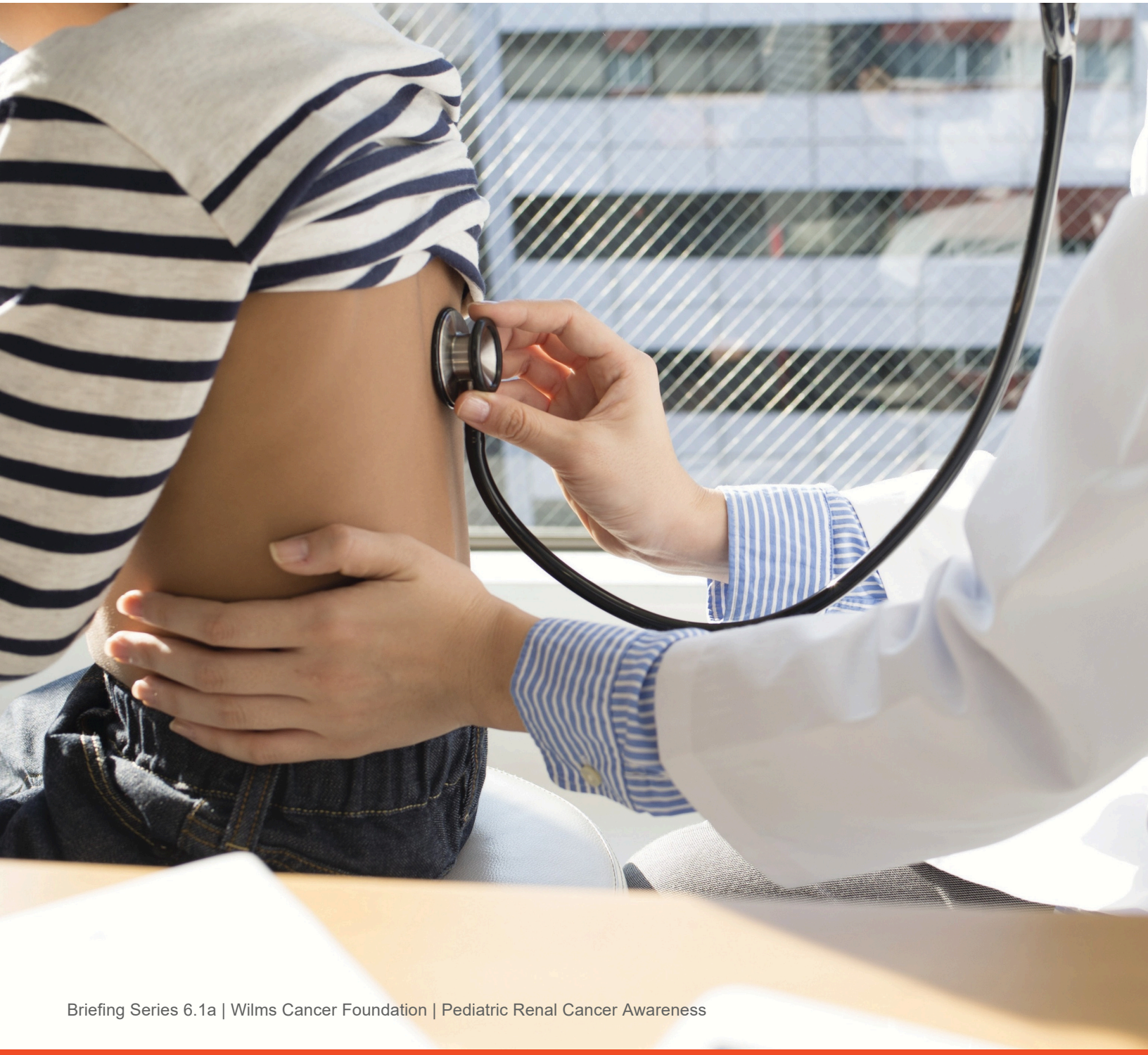
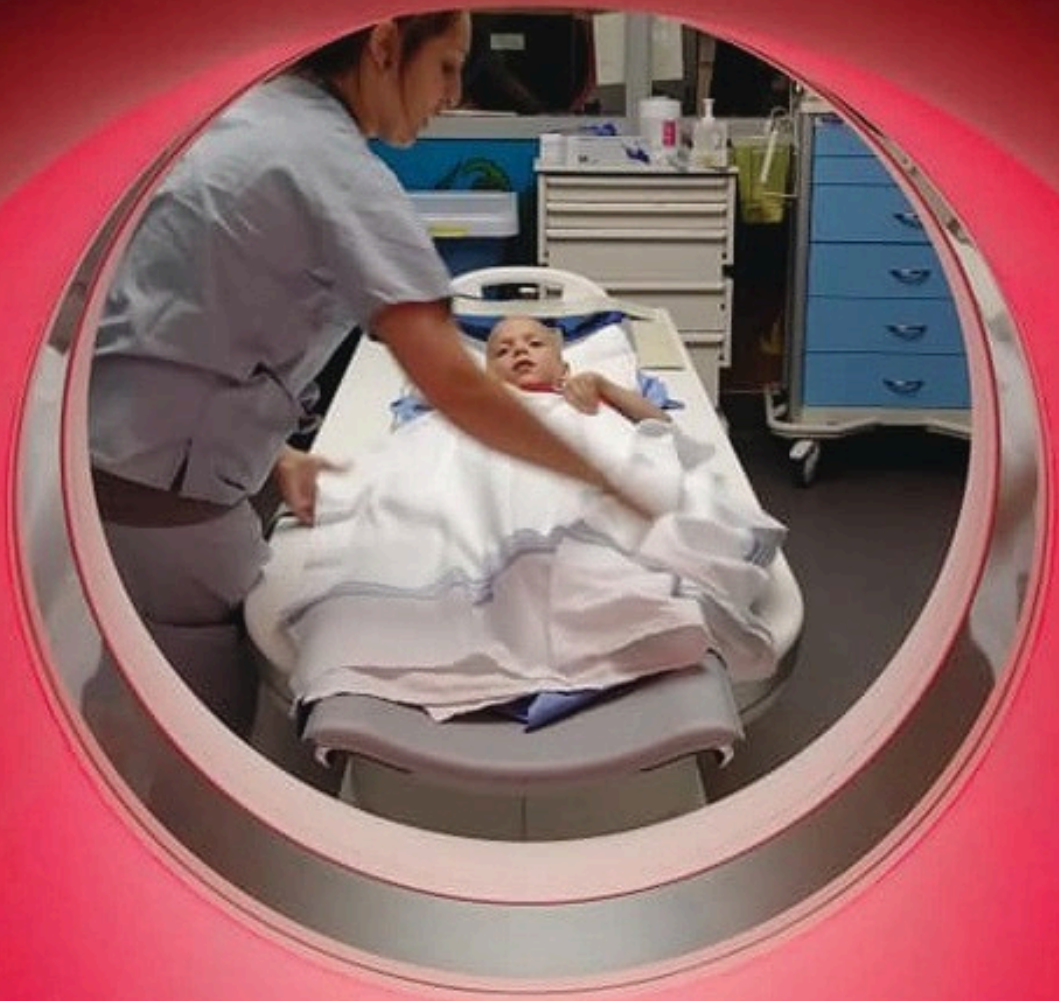
Wilms Cancer Foundation

