Wilms Cancer Foundation

Wilms Tumor

Wilms Tumor Relapse

Factors, Treatment Options & Long-term Care

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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Factors, Treatment Options & Long-term Care (icludes Wilms Tumour stage I and II with unfavourable histology)

Section I

Why Relapses Occur:

Wilms tumor relapse occurs when kidney cancer returns after a child has completed treatment and achieved remission.

Relapses of Wilms tumor occur because, despite initial treatment, some cancer cells can survive and remain hidden in the body. These residual cells may be resistant to chemotherapy or radiation, or they may be located in areas that are difficult to fully treat, such as the lungs or surrounding abdominal tissues.

Tumor biology also plays a role: certain genetic changes or anaplastic histology make cancer cells more aggressive and more likely to regrow. Additionally, incomplete removal of the tumor during surgery or interruptions in therapy can increase the chance that microscopic disease persists.

Essentially, relapse happens when surviving cancer cells begin to multiply again, overcoming the defenses of previous treatments, which is why careful follow-up and early detection are critical in managing pediatric Wilms tumor.

Pediatric Renal Cancer Relapse (Wilms Tumor):

Relapse means the cancer comes back after it was previously treated and went into remission (no detectable cancer).

Relapse can happen:

- In the original kidney area;
- In the lungs (most common site);
- In the abdomen;
- Less commonly in bones, liver, or brain.

Section II

When Relapses Occur:

Most relapses happen within the first two years after therapy ends, although the risk decreases significantly over time and becomes much lower after five years. The cancer most commonly returns in the lungs, abdomen, or original kidney area, and it is often detected through routine follow-up imaging before symptoms appear.

Relapses during the first two years after a child completes treatment, is considered the highest-risk period for recurrence.

During this time, children are usually monitored closely with regular imaging and medical follow-up because many relapses are detected before symptoms develop.

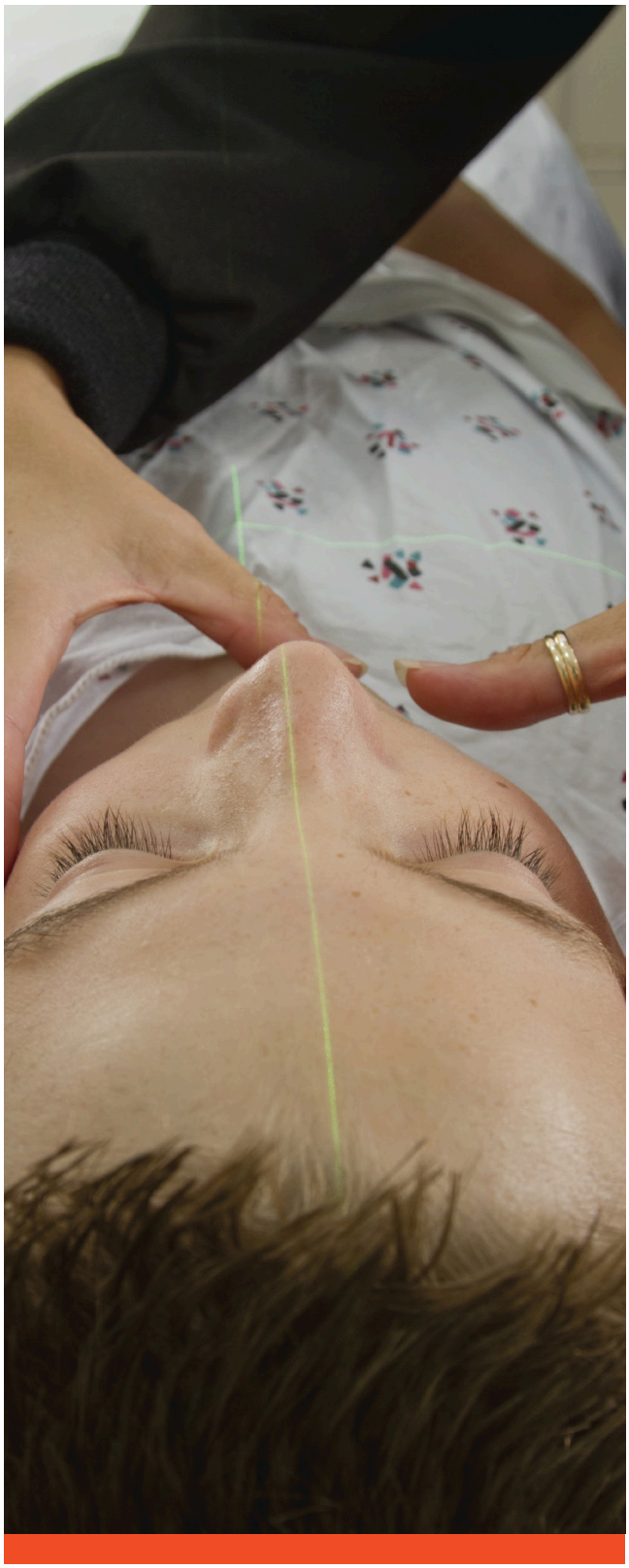
The likelihood of relapse generally decreases after the second year and drops significantly after five years, although late relapses can occasionally occur. The timing of relapse can also provide important information about prognosis, as earlier relapses are often associated with a higher-risk disease and may require more intensive treatment, while later relapses may sometimes be easier to manage.

