

Standard and High Risk Renal Tumour* Pediatric Surveillance & Follow-up Guidelines

| | Years from end of therapy | Date | Location | H&P | CBC | Chem | Abdo US | Urine tests | GFR | ECHO [#] | TSH, T4 [^] | Thyroid US [^] | PFTs | DEXA | Metab | LH, FSH, Test or Est | Additional screening | General | | |
|---------------------|---------------------------|------|----------|-----|---------------------|---|-----------------------|---|----------------|--|-------------------------------|-------------------------------|--|---------------------|--|---|--|---------|--|--|
| Late Effects Clinic | 6 | | | + | | | | + | | | + | + | | | | | | | | |
| | 7 | | | + | | | | | | | + | | | | | | | | | |
| | 8 | | | + | | | | + | | | + | + | | | | | | | | |
| | 9 | | | + | | | | | | | + | | | | | | | | | |
| | 10 | | | + | | | | + | | | + | + | | | | | | | | |
| | 11 | | | + | | | | | | | + | | | | | | | | | |
| | 12 | | | + | | | | + | | | + | + | | | | | | | | |
| | 13 | | | + | | | | | | | + | | | | | | | | | |
| | 14 | | | + | | | | | + | | + | + | | | | | | | | |
| | 15 | | | + | | | | | | | + | | | | | | | | | |
| | 16 | | | + | | | | | + | | + | + | | | | | | | | |
| | 17 | | | + | | | | | | | + | | | | | | | | | |
| | 18 | | | + | | | | | + | | + | + | | | | | | | | |
| Notes | | | | | If clinical concern | Lytes, Ca, Mg, PO4, Cr, urea, +/- LFTs. | Q1y to 10y if stage V | U/A, urine Prot:Cr & Alb:Cr ratio. Rpt Q1y if abN | Rpt Q2y if abN | [#] Insert added frequency based on cardiac guidelines (see over). ECG if clinical concerns | [^] If chest RT only | [^] If chest RT only | If lung RT or surgery. Repeat Q2y if abN | Baseline if abdo RT | Fasting glc and lipids if abdo RT. Rpt Q2y | Baseline age 12 y if CED \geq 4 or clinical concerns. Rpt Q1y | Based on site of metastases, surgery or RT | | | |

*Includes Wilms tumour stage I and II with unfavourable histology; Wilms tumour stages III-IV any histology; and clear cell sarcoma of the kidney

[^]CED: Cyclophosphamide Equivalence Dose (see over)

Further Surveillance

Beckwith-Wiedemann Syndrome
Nephroblastomatosis

Semen Analysis
Anti-Mullerian Hormone

Breast MRI and Mammogram
Colonoscopy

Abdo US Q3mo to age 8y
Alternate abdo MRI and US Q6mo until complete 5 years of testing or until age 8y
From age 18y in males
From age 16y in females if CED \geq 6 g/m² or pelvic RT; or earlier if clinical concerns
From later of age 25y or 8y after exposure if chest RT
From later of age 30y or 5y after exposure to abdominal RT

Cardiac Surveillance Guidelines (BC)

| Anthracycline Dose* | Radiation Dose** | Recommended Frequency of Echo |
|-------------------------|------------------|-------------------------------|
| None | < 15 Gy or none | No Screening |
| | 15 - < 35 Gy | Every 5 years |
| | 35 Gy | Every 2 years |
| < 250 mg/m ² | < 15 Gy or none | Every 5 years |
| | 15 Gy | Every 2 years |
| 250 mg/m ² | Any or none | Every 2 years |

*Based on total doses of doxorubicin or the equivalent doses of other anthracyclines

**Based on radiation dose with potential impact to heart (radiation to chest, abdomen, spine [thoracic, whole], total body [TBI])

COG LTFU Guidelines version 5.0 (Oct 2018)

Anthracycline Equivalent Dose

| Agent | Correction factor |
|--------------|-------------------|
| Doxorubicin | 1.0 |
| Daunorubicin | 0.5 |
| Epirubicin | 0.67 |
| Mitoxantrone | 4.0 |
| Idarubicin | 5.0 |

Chow J Clin Oncol 2015;33(5);394-402

Risk of Prolonged Oligospermia or Azoospermia

| Agent | Possible Risk | High Risk |
|--------------------|-------------------------|-------------------------|
| Cyclophosphamide | > 4g/m ² | > 7.5 g/m ² |
| Busulphan | | > 600 mg/m ² |
| Melphalan | | > 140 mg/m ² |
| Ifosfamide | > 42 g/m ² | > 60 g/m ² |
| Procarbazine | > 3 g/m ² | > 4 g/m ² |
| Chlorambucil | | > 1.4 g/m ² |
| BCNU | > 300 mg/m ² | > 1 g/m ² |
| CCNU | | > 500 mg/m ² |
| Cisplatin | > 300 mg/m ² | > 600 mg/m ² |
| Testicular RT dose | > 200 cGy | > 1200 cGy |

*Lower doses are still possible risk

1. Green J Clin Oncol 2010;28:332-9
2. Meistrich Pediatr Blood Cancer 2009;53:261-6
3. Wynn Human Reprod Update 2010;16(3):312-328

Risk of Premature Ovarian Insufficiency or Infertility

| Agent | Possible Risk | High Risk | Ref |
|------------------|-------------------------|----------------------|-----|
| CED | > 4 g/m ² | > 8 g/m ² | 1 |
| Procarbazine | > 2 g/m ² | > 4 g/m ² | 2 |
| Cisplatin | > 300 mg/m ² | | 3 |
| Dactinomycin | >12.2 mg/m ² | | 4 |
| Ovarian RT dose* | > 100 cGy | > 1000 cGy | 5 |

*Age dependent (see nomogram⁵)

[^]Bevacizumab can cause ovarian failure; possibly acute and transient only⁶

1. Green Pediatr Blood Cancer 2014;61(1):53-67
2. Van der Kaaij J Clin Oncol 2012;30(3):291-299
3. Solheim Gyne Oncol 2015;136(2):224-229
4. Van Den Berg Hum Reprod 2018; 33(8):1474-1488
5. Wallace Int J Radiat Oncol;62(3):738-744
6. Imai Molec Clin Oncol 2017;6:807-810

Cyclophosphamide Equivalent Dose (CED)

| Agent | Correction factor |
|------------------|-------------------|
| Cyclophosphamide | 1.0 |
| Ifosfamide | 0.244 |
| Procarbazine | 0.857 |
| Chlorambucil | 14.286 |
| BCNU | 15 |
| CCNU | 16 |
| Melphalan | 40 |
| Thiotepa | 50 |
| Nitrogen Mustard | 100 |
| Busulphan | 8.823 |

Green Pediatr Blood Ca 2014;61:53-67