

About the Khoo Teck Puat – National University Children’s Medical Institute (KTP-NUCMI)

The KTP-NUCMI is the paediatric arm of the National University Hospital and comprises the Departments of Paediatrics, Paediatric Surgery and Neonatology. We provide comprehensive and specialised medical and surgical services for newborns, children and adolescents, and are the only public hospital in Singapore that offers paediatric kidney and liver transplant programmes. Through a generous gift from the Estate of Khoo Teck Puat, we have set up an integrated outpatient facility with medical, diagnostic and rehabilitation services.

For more information about us, visit www.nuh.com.sg/nuhkids.

Contact Us

24-hour Children’s Emergency

Location: NUH Main Building, Zone F, Level 1

General Enquiry: +65 6772 2555

KTP-NUCMI

Location: NUH Main Building, Zone E, Level 2

(Accessible via Kent Ridge Wing, Zone C, Level 2, Lift Lobby C)

Operating Hours: 8.30am – 5.30pm (Mon to Fri), 8.30am – 12.30pm (Sat)

General Enquiry: +65 6772 5736

Appointment Line: +65 6772 2002

Fax: +65 6776 2102

Email: ktpnucmi_appt@nuhs.edu.sg

9a Viva-University Children’s Cancer Centre

Location: NUH Medical Centre, Zone B, Level 9

Operating Hours: 8.30am – 5.30pm (Mon to Fri)

Appointment Line: +65 6772 5030

Fax: +65 6872 4314

Email: cbccappt@nuhs.edu.sg

NUH Children’s Urgent Care Clinic @ Bukit Panjang

Location: Junction 10, 1 Woodlands Road, #01-22, Singapore 677899

Operating Hours: 9am – 11pm daily (including public holidays)

General Enquiry: +65 6219 1538

Email: childrenucc@nuhs.edu.sg

Website: www.nuh.com.sg/ucc

NUH Child Development Unit @ JMC

Location: Jurong Medical Centre, 60 Jurong West Central 3, Level 2, Singapore 648346

Operating Hours: 8.30am – 5.30pm (Mon to Fri)

Appointment Line: +65 6665 2530/2531

Fax: +65 6665 0158

Email: cdu@nuhs.edu.sg

Website: www.nuh.com.sg/cdu

NUH Child Development Unit @ Keat Hong

Location: Keat Hong Community Club, 2 Choa Chu Kang Loop, #03-01, Singapore 689687

Operating Hours: 8.30am – 5.30pm (Mon to Fri)

Appointment Line: +65 6769 4537/4637

Fax: +65 6665 0158

Email: cdu@nuhs.edu.sg

Website: www.nuh.com.sg/cdu

National University Hospital

Location: 5 Lower Kent Ridge Road, Singapore 119074

Tel: +65 6779 5555

Email: NUH_enquiries@nuhs.edu.sg

Website: www.nuh.com.sg



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Information is correct at the time of printing (Sep 2021) and subject to revision without prior notice.



How to Care for Students with Kidney Failure



Khoo Teck Puat – National University Children’s Medical Institute

Introduction to kidney failure

Kidney failure occurs when both kidneys do not function normally and it can occur in both children and adolescents. This can be due to birth defects, genetic abnormalities, infections or immune diseases.

A child with kidney failure may have high blood pressure, low blood count (anaemia), weak bones or other medical conditions. While some patients are able to pass urine, most may have difficulties doing so.

At the onset of kidney failure, the child will require dialysis (peritoneal dialysis or haemodialysis) or a kidney transplant.

What is peritoneal dialysis?

Peritoneal dialysis (PD) is a daily treatment for kidney failure that is done at home.

How does PD work?

The child is connected to a dialysis machine which infuses fluids into the abdomen via the dialysis tube. The tube is usually tucked into a pouch beneath the shirt. The entire process lasts between 10 to 12 hours daily. This is usually done at night when the child is asleep.



What should the school take note of or do?

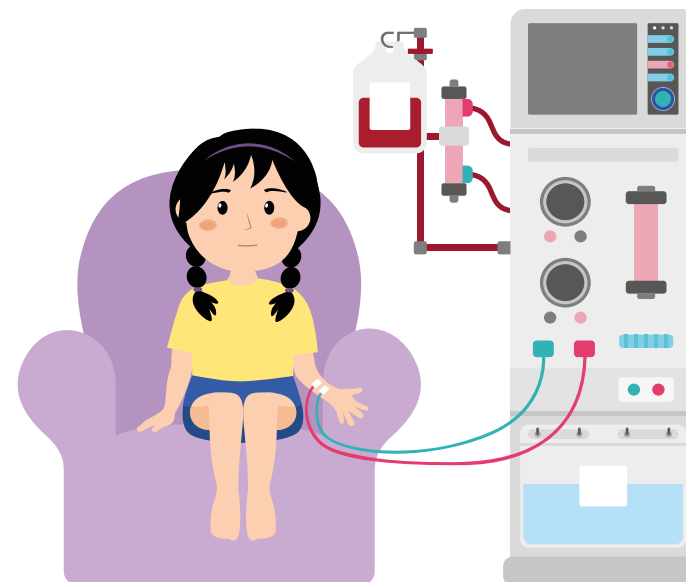
- The dialysis tube should be kept clean and dry. It should not be left dangling or exposed.
- If the child would like to participate in activities where he or she may get wet, special arrangements may be made in advance with the medical team.
- Consider flexibility in school reporting or dismissal times due to the extended duration of dialysis.