The timing varies depending on factors such as tumor biology, stage at diagnosis, and how well the cancer responded to the original treatment.

When Relapses Occur:

Most relapses occur:

- Within 2 years after treatment ends;
- Risk drops significantly after 5 years;
- Late relapses can occur but are uncommon.



Section III

Factors Affecting Relapse Risk:

Risk ofr elapse depends on factors such as the tumor stage at diagnosis, tumor biology (including whether the histology is favorable or anaplastic), and how well the tumor responded to initial treatment.

Relapse probability in Wilms tumor depends on a combination of tumor characteristics, treatment response, and time since therapy was completed. One of the most important factors is tumor histology, with favorable histology generally having a lower relapse risk and anaplastic (unfavorable) histology having a higher risk.

The stage of the cancer at diagnosis also plays a major role, as tumors that had already spread beyond the kidney typically carry a greater chance of recurrence.

How well the tumor responded to initial chemotherapy and surgery is another key predictor, since tumors that shrink quickly and are fully removed tend to have better outcomes.

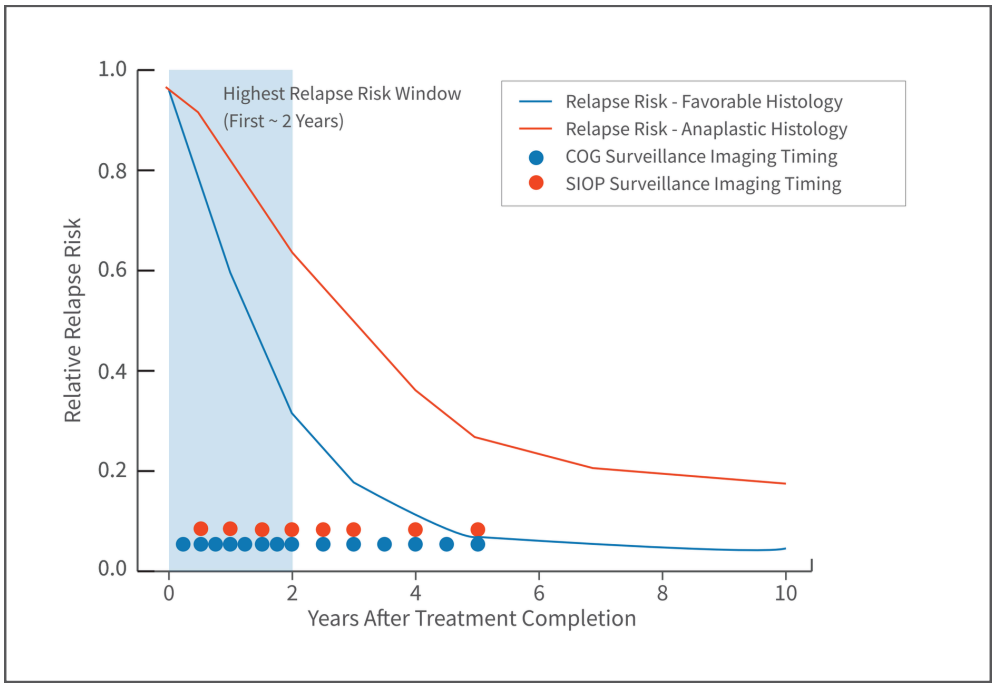
Certain genetic and molecular features within the tumor can further influence relapse risk.

