# Survivorship – Testicular Cancer, Germ Cell

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**TABLE OF CONTENTS**

- Germ Cell Seminoma Stage I Surveillance..........................Page 2
- Germ Cell Seminoma Stage I – Post Adjuvant Radiation Therapy or Single-agent Carboplatin...Page 3
- Germ Cell Non-Seminoma Stage I Surveillance..........................Page 4
- Germ Cell Non-Seminoma Stage I – Post-RPLND and/or Adjuvant Chemotherapy........Page 5
- Germ Cell – All types, Stages II-IIIC........................................Page 6
- Suggested Readings................................................................Page 7 – 8
- Development Credits...............................................................Page 9

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RPLND = retroperitoneal lymph node dissection
Survivorship – Testicular Cancer, Germ Cell: Seminoma Stage I Surveillance

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**Multi-disciplinary Algorithm for the Survivorship of Testicular Cancer, Seminoma Stage I Surveillance**

- **SURVEILLANCE**
  - Physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
  - Years 2-5:
    - AFP, beta HCG and LDH every 6 months
    - Chest x-ray every 6 months
    - CT of abdomen and pelvis every 12-24 months
    - Testosterone, glucose, creatinine, and lipid profile annually
    - Testicular ultrasound* annually if high-risk
  - Years 6-10:
    - Comprehensive metabolic panel (CMP), CBC with platelets, serum testosterone, and lipid profile annually
    - AFP, beta HCG and LDH as clinically indicated
    - Chest x-ray annually (optional)
    - CT of abdomen and pelvis as clinically indicated
    - Testicular ultrasound* annually if high-risk
  - After year 10:
    - Testosterone, glucose, creatinine, and lipid profile annually
    - Imaging studies as clinically indicated

- **MONITORING FOR LATE EFFECTS**
  - Infertility
  - Hypogonadism

  Patient education, counseling, and screening:
  - Lifestyle risk assessment
  - Cancer screening
  - HPV vaccination as clinically indicated (see HPV Vaccination Algorithm)
  - Screening for Hepatitis B and C as clinically indicated (see Hepatitis Screening and Management – HBV and HCV Algorithm)
  - Cardiovascular risk reduction

- **RISK REDUCTION/EARLY DETECTION**

- **PSYCHOSOCIAL FUNCTIONING**
  - Distress management (see Distress Screening and Psychosocial Management Algorithm)
  - Financial stressors
  - Social support
  - Body image

- **ELIGIBILITY**
  - Germ cell tumors, seminoma stage I, 2 or more years from treatment completion and NED

- **DISPOSITION**

New primary or recurrent disease?

- Yes
  - Return to primary treating physician

- No
  - Continue survivorship monitoring

- Refer or consult as indicated

NED = no evidence of disease

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1 Annual ultrasound of contralateral testicle if one of the following present: diagnosis of seminoma and less than 30 years old when diagnosed or testicular maldescent or infertility
2 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
3 Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
4 Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health

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Approved by the Executive Committee of the Medical Staff on 05/29/2018
Survivorship – Testicular Cancer, Germ Cell: Seminoma Stage I – Post-Adjuvant Radiotherapy or Single-Agent Carboplatin

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### ELIGIBILITY

Germ cell tumors, seminoma stage I, 2 or more years post-contrast radiotherapy or single-agent carboplatin and NED