Wilms Tumor

Surveillance & Follow-up Guidelines

Standard & High-Risk Pediatric Renal Tumor (Wilms)





Wilms Cancer Foundation (WCF)

The Wilms Cancer Foundation (WCF), is a charitable organization, that supports and represents the needs of children, families and healthcare organizations affected by pediatric renal (kidney) cancer (particularly nephroblastoma commonly known as 'Wilms'). Its mission is to establish an international program of awareness, education, advocacy, early detection treatment and support to tackle the spread of the disease.

This WCF guide is for educational purposes only. It is based on international pediatric oncology standards in Canada, the United States and Europe. Seek advice from a qualified medical professional should you have any concerns or questions.

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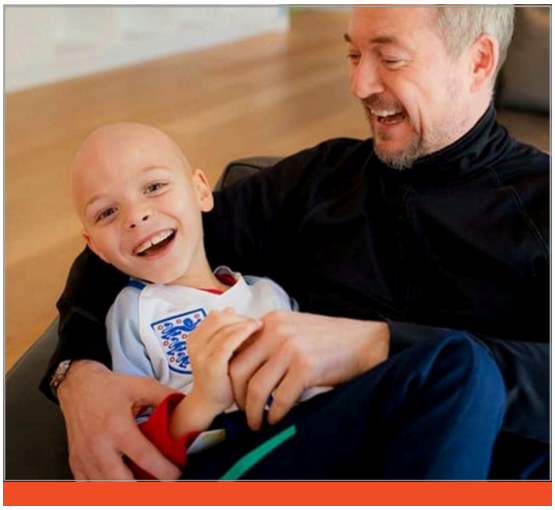


Objectives of Surveillance

Standard and High Risk Renal Tumour*														
	Months from end of therapy	Date	Location	H&P	Metalab	CBC	Chem	CXR & Abdo U/S	Urine Test	GFR	EC H O*	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-immunization
	9			+				+							
	12			+	+	+	+	+	+	+	+	+			Live vaccine re-immunization
	15			+				+							
	18			+		+	+	+	+						
	21			+				+							
	24			+		+	+	+	+						
LFTU Clinic	27			+											
	30			+				+							
	33			+											
	36			+	+	+	+	+	+						
	42			+				+							
	48			+		+	+	+	+						
	54			+				+							
	60			+	+	+	+	+	+						Refer to Late Effects clinic
	Notes				Non fasting glc, HbA1C and lipid panel		Lytes, Ca, Mg, PO4, Cr, urea, LFTs	Continue Q3 move to 36 months if stage V	U/A urine Pr:Cr & Alb: Cr ratio	Rpt Q2y if abN	*Insert added frequency based on cardiac guidelines. ECG if clinical conserns	If lung RT or surgery, Repeat if Q2y abN	Baseline age 11yrs if CED> 4 or clinical concerns. Rpt Q1y	Based on site of metastases, surgery or RT	

*Includes Wilms tumour stage I and II with unfavorable histology; Wilms tumour stages III-IV any histology; and clear sarcoma of the kidney *CED: Cyclophosphamide Equivalence Dose (see over)

Further Surveillance	
Beckwith-Wiedemann Sydrome	Abdo US and AFP Q3 to age 8yrs.
Nephroblastomatosis	Alternate abdo MRI and US Q6 months until complete 5yrs. of testing or until age 8 yrs.
Semen Analysis	From age 18yrs. in males if moderate or high risk.
Anti-Mullerian Hormone	From age 12yrs. in females if CED > 6g/m2 or pelvic RT; or earlier if clinical concerns. Rpt Q2 3yrs. if normal. Refer to pediatric Gynecology if abnormal.
Breast MRI and Mammogram	From later of age 25yrs. or 8yrs. after exposure if chest RT
Colonoscopy or Stool Testing	From later of age 30yrs. or 5yrs. after exposure to abdominal RT

1) General Strategy Breakdown

Detect tumor recurrence early:

- Local relapse in the kidney bed;
- Distant metastases (lungs, liver, other sites).

