# Medications in Nephrotic Syndrome: Cyclophosphamide

# When do we use cyclophosphamide?

In children who
may not get better with steroids,
have repeated relapses, or
have side effects to steroids

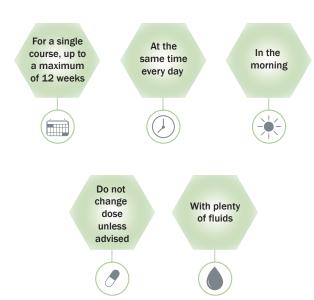
# Cyclophosphamide may reduce relapses

1 in 3

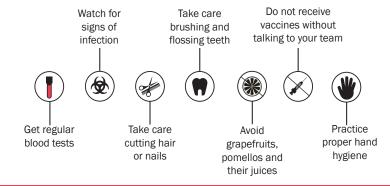
children will have no further relapses after taking a single course of cyclophosphamide

It may take several weeks to see a difference in your (your child's) condition.

# How is cyclophosphamide taken?



# **Precautions on cyclophosphamide**





If a fever ≥ 38.5°C develops, stop taking and call the healthcare team as soon as possible



If you (your child) throw(s) up repeatedly, call the healthcare team



- If you (your child) miss(es) a dose, take it as soon as you remember
- If it is time for the next dose, skip the missed dose
   Never take two doses to make up for a missed dose

#### **Side effects**

#### **COMMON SIDE EFFECTS**









Headache Low White Blood Cells

## **Seek medical care for any of these symptoms:**

Painful urination/bloody urine

Fever ≥ 38.5°C

Prevent by drinking plenty of fluids and urinating regularly

The following side effects are very rare when given orally for nephrotic syndrome. They include risk of infections, bladder inflammation, certain cancers, and infertility.







## Incidence and outcomes of nephrotic syndrome

INSIGHT Publication: Ethnic Differences in Incidence and Outcomes of Childhood Nephrotic Syndrome http://cjasn.asnjournals.org/content/11/10/1760.short

# How cyclophosphamide works

National Institute of Diabetes & Digestive & Kidney Diseases (NIDDK): How is childhood nephrotic syndrome treated? https://www.niddk.nih.gov/health-information/kidney-disease/children/childhood-nephrotic-syndrome

The Kidney Foundation of Canada: *Childhood nephrotic syndrome - Other treatment* https://www.kidney.ca/document.doc?id=330

Mayo Clinic: Nephrotic syndrome - Treatment: Immune system-suppressing medications
https://www.mayoclinic.org/diseases-conditions/nephrotic-syndrome/diagnosis-treatment/drc-20375613

The Royal Children's Hospital Melbourne: What is cyclophosphamide? https://www.rch.org.au/uploadedFiles/Main/Content/clinical-guide/130561%20SCOTT%20Nephotic%20Syndrome%20booklet%20A5 LR.pdf

# How to give cyclophosphamide

AboutKidsHealth (SickKids): *How should you give your child cyclophosphamide?* http://www.aboutkidshealth.ca/En/HealthAZ/Drugs/Pages/Cyclophosphamide-For-Nephrotic-Syndrome.aspx

**NephCure Kidney International:** *How is cyclophosphamide administered?* https://nephcure.org/livingwithkidneydisease/treatment-options/cyclophosphamide-cytoxan/

#### **Side effects**

NephCure Kidney International: What are the possible side effects of cyclophosphamide? https://nephcure.org/livingwithkidneydisease/treatment-options/cyclophosphamide-cytoxan/

AboutKidsHealth (SickKids): What are the possible side effects of cyclophosphamide? http://www.aboutkidshealth.ca/En/HealthAZ/Drugs/Pages/Cyclophosphamide-For-Nephrotic-Syndrome.aspx

Royal College of Paediatrics and Child Health: Cyclophosphamide for Nephrotic Syndrome - Are there any possible side effects?

https://www.medicinesforchildren.org.uk/cyclophosphamide-nephrotic-syndrome-0