### CONCURRENT COMPONENTS OF VISIT

- Physical examination with each visit to include thorough examination of supraclavicular lymph nodes and contralateral testicle
- Years 2 and 3:
  - AFP, beta HCG, and LDH every 6 months
  - CBC and platelets, testosterone, glucose, creatinine, and lipid profile annually
  - Chest x-ray and CT annually (CT of pelvis if post-radiation therapy; CT of abdomen if post-carboplatin)
  - Testicular ultrasound annually if high-risk
- Years 4 and 5:
  - CBC and platelets, AFP, beta HCG, LDH, testosterone, glucose, creatinine, and lipid profile annually
  - Chest x-ray annually
  - CT of abdomen every 12-24 months (CT of pelvis if post-radiation therapy; CT of abdomen if post-carboplatin)
  - Testicular ultrasound annually if high-risk
- Years 6-10:
  - CMP, CBC and platelets, serum testosterone and lipid profile annually
  - AFP, beta HCG, and LDH as clinically indicated
  - Testicular ultrasound annually if high-risk
  - Other imaging as clinically indicated
- After year 10:
  - CBC and platelets, testosterone, glucose, creatinine, and lipid profile annually
  - Imaging as clinically indicated

### SURVEILLANCE

- Infertility
- Hypogonadism
- Cardiovascular disease
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

### MONITORING FOR LATE EFFECTS

- Physical activity, nutrition, and tobacco cessation algorithm
- Ongoing reassessment of lifestyle risks should be a part of routine clinical practice

### RISK REDUCTION/EARLY DETECTION

- Infertility
- Cardiovascular disease
- Hypogonadism
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

### PSYCHOSOCIAL FUNCTIONING

- Distress management (see Distress Screening and Psychosocial Management Algorithm)
- Financial stressors
- Body image
- Social support

### DISPOSITION

- New primary or recurrent disease?
  - Yes
    - Refer or consult as indicated
  - No
    - Continue survivorship monitoring

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1. Annual ultrasound of contralateral testicle if one of the following is present: diagnosis of seminoma and less than 30 years old when diagnosed or testicular maldescent, or infertility
2. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health
3. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
4. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
Survivorship – Testicular Cancer, Germ Cell: Non-Seminoma Stage I Surveillance

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ELIGIBILITY
Germ cell tumors, non-seminoma stage I, 2 or more years from completion of treatment and NED

CONCURRENT COMPONENTS OF VISITS
- Physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Years 2-5:
  -AFP, beta HCG and LDH every 6 months
  -Testosterone, glucose, creatinine, and lipid profile annually
  -Chest x-ray every 6 months
  -Testicular ultrasound annually if high-risk
  -CT of abdomen and pelvis annually
- Years 6-10:
  -CMP, CBC and platelets, serum testosterone and lipid profile annually
  -AFP, beta HCG and LDH as clinically indicated
  -Testicular ultrasound annually if high-risk
- After year 10:
  -Testosterone, glucose, creatinine, and lipid profile annually
  -Imaging studies as clinically indicated

SURVEILLANCE
- Infertility
- Hypogonadism

MONITORING FOR LATE EFFECTS
Patient education, counseling, and screening:
- Lifestyle risk assessment
- Cancer screening
- HPV vaccination as clinically indicated (see HPV Vaccination Algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis Screening and Management – HBV and HCV Algorithm)
- Cardiovascular risk reduction

RISK REDUCTION/EARLY DETECTION
- Distress management (see Distress Screening and Psychosocial Management Algorithm)
- Financial stressors
- Social support
- Body image

PSYCHOSOCIAL FUNCTIONING

Assess for:

DISPOSITION

New primary or recurrent disease?

Yes
- Return to primary treating physician

No
- Continue survivorship monitoring

Refer or consult as indicated

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1 Annual ultrasound of contralateral testicle if one of the following present: diagnosis of seminoma and less than 30 years old when diagnosed or testicular maldescent or infertility
2 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
3 Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
4 Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health

CMP = comprehensive metabolic panel
NED = no evidence of disease

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Germ cell tumors, non-seminoma, stage I, 2 or more years post-RPLND and/or adjuvant chemotherapy completion and NED