Monitor late effects of therapy:

- Renal function (especially if nephrectomy or nephrotoxic chemo);
- Cardiovascular function (anthracyclines or radiation exposure);
- Endocrine/puberty issues (if abdominal/ pelvic radiation);
- Pulmonary function (if thoracic radiation or lung metastases).

Support growth, nutrition & general development:

- Detect hypertension, proteinuria, or other metabolic complications.

The following represents a breakdown of the general strategy for standard- and high-risk pediatric renal tumor surveillance and follow-up, based on typical guidelines (e.g., COG Wilms Tumor protocols, and other pediatric oncology frameworks).

2) Risk Stratification

Risk Category	Typical Definitions	Implication of Follow-up
Standard Risk	Stage I-II: tumors, favourable histology, no high-risk features	Less frequent imaging and labs: primarily early detection of recurrence and routine late-effect monitoring
High Risk	Stage III-IV: diffuse anaplastic histology, unfavourable biology, nephrectomy & chemo, radiation exposure	More frequent and intensive surveillance for recurrence and therapy-related complications

3) Imaging Strategy

Purpose: detect relapse or treatment-related organ changes.

Modality >	Abdominal Ultrasound	Chest X-ray	Abdominal CT/ MRI	Renal Function Imaging (GFR, etc)
Standard Risk	Every 3-6 months (first 2yrs.)	Every 3-6 months (first 2 yrs.)	Only if abdominal U/S	Yearly or as indicated
High Risk	Every 3 months (first 2yrs.) then every 6 months (3-5yrs.)	Every 2-3 months (first 2yrs.)	Occasionally for high risk Or unclear US findings	More frequent (every 6-12 months)
Note	Kidney bed surveillance (avoid unnecessary radiation)	Monitoring lung metastases	Minimize radiation in children	Monitor remaining kidney function

4) Laboratory Monitoring

Purpose: monitor for recurrence, toxicity, or organ function.

Lab >	CBC	Chem Panel	Urine Test/ Protein	GFR/ Renal Function	Endochrine Hormones (LH, FSH, Test/ Est)	Other Tests
Standard Risk	Every 3-6 months (first 2yrs.)	Every 6-12 months	Annually	Yearly	As clinically indicated	PFT's, ECHO, thyroid as indicated
High Risk	Every 1-3 months (first yr. then space out)	Every 3-6 months	Every 6 months	Every 6-12 months	Annually or earlier if puberty abdominal	More frequent for higher risk
Note	Monitor marrow recovery chemo effects	Renal, liver & metabolic monitoring	Monitor kidney post-nephrectomy or chemo	High risk nephrotoxic therapy or bilateral nephrectomy	High risk abdominal/ pelvic radiation/ chemo affecting the gonads	Monitor late effects from chemo (anthracyclines, chest radiation)

5) Duration of Surveillance

Growth and deve lopment monitoring: weight, height, blood pressure; Psychosocial support: schooling, mental health; Vaccinations: keep up to date, especially if immunosuppressed; Family education: relapse symptoms, renal care, hypertension awareness.

6) Additional Considerations

- Growth and development monitoring: weight, height, blood pressure;
- Psychosocial support: schooling, mental health;
- Vaccinations: keep up to date, especially if immunosuppressed;
- Family education: relapse symptoms, renal care, hypertension awareness.

Summary of the Surveillance Process

Standard-risk:

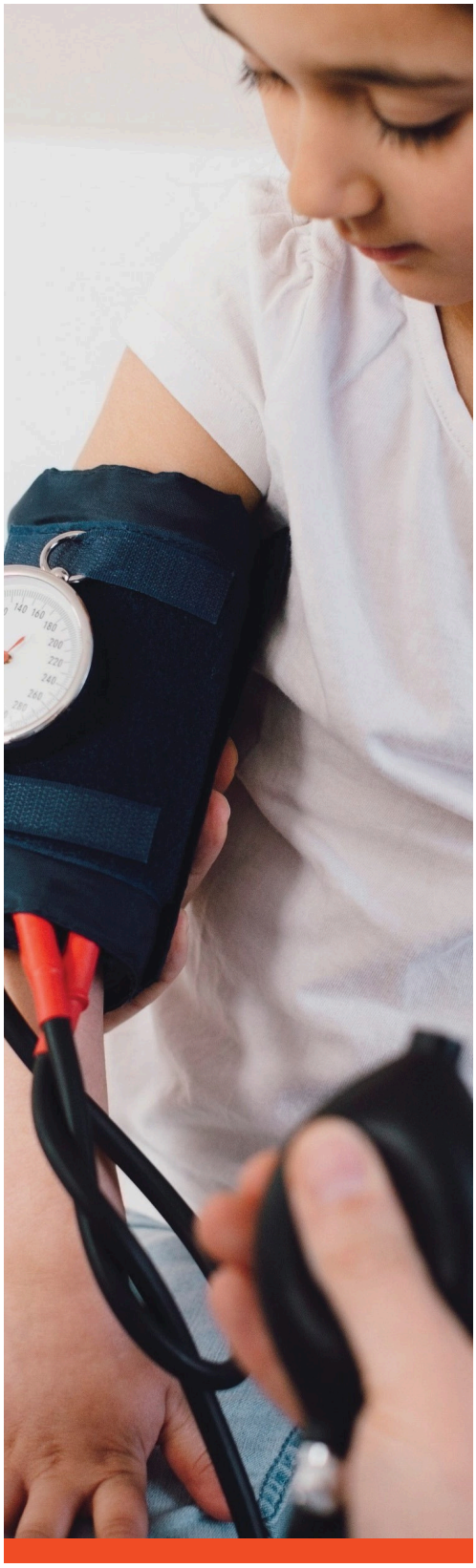
Moderate imaging (US, CXR), labs spaced out, focus on recurrence detection and basic late effects.