Timing is also significant, because the likelihood of relapse is highest during the first two years after treatment and decreases substantially over time, particularly after five years.

Additionally, factors such as whether treatment was completed as planned and the presence of residual disease after surgery can influence the overall probability of relapse.

Risk Factors for Relapse

Doctors estimate relapse risk based on several features.



Tumor Biology:

There is a higher risk if the tumor had:

- Unfavorable histology (anaplastic Wilms tumor);
- Certain genetic markers (example: loss of heterozygosity at chromosomes 1p or 16q).

Stage at Diagnosis:

Higher stages generally have higher relapse risk:

Stages	Relapse Risk Trend
Stage I	Low
Stage II	Low-Moderate
Stage III	Moderate
Stage IV	Higher
Stage V (both kidneys)	Variable

Factors Affecting Relapse Risk:

Response to Treatment Higher relapse risk if:

- Tumor responded slowly to chemotherapy;
- Residual tumor remained after surgery;
- Treatment was shortened or interrupted.

Signs of Possible Relapse:

Symptoms vary depending on location.

Lung Relapse (Most Common):

- Persistent cough;
- Shortness of breath;
- Chest pain;
- Often found on routine imaging before symptoms.

Abdominal Relapse:

- Belly swelling or lump;
- Pain;
- Vomiting;
- Weight loss.

General Symptoms:

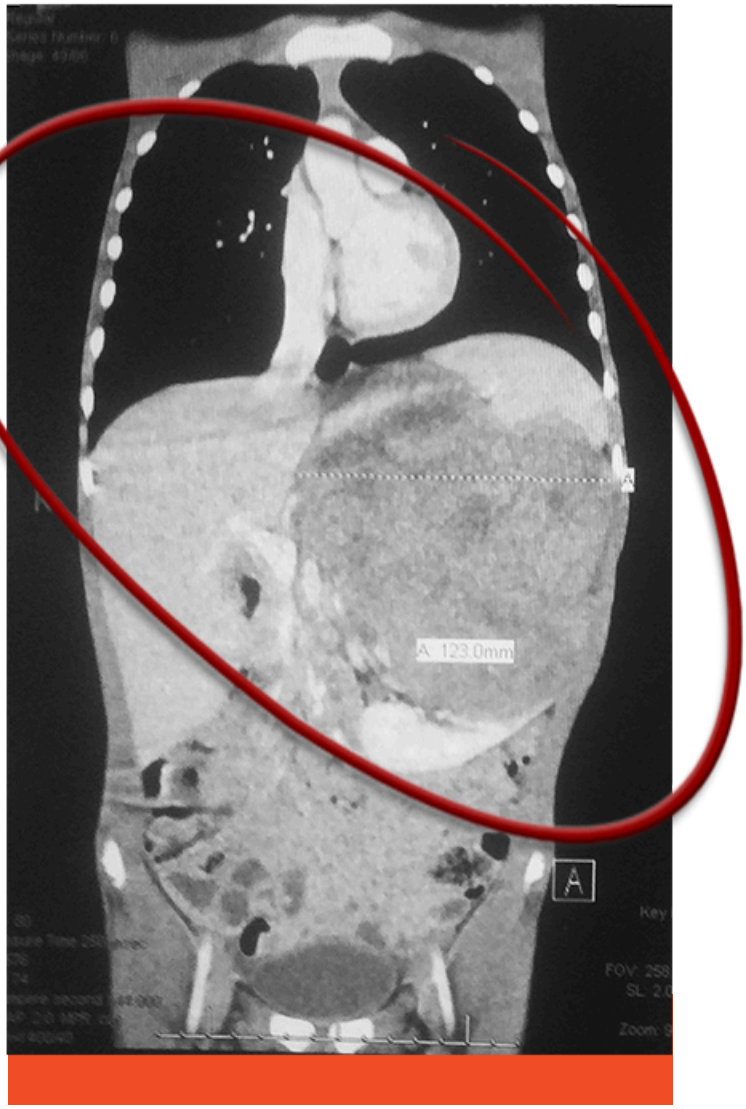
- Fatigue;
- Fever;
- Loss of appetite.