SURVEILLANCE

- Physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Years 2-5:
  - AFP, beta HCG, and LDH every 6 months
  - Chest x-ray every 6 months
  - Testosterone, glucose, creatinine, and lipid profile annually
  - CBC and platelets annually if adjuvant chemotherapy
  - Testicular ultrasound\(^1\) annually if high risk
  - CT of abdomen and pelvis at year 2 and 5
- Years 6-10:
  - CMP, CBC and platelets, serum testosterone and lipid profile annually
  - AFP, beta HCG and LDH as clinically indicated
  - Chest x-ray annually
  - Testicular ultrasound\(^1\) annually if high risk
  - Other imaging as clinically indicated
- After year 10:
  - Testosterone, glucose, creatinine, and lipid profile annually
  - CBC and platelets annually if adjuvant chemotherapy
  - Imaging as clinically indicated

MONITORING FOR LATE EFFECTS

- Infertility
- Cardiovascular disease\(^2\)
- Hypogonadism
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

Patient education, counseling, and screening:
- Lifestyle risk assessment\(^3\)
- HPV screening\(^4\)
- HPV vaccination as clinically indicated (see HPV Vaccination Algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis Screening and Management – HBV and HCV Algorithm)

RISK REDUCTION/EARLY DETECTION

PSYCHOSOCIAL FUNCTIONING

- Assess for:
  - Distress management (see Distress Screening and Psychosocial Management Algorithm)
  - Financial stressors
  - Social support
  - Body image

DISPOSITION

- Return to primary treating physician
- Refer or consult as indicated

1. Annual ultrasound of contralateral testicle if one of the following is present: diagnosis of seminoma and less than 30 years old when diagnosed or testicular maldescent, or infertility
2. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health
3. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
4. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening

\(\text{CMP} = \text{comprehensive metabolic panel}\)
\(\text{NED} = \text{no evidence of disease}\)
Survivorship – Testicular Cancer, Germ Cell: All types, Stages II-IIIC

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<table>
<thead>
<tr>
<th>ELIGIBILITY</th>
<th>CONCURRENT COMPONENT OF VISIT</th>
<th>DISPOSITION</th>
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</table>
| Germ cell tumors, all types, stages II – IIIC after completion of treatment and NED | - Physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
  - Category 1, 2, years 2-5 or Category 2, years 3-5:
    - AFP, beta HCG, and LDH every 6 months
    - CBC and platelets, testosterone, glucose, creatinine, and lipid profile annually
    - Chest x-ray every 6 months
    - CT of abdomen and pelvis annually
  - Testicular ultrasound annually if high-risk
  - Categories 1 and 2, years 6-10:
    - CMP, CBC and platelets, serum testosterone and lipid profile annually
    - AFP, beta HCG and LDH as clinically indicated
    - Chest x-ray annually
    - Testicular ultrasound annually if high-risk
    - CT of abdomen and pelvis every 24 months or as clinically indicated | Return to primary treating physician

- Infertility
- Hypogonadism
- Cardiac disease
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

Patient education, counseling, and screening:
- Lifestyle risk assessment
- Cancer screening
- HPV vaccination as clinically indicated (see HPV Vaccination Algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis Screening and Management – HBV and HCV Algorithm)

Assess for:
- Distress management (see Distress Screening and Psychosocial Management Algorithm)
- Financial stressors
- Social support
- Body image

New primary or recurrent disease?

- Yes
  - Continue survivorship monitoring
- No
  - Refer or consult as indicated

Note:
1. Category 1: germ cell tumors all types, stages II – IIA; no evidence of disease at 2 years
2. Category 2: germ cell tumors all types, stages IIB and IIIC; no evidence of disease at 3 years
3. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
4. See Physical Activity, Nutrition, and Tobacco Cessation algorithm: ongoing reassessment of lifestyle risks should be a part of routine clinical practice
5. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health

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SUGGESTED READINGS


Survivorship – Testicular Cancer, Germ Cell

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SUGGESTED READINGS - continued


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DEVELOPMENT CREDITS

This survivorship algorithm is based on majority expert opinion of the Genitourinary Survivorship work group at The University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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