High-risk:

More frequent imaging, labs, and multi-system monitoring (renal, cardiac, pulmonary, endocrine), with the goal of early detection of relapse and prevention/management of therapy-related complications.

- Intensive phase: first 2–3years after diagnosis (highest relapse risk);
- Moderate phase: years 3–5;
- Long-term/ late-effect phase: years 5–10+ (depending on therapy).

High-risk patients usually remain under more frequent, longer follow-up.



Definitions

History and Physical (H&P)

In pediatric oncology follow-up guidelines, including Wilms tumor surveillance protocols H&P means History and Physical.

It refers to a clinical assessment conducted by a physician or qualified provider, and it is a standard component of all pediatric cancer survivorship and surveillance schedules.

Meaning of “H&P”

History (H):
A structured medical interview that reviews:

- New symptoms
- Changes in general health;
- Treatment-related late effects;
- Medication updates;
- Family concerns;
- Psychosocial or developmental issues.

Physical (P):
A hands-on physical examination tailored to child’s diagnosis including:

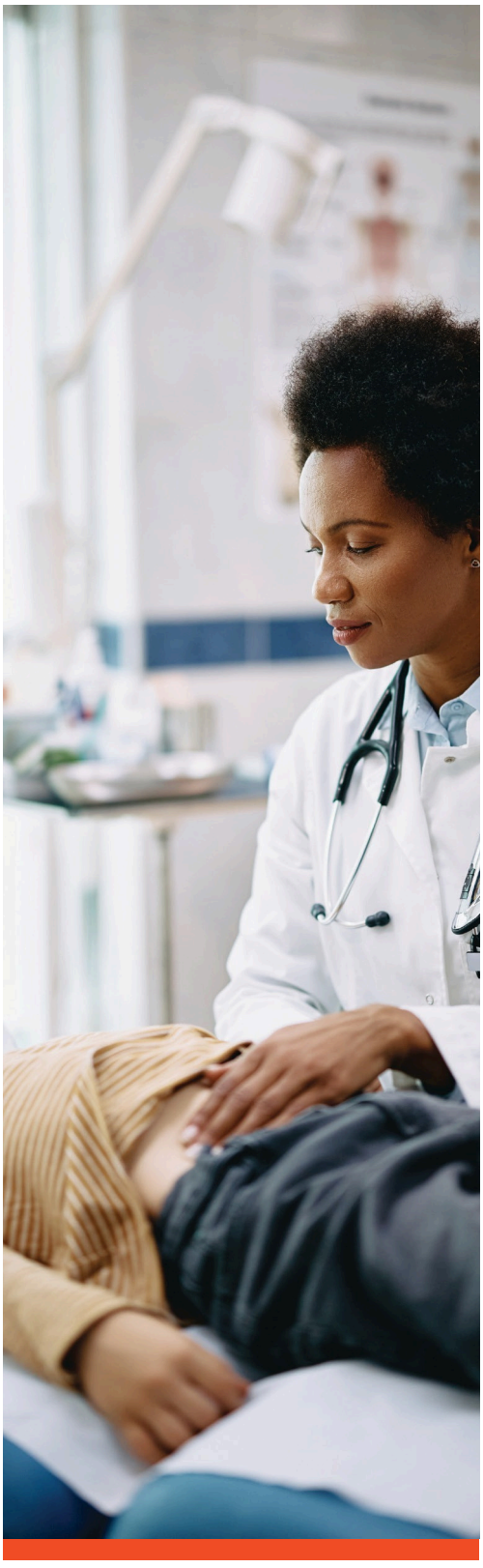
- Vital signs;
- Growth parameters;
- Abdominal exam (particularly important for renal tumors);
- Lymph nodes;
- Cardiopulmonary exam;
- Surgical site assessment (if nephrectomy was performed).