How Relapse Is Detected:

Most relapses are found through scheduled follow-up scans, not symptoms. Typical surveillance includes:

- Chest X-rays or CT scans;
- Abdominal ultrasound or CT/MRI;
- Physical exams;
- Blood and urine tests.

Follow-up is usually most intense during the first 2–3 years after treatment.



Section IV

Treatment Options for Relapse:

Although relapsecanbe frightening, many children can still be successfully treated with additional chemotherapy, surgery, radiation, or specialized therapies.

Treatment options after a relapse of Wilms tumor depend on where the cancer has returned, how long it has been since the original treatment, and what therapies were previously used.

Management usually involves a combination of treatments aimed at achieving another remission.

Chemotherapy is typically the main component and often includes different or more intensive drug combinations than those used initially. Surgery may be performed to remove recurrent tumors when possible, especially if the relapse is localized.

Radiation therapy is often considered, particularly if it was not used during the original treatment or if the relaps occurs in an area that can be safely targeted. In some higher-risk or repeated relapse cases, doctors may recommend high-dose chemotherapy followed by stem cell support to help restore bone marrow function.

Treatment plans are usually individualized and guided by specialized pediatric oncology teams, and while relapse can be serious, many children can still achieve long-term survival with modern therapies.

Treatment After Relapse:

Relapsed Wilms tumor is often still treatable. Treatment depends on:

- Where relapse occurs
- How long after treatment relapse happened
- Previous treatments received
- Tumor biology

Common Treatment Options:

Chemotherapy: Often stronger or different drugs than initial therapy.

Examples:

- Ifosfamide;
- Carboplatin;
- Etoposide;
- Cyclophosphamide;
- Doxorubicin (if not already maximized).

Surgery: Doctors may remove recurrent tumors if possible.

Radiation Therapy: Often used if not previously given or targeted to relapse areas.

Stem Cell / High-Dose Chemotherapy: Used in some higher-risk or repeated relapse situations.

Section V

Long-term Follow-up Care:

Long-term follow-up is important not only to monitor for relapse but also to watch for treatment-related effects on heart health, kidney function, growth, fertility, and overall survivorship.

Long-term relapse monitoring for children treated for Wilms tumor is an essential part of survivorship care, designed to detect recurrence early and manage late effects of therapy.

Monitoring typically involves a structured schedule of follow-up visits, which include physical examinations, blood and urine tests, and imaging studies such as chest X-rays, abdominal ultrasounds, or CT/MRI scans. In the first two years after treatment—the period of highest relapse risk these assessments are more frequent, often every 2–3 months.

As time progresses and the child remains cancer-free, the interval between visits gradually lengthens, but periodic surveillance usually continues for at least five years and sometimes longer.

In addition to relapse detection, long-term monitoring also addresses potential late effects of treatment, including kidney function, heart health, growth and development, fertility, and secondary cancers.

This structured approach helps families & clinicians identify issues early, provide timely interventions, & support the child's overall long-term health & quality of life.

Prognosis After Relapse:

Outcomes vary widely with approximate survival ranges (general research averages):

- Favorable histology lung relapse: ~70–80% survival;
- Abdominal relapse: ~40–60%;
- Early relapse (<12 months): Lower survival;
- Multiple relapse: More challenging but still sometimes curable.

Long-Term Survivorship Considerations:

Children who relapse may face:

- Increased risk of late treatment effects
- Heart monitoring (if anthracycline chemotherapy used)
- Kidney function monitoring
- Fertility considerations
- Secondary cancer monitoring

Important Reassurance:

Even when relapse occurs:

- Many can still be cured;
- Treatment approaches have improved significantly over time.

Typical Follow-Up Schedule (General:)

Example pattern used in many pediatric oncology programs:

Year Post-Treatment	Evaluation Schedule
0-2yrs.	Imaging every 3 months
3-5yrs.	Imaging every 4-6 months
After 5yrs.	Imaging every 12 months
Survivorship monitoring continues but relapse risk much lower	

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