

**CARDIOVASCULAR AND METABOLIC FUNCTION (SPECIFIC RISK FOR MEN RECEIVING ADT)**
- Monitor cardiovascular risk factors, including cholesterol, blood pressure, and glucose levels.
- Refer to a cardiologist for further evaluation.

**DISTRESS, DEPRESSION, PSA ANXIETY**
- Screen for distress (i.e., depression) and PSA anxiety, which may occur at least annually using a simple screening tool, such as the Distress Thermometer.
- Manage distress with education using in-office counseling or referral to a mental health professional.
- Refer to a mental health professional for further evaluation.

**ANEMIA (SPECIFIC RISK FOR MEN RECEIVING ADT)**
- Screen for anemia (i.e., hemoglobin levels) at each visit.
- Monitor for changes in iron status and consider supplementation as needed.

**FRACTURE RISK/OSTEOPOROSIS**
- Assess risk of fracture for men treated with ADT or older men with a history of osteoporosis.
- Consider bone density testing and fracture risk assessment.
- Refer to a bone densitometry specialist as appropriate.

**HIGH PREVALENCE ≥50% (H), MODERATE PREVALENCE 21-40% (M), LOW PREVALENCE ≤20% (L), UNKNOWN PREVALENCE (U)**

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## 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

<table>
<thead>
<tr>
<th>Urinary dysfunction</th>
<th>Sexual dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary incontinence</td>
<td>Progressive erectile dysfunction (ED)</td>
</tr>
<tr>
<td>Urinary symptoms (dysuria, urgency, frequency, nocturia, dribbling)</td>
<td>Decreased semen volume</td>
</tr>
<tr>
<td>Hematuria</td>
<td></td>
</tr>
<tr>
<td>Urethral stricture</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bowel dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fecal urgency, frequency, incontinence</td>
</tr>
<tr>
<td>Blood in stool</td>
</tr>
<tr>
<td>Rectal inflammation, pain</td>
</tr>
</tbody>
</table>

### Late Effects

<table>
<thead>
<tr>
<th>Urinary dysfunction</th>
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</thead>
<tbody>
<tr>
<td>Urethral stricture</td>
</tr>
<tr>
<td>Hematuria due to small blood vessel changes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED can be delayed in onset 6-36 months after therapy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bowel dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectal bleeding secondary to thinning/small blood vessel changes of anterior rectal wall mucosa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disease progression</th>
</tr>
</thead>
</table>

Skolarus et al., 2014
**Potential Hormonal Therapy Effects**

### Long-term Effects

- **Sexual dysfunction**
  - Loss of libido
  - Erectile dysfunction (ED)
- **Other effects**
  - Hot flushes/sweats
- **Weight gain, abdominal obesity**
- **Change in body image**
- **Excessive emotional reactions and frequent mood changes**
- **Depression**
- **Fatigue/decreased activity**
- **Gynecomastia**
- **Anemia**
- **Body hair loss**
- **Dry eyes**

### 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

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

This activity meets the criteria for 10.0 continuing education credits for physicians, nurse practitioners, physician assistants, nurses, and allied health education professionals.

PROGRAM SUPPORT

The Cancer Survivorship E-Learning Series for Primary Care Providers is supported by Cooperative Agreement #U58/CCU156005 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.
Cancer Survivorship E-Learning Series

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

Module 1
- The Current State 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
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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
<table>
<thead>
<tr>
<th>Module</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 7</td>
<td>Spotlight on Prostate Cancer Survivorship</td>
</tr>
<tr>
<td>Module 8</td>
<td>Spotlight on Colorectal Cancer Survivorship</td>
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</tr>
</tbody>
</table>
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