How H&P functions in surveillance schedules:

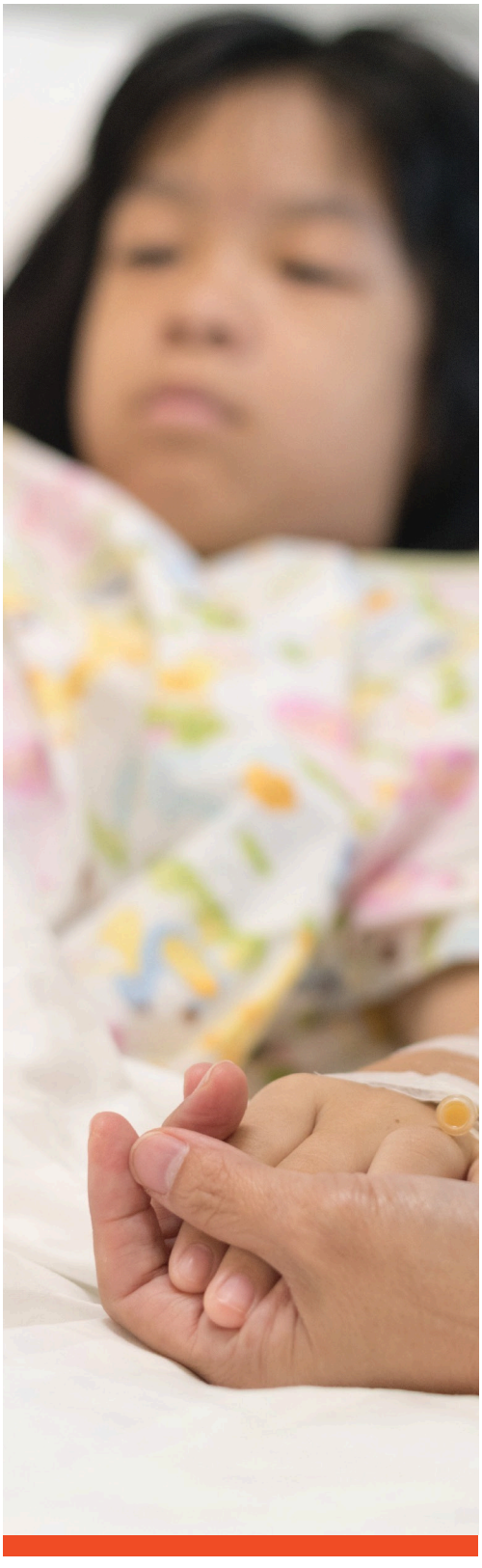
In standard-risk and high-risk pediatric cancer follow-up tables, “H&P” appears at specific time intervals (e.g., every 3 months, every 6 months, annually) and signals when the child must be seen in person for a clinical ev aluation, separate from imaging (e.g., ultrasound, CT scan, chest X-ray) and lab tests.

Examples from common pediatric oncology protocols:

- High-risk Wilms tumor: H&P every 3 months for the first 2 years, then less frequently;
- Standard-risk Wilms tumor: H&P every 3–4 months initially, then every 6–12 months after year 2;
- After 5 years: typically transitions to survivorship guidelines where H&P continues annually.



Metabolic (Metab)



In pediatric surveillance and follow-up guidelines, the classification “Metab” is shorthand for Metabolic. It is used to group or flag children who have (or are being monitored for) metabolic conditions or metabolic complications— either as their primary diagnosis or as a risk category requiring enhanced follow-up.

Meaning of “Metab” / Metab = Metabolic.

This refers to conditions involving the body’s biochemical processes:

- Inborn errors of metabolism (e.g., urea cycle disorders, fatty acid oxidation defects, amino acid disorders)
- Metabolic complications secondary to treatment (e.g., chemotherapy-related metabolic issues, endocrine/metabolic late effects)
- Nutritional metabolism problems (e.g., growth–nutrition metabolism concerns in oncology follow-up);
- Metabolic syndrome risk factors (in somelong-term follow-up protocols).

How “Metab” is used in risk stratification:

Standard-risk
Follow-up “Metab” usually indicates baseline screening for metabolic parameters (e.g., weight trajectory, glucose tolerance, lipid levels, thyroid/metabolic function if relevant to treatment).

High-risk
Follow-up “Metab” indicates child is at elevated risk for metabolic disorders or late effects and therefore requires enhanced surveillance, such as:

- More frequent endocrine/metabolic labs;
- Monitoring for therapy-related metabolic complications;
- Specialist metabolic/endocrine referral;
- Screening tied to specific treatments (e.g., steroids, radiation exposure, nephrectomy-related metabolic risk, etc.).

Why it appears as a short code:

Most pediatric follow-up frameworks (oncology, NICU, congenital disorders, chronic disease) use compact category codes like:

- Resp (respiratory)
- Neuro (neurological)
- Endo (endocrine)
- Metab (metabolic)
- Cardio, Renal, etc.

Metab is simply the standard abbreviation for the metabolic system/risks.

Complete Blood Count

- Growth and development monitoring: weight, height, blood pressure;
- Psychosocial support: schooling, mental health;
- Vaccinations: keep up to date, especially if immunosuppressed;
- Family education: relapse symptoms, renal care, hypertension awareness.

Meaning of “CBC” / CBC = Complete Blood Count.

Complete Blood Count is a blood test measuring:

- Hemoglobin / hematocrit;
- White blood cell count and differentials;
- Platelet count;
- Red blood cell indices (MCV, MCH, RDW, etc.).

Why CBC appears:
(in standard-risk vs. high-risk follow-up)

Guidelines commonly list which investigations are required based on risk category. “CBC” indicates that the child needs periodic complete blood count testing.

Standard-risk
In standard-risk follow-up “CBC” is usually required for routine monitoring, for example:

- Detecting anemia;
- Monitoring for treatment-related marrow suppression;
- Watching for infection risk or immune recovery.

Frequency is typically low unless otherwise indicated.

High-risk
In high-risk follow-up “CBC” is monitored more frequently because high-risk children may have:

- Elevated risk of cytopenias;
- Ongoing marrow suppression;
- Risk of relapse (in oncology cases);
- Medication-related hematologic toxicity.

