

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

	Months from end of therapy	Date	Location	H&P	CBC	Chem	CXR & Abdo U/S	Urine tests	GFR	ECHO <sup>#</sup>	PFTs	LH, FSH, Test or Est	Additional screening	General
Early Follow-Up Clinic	0				End of treatment evaluations (per protocol)									Summary for LTFU clinic
	3			+			+							
	6			+	+	+	+	+						Attenuated vaccine re-immunizations
	9			+			+							
	12			+	+	+	+	+	+	+	+			Live vaccine re-immunizations
	15			+			+							
	18			+	+	+	+	+						
	21			+			+							
24			+	+	+	+	+							
LTFU Clinic	27			+										
	30			+			+							
	33			+										
	36			+	+	+	+	+		+				
	42			+			+							
	48			+	+	+	+	+						
	54			+			+							
	60			+	+	+	+	+						Refer to Late Effects clinic
Notes					Lytes, Ca, Mg, PO4, Cr, urea, LFTs	Continue Q3mo to 36 mo if stage V	U/A, urine Pr:Cr & Alb:Cr ratio	Rpt Q2y if abN	<b>#Insert added frequency</b> based on cardiac guidelines (see over). ECG if clinical concerns	If lung RT or surgery. Repeat Q2y if abN	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)

<b>Further Surveillance</b>	
Beckwith-Wiedemann Syndrome Nephroblastomatosis	Abdo US Q3mo to age 8y Alternate abdo MRI and US Q6mo until complete 5 years of testing or until age 8y
Semen Analysis Anti-Mullerian Hormone	From age 18y in males From age 16y in females if CED $\geq$ 6 g/m <sup>2</sup> or pelvic RT; or earlier if clinical concerns
Breast MRI and Mammogram Colonoscopy	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)**

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

<b>Agent</b>	<b>Correction factor</b>
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**

<b>Agent</b>	<b>Possible Risk</b>	<b>High Risk</b>
Cyclophosphamide	> 4g/m <sup>2</sup>	> 7.5 g/m <sup>2</sup>
Busulphan		> 600 mg/m <sup>2</sup>
Melphalan		> 140 mg/m <sup>2</sup>
Ifosfamide	> 42 g/m <sup>2</sup>	> 60 g/m <sup>2</sup>
Procarbazine	> 3 g/m <sup>2</sup>	> 4 g/m <sup>2</sup>
Chlorambucil		> 1.4 g/m <sup>2</sup>
BCNU	> 300 mg/m <sup>2</sup>	> 1 g/m <sup>2</sup>
CCNU		> 500 mg/m <sup>2</sup>
Cisplatin	> 300 mg/m <sup>2</sup>	> 600 mg/m <sup>2</sup>
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. Wyns Human Reprod Update 2010;16(3):312-328

**Risk of Premature Ovarian Insufficiency or Infertility**

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

\*Age dependent (see nomogram<sup>5</sup>)

^Bevacizumab can cause ovarian failure; possibly acute and transient only<sup>6</sup>

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)**

<b>Agent</b>	<b>Correction factor</b>
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