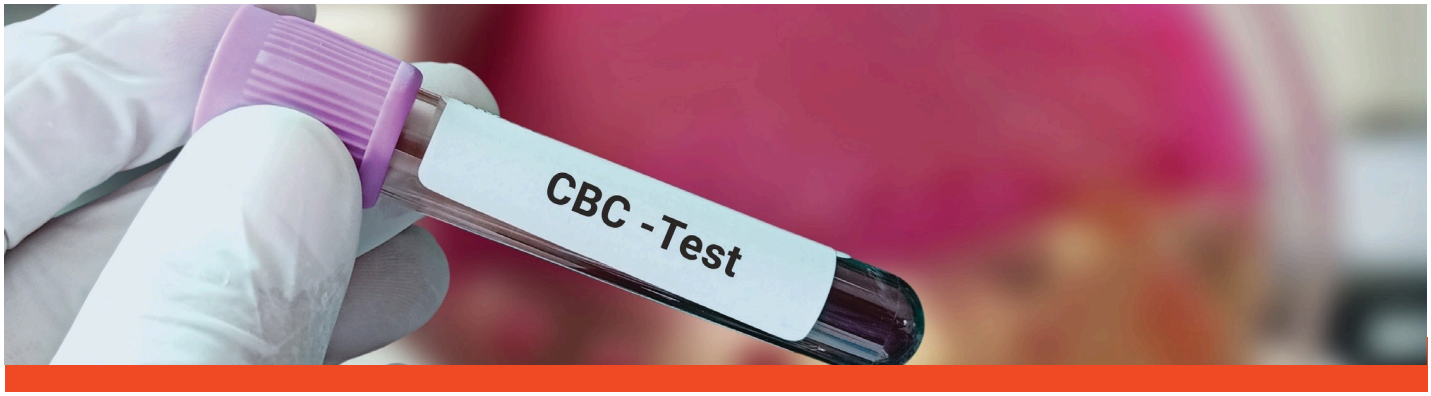
Chronic disease complications affecting blood counts. The guideline will specify the interval (e.g., every 1–3 months vs. every 6–12 months).

Why it is listed as a code:

In most pediatric survivorship or follow-up frameworks, test categories are abbreviated to save space:

- CBC;
- CMP (comprehensive metabolic panel);
- TSH / Free T4;
- UA (urinalysis);
- ECG;
- Echo.

“CBC” is simply the shorthand for the required blood count test.



Serum Chemistry Panel (Chem)

In pediatric surveillance and follow-up guidelines, the classification "Chem" refers to a serum chemistry panel (also called blood chemistries or metabolic panel).

Meaning of "Chem" Chem = Serum Chemistry Panel.

Depending on the guideline, this includes some or all of the following:

- Electrolytes (Na, K, Cl, CO_2);
- Renal markers (creatinine, BUN);
- Liver enzymes (ALT, AST, ALP, bilirubin);
- Glucose;
- Calcium, phosphate, magnesium.

Some programs label this as CHEM, CHEM7, CHEM10, or CMP.

Standard-risk (follow-up)

For standard-risk children a "Chem" panel is used to monitor

- Basic renal and liver function;
- Electrolyte balance;
- Treatment recovery (e.g., hydration, nutrition, organ function);
- Testing is usually less frequent.

High-risk (follow-up)

In high-risk children "Chem" panels are ordered more fre quently because these children may face:

- Greater risk of renal or hepatic impairment;
- Toxicity from medications or prior treatments;
- Electrolyte instability;
- Endocrine or metabolic complications;
- Late effects from chemotherapy, radiation, or intensive therapy.

The exact frequency is determined by the protocol (e.g., monthly, quarterly, or annually depending on risk category).

Why Chem appears in these tables:

Pediatric surveillance tables use compact codes (CBC, Chem, TSH, UA, Echo, etc.) to identify what tests must be completedat each interval. "Chem" is simply the shorthand for the standard chemistry panel.

Required Imaging Studies
(CXR & Abdo U/S)

In pediatric surveillance and follow-up guidelines, the classification “CXR & Abdo U/S” indicates required imaging studies. It is not a diagnosis or risk category. It tells clinicians which imaging tests must be performed for a child in either standard-risk or high-risk follow-up.

Meaning of “CXR & Abdo US” / CXR = Chest X-Ray

A radiographic image of the chest used to assess:

- Lungs (infection, nodules, metastasis, fluid);
- Heart size and mediastinum;
- Post-surgical or post-treatment changes.

Abdo U/S = Abdominal Ultrasound An ultrasound of the abdomen used to evaluate:

- Kidneys, liver, spleen, pancreas;
- Lymph nodes;
- Masses or lesions;
- Post-treatment organ changes;
- Fluid collections.

Why it appears in standard-risk vs. high-risk follow-up:

Pediatric follow-up frameworks (oncology, congenital disease, high-risk infant programs, etc.) specify which imaging tests each risk group requires and how often.

Standard-risk follow-up. A child in the standard-risk category may need:

- Periodic CXR to confirm normal lung status;
- Periodic abdominal ultrasound to ensure no organ complications or recurrence (e.g., renal tumor survivors, abdominal mass history);
- Frequency is usually annual or “as indicated”.

High-risk follow-up High-risk children require more frequent or more detailed imaging because they may have:

- Higher risk of recurrence or metastasis;
- Higher likelihood of organ injury (renal, hepatic, pulmonary);
- History of extensive treatment (e.g., abdominal surgery, treatment (e.g., abdominal surgery, nephrectomy, radiation, chemotherapy);
- Greater vulnerability to late complications.

These protocols might require imaging every 3–6 months, depending on the condition.

Why it is listed as a short code

Surveillance tables are usually compressed and list grouped tests, such as:

- CBC;
- Chem;
- CXR & Abdo U/S;
- Echo;
- TSH; Renal U/S.

“CXR & Abdo U/S” simply indcates that both imaging modalities are part of the required surveillance package at that interval.

Urine Tests

In pediatric surveillance and follow-up guidelines, the classification "Urine Tests" required urinalysis based investigations used to monitor renal function, metabolic status, and treatment-related complications. It is a test category, not a diagnosis or risk tier.

Meaning of "Urine Tests" / Urine Tests = Urinalysis.

"Urine Tests" generally include one or more of the following depending on the guideline:

Standard Urinalysis (UA):

- Dipstick for protein, blood, glucose, ketones, leukocytes, nitrites;
- Microscopy for RBCs, WBCs, casts;
- Specific gravity (hydration status).

Urine Protein Tests:

Often ordered when monitoring kidney function or chemotherapy effects:

- Urine protei-to-creatine ration;
- Microalbumin.

Urine Chemistry Panels:

Used in metabolic or oncology surveillance:

- Calcium;
- Oxalate;
- Catecholamines (in some tumor protocols-optional).

Urine Culture:

If infection risk is part of surveillance different programs specify exactly which urine tests are required, but the umbrella label "Urine Tests" covers all urinalysis-type investigations.

How UrineTestsfunctioninstandard-riskvs.high- risk follow-up :

Standard-risk

"Urine Tests" monitor

- Basic renal health;
- Hydration;
- Presence of protein or blood;
- Early signs of complications.

Testing frequency tends to be low (e.g., yearly or semi-annual).

High-risk

High-risk children undergo urine tests more often because they may have:

- Greater risk of kidney impairment;
- Previous nephrectomy or renal tumor;
- Exposure to nephrotoxic treatments;
- Higher chance of hypertension-related kidney issues;
- Metabolic or endocrine complications affecting renal function.

Guidelines may recommend urine testing every 3–6 months or aligned with imaging cycles.

Why Urine Tests appear as a line item

Surveillance tables condense categories for efficiency. You'll typically see a list like:

- CBC;
- Chem;
- Urine Tests;
- CXR & Abdo U/S;
- Renal U/S;
- Echo.

"Urine Tests" is simply the collective shorthand for all required urinalysis-type investigations for that risk category.

Glomerular Filtration Rate

In pediatric surveillance and follow-up guidelines, the classification “GFR” refers to Glomerular Filtration Rate, a key measure of kidney function. It is a test requirement, not a diagnosis or risk category.

Meaning of “GFR” / GFR = Glomerular Filtration Rate

It estimates how well the kidneys are filtering blood. In children, “GFR” is usually calculated, not measured.

Most guidelines use:

- eGFR (estimated GFR);
- Calculated from serum creatinine, age, sex, and height
- Typically using formulas like the Schwartz equation.

In certain oncology or nephrology follow-up programs, a measured “GFR” (e.g., nuclear medicine “GFR”) may be required for high-risk patients.

Why GFR appears in standard-risk vs. high-risk follow-up:

Standard-risk:

“GFR” is monitored to ensure:

- Normal kidney recovery after treatment;
- No early signs of renal impairment;
- Stability of creatinine and filtration capacity.

Frequency is typically annual unless otherwise indicated.

High-risk

Children may require more frequent or more rigorous GFR higher assessments because they have susceptibility to:

- Chronic kidney disease (CKD);
- Nephrectomy-related reduced renal reserve;
- Prior exposure to nephrotoxic chemotherapy (e.g., cisplatin, ifosfamide);
- Radiation affecting the abdomen or spine-related renal decline;
- Congenital or acquired renal abnormalities.

Note: High-risk guidelines may require

- “GFR” every 3–6 months;
- Nuclear medicine GFR if precision is needed;
- Parallel urine tests, electrolytes, and renal ultrasound.

Why GFR is listed as a separate item:

Surveillance tables often list grouped investigations like:

- CBC;
- Chem (chemistry panel);
- GFR;
- Urine Tests;
- Renal U/S;
- CXR & Abdo U/S.

“GFR” is singled out because kidney filtration status is a standalone predictor of long-term outcomes in many pediatric conditions.

Echocardiogram (ECHO)

In pediatric surveillance and follow-up guidelines, the classification “ECHO4” refers to an echocardiogram (ECHO) performed according to a Level-4 cardiac risk category. It is a test level, not a diagnosis.

It appears in oncology survivorship, congenital care, and high-risk pediatric protocols that stratify cardiac surveillance based on exposure to cardiotoxic treatments.

Meaning of ECHO4
ECHO4 = Echocardiogram required for a child in Cardiac Risk Level 4.

Different guidelines label cardiac surveillance as:

- ECHO1 (lowest-risk schedule);
- ECHO2;
- ECHO3;
- ECHO4 (highest-risk schedule).
-

So “ECHO4” does NOT mean a different type of echocardiogram—it means the frequency and intensity of follow-up required for a child whose cardiac risk is classified as Level 4.

What qualifies as Cardiac Risk Level 4:

Although the specifics vary by program, Level-4 usually includes children who have had significant exposure to cardiotoxic treatments, such as:

- High cumulative doses of anthracyclines (e.g., doxorubicin, daunorubicin);
- Chest radiation involving the heart;
- Combined anthracyclines + chest radiation;
- Known cardiac impairment after treatment;
- Certain congenital or metabolic conditions with elevated cardiac risk.

These children have the highest long-term risk of cardiomyopathy, arrhythmias, or heart failure, so they are placed on the most intensive surveillance schedule.

What ECHO4 typically requires:

While programs differ, “ECHO4” generally means:

- Echocardiogram every 6–12 months, sometimes more frequently if abnormalities exist;
- May include cardiac biomarkers (BNP, Troponin);
- May require cardiology consultation or co-follow-up;
- Additional imaging if concerns arise (cardiac MRI,strain imaging).

By contrast:

- ECHO1 might be every 5 years;
- ECHO2 every 2–3 years;
- ECHO3 annually;
- ECHO4 semi-annually or annually.

Why it appears in the table Surveillance tables compress test requirements into shorthand codes:

- CBC;
- Chem;
- GFR;
- Urine Tests;
- ECHO4;
- ECG;
- CXR & Abdo U/S.

“ECHO4" tells clinicians which echocardiography frequency aligns with the child’s cardiac-risk tier.

Pulmonary Function Tests (PFT's)

Inpediatric surveillance and follow-up guidelines, the classification "PFT's" stands for Pulmonary Function Tests. These are standardized breathing tests used to evaluate lung capacity, airflow, and respiratory health. It is a testing requirement, not a diagnosis or risk level.

Meaning of PFT's PFT's = Pulmonary Function Tests

These test typically include:

Spirometry

This specifically measures and assesses:

- FEV1 (forced expiratory volume);
- FVC (forced vital capacity);
- Flow rates;
- Used to detect obstructive or restrictive patterns.

Lung Volumes

Measuring and assessing total lung capacity and residual volume.

Diffusion Capacity (DLCO)

Measures how well gases move from lungs into the bloodstream. Often required for higher-risk children (e.g., those with chest radiation or certain chemo exposures). Depending on the guideline, "PFT's" may include any combination of the above.

Why PFT's appear in standard-risk vs. high- risk guidelines

Standard-risk:

Specifically used to:

- Confirm normal lung development after treatment;
- Screen for mild or early respiratory issues;
- Monitor recovery following surgery, infection, or moderate therapies;
-

Frequency is usually every 1–2 years, or "as indicated".

High-risk:

High-risk children undergo more frequent or comprehensive "PFT's" because they may have been exposed to factors that can damage lungs, such as:

- Chest radiation;
- Chemotherapy agents toxic to lungs (e.g., bleomycin); Major abdominal or thoracic surgery;
- Long-term ventilation or neonatal lung injury;
- Chronic medical conditions affecting breathing.

High-risk protocols often require:

- Full "PFT's" (spirometry + lung volumes + DLCO);
- At intervals of 6–12 months depending on risk category.

Why PFT's are listed as a code in surveillance tables

Pediatric follow-up frameworks often abbreviate required tests to fit into a table format, for example:

- CBC;
- Chem;
- GFR;
- PFT's;
- ECHO;
- CXR;
- Renal U/S.

"PFT's" simply indicates that pulmonary function testing must be done at the specified interval for that risk category.

Endocrine (hormonal) Blood Tests (LH, FSH, Test or Est)

In pediatric surveillance and follow-up guidelines, the classification "LH, FSH, Test or Est" refers to endocrine (hormonal) blood tests used to monitor pubertal development, gonadal function, and long-term effects of medical treatment. It is a testing category, not a diagnosis.

Meaning of Each Component:

LH - Luteinizing Hormone
A pituitary hormone that regulates puberty and reproductive gland function.

FSH - Follicle-Stimulating Hormone

Another pituitary hormone that controls maturation of the ovaries or testes.

Test - Testosterone
A sex hormone measured to evaluate:

- Puberty progression;
- Gonadal function;
- Treatment-related hormonal impairment.

These tests are typically bundled because they work together to give a full picture of pubertal and gonadal endocrine health.

Why these appear in standard-risk vs. high-risk pediatric follow-up:

Standard-risk (follow-up)

Hormone tests may be ordered:

- To ensure normal pubertal timing;
- If there are early signs of hormonal imbalance;
- To monitor for mild effects of certain medications or treatments

Testing frequency is low (periodic or "as clinically indicated").

High-risk (follow-up)
High-risk children require closer endocrine surveillance, especially those who have had:

- Chemotherapy that affects reproductive glands;
- Radiation involving the brain (pituitary) or abdomen;
- Chronic illnesses impacting growth/puberty;
- Known endocrine complications.

High-risk protocols may require:

LH, FSH, Testosterone/Estradiol annually; Earlier and more frequent testing if symptoms arise; Endocrinology referral if abnormalities are detected.

These tests help detect:

- Delayed puberty;
- Early puberty;
- Reduced hormone production;
- Long-term reproductive endocrine effects.

Why it appears as a combined code;

Follow-up tables often list abbreviated test groups:

- CBC;
- Chem;
- GFR;
- Thyro id tests;
- LH, FSH, Test or Est;
- PFT's;
- ECHO.
-

This shorthand indicates the pubertal and reproductive hormone panel needed at the specified interval.

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