What is haemodialysis?

Haemodialysis (HD) is a treatment for kidney failure that takes place in a dialysis centre (Children's Kidney Centre here in NUH or a dialysis centre in the community).

How does HD work?

The process is done via a tube in the child's neck or upper chest. Some children will have a fistula or graft created surgically under their skin in the arms. The child usually undergoes a 4-hour dialysis session 3 times a week (on Mondays, Wednesdays and Fridays) either in the morning (8am to noon) or afternoon (1pm to 5pm). Some patients may require dialysis more frequently, up to 5 times a week.



What should the school take note of or do?

- The dialysis tube should be kept clean and dry.
- The child will need to reschedule or arrange appointments with the dialysis centre at least 2 weeks in advance to accommodate examinations which occur on dialysis days.
- Consider flexibility in school reporting or dismissal times due to the extended duration of dialysis.

What is kidney transplant?

It is the process where a patient receives a new kidney, either from a deceased or living donor, in a major operation.

Most kidney failure patients are put on an organ transplantation waiting list while on dialysis. Once the patient receives a transplant, he or she will be required to:

- Take medications for life to prevent rejection or loss of the transplanted kidney.
- Strictly adhere to daily fluid requirements (e.g. 3 litres of fluids a day).
- Undergo regular blood and urine tests at the hospital.

What should the school take note of or do?

- Due to lower immunity, the transplant patient may be at higher risk of severe infections. Help the child minimise contact with students who are having a cough, cold, flu or any other infection, e.g. have the child and the student who is having a cold sit at two ends of the classroom. If there are any cases of chicken pox within the classroom, please inform the child's parents immediately.
- Allow the child to consume water and access the toilet regularly as he or she may have a high fluid requirement.
- The child should maintain good hand hygiene, e.g. regular hand washing especially before eating and after going to the bathroom.
- The child should avoid raw or undercooked food such as salads, half boiled eggs or unpasteurised yoghurt.
- The child should choose well-cooked food and food that has been left out at room temperature for more than 2 hours.



What is urine catheterisation?

Some patients with kidney failure have to pass urine in a special way. A tube may be inserted into their bladder via a surgically-created hole near the belly button called a 'mitrofanoff' to drain the urine. Regular draining of the urine every 2 to 3 hours is important to prevent urinary tract infections.

What should the school take note of or do?

- Allow the child to consume water and access the toilet regularly as he or she may have a high fluid requirement.
- Allow the child to use a clean and private toilet (e.g. staff toilet) for urine catheterisation to minimise the risk of urinary tract infections.

Living with kidney failure

Living with kidney failure can be challenging for children and adolescents. They will need to deal with medications, dietary or fluid restrictions, dialysis regimes, medical appointments, multiple surgeries, altered appearance and prolonged absence from school. They often feel that things are not within their control. However, they can learn to adjust very well and ultimately lead meaningful and fulfilling lives with good support from their family, medical team, teachers and friends.

Medications, diet and fluids

A child with kidney failure often has to take multiple medications (up to 15 different kinds) at specific times. Some of these medications may need to be taken during meals such as at recess. You may wish to discuss with the child if he or she would like to have privacy to take the medications.

He or she may also have dietary and fluid restrictions. These include consuming well-cooked food or food that are low in potassium or phosphate. Some patients can consume as little as 500ml of fluid or as much as 5 litres per day.



Education

Long or frequent hospitalisations can cause the child to be absent from school for prolonged or intermittent periods of time. The child may be worried and stressed about catching up academically and adjusting back to school life. Changes such as having to retain a year or switching classes can also be disruptive. Moreover, these changes can disrupt the child's social interactions in school which can further reduce their quality of life and cause them to be withdrawn.

How can the school help?

- With permission from the child and his or her parents, consider sharing about the child's hospitalisation with the class.
- Encourage classmates to connect with the student through letters, cards, phone calls or text messages. If possible, consider visiting the child in hospital to bring cheer. Some may also welcome an update on school work while they are in hospital.
- Liaise with the medical social worker or parents for homework to be emailed to the child during hospitalisation and if tele-conferencing is available, the child can also connect to the classroom virtually from the hospital.
- Keep a lookout for the child's social adjustment upon returning to school. If you notice he or she is withdrawn or isolated from his or her friends, you can help by reconnecting them through activities, CCAs or study groups.
- Consider make up lessons individually or in small groups to help the child catch up academically.
- Some children may have learning problems and should be identified for early intervention.
- Discuss with the child whether concessions such as extended duration for examinations will be required especially if he or she gets tired easily due to the condition.
- Providing extra support and going the extra mile to help the child progress will greatly increase his or her self-confidence.

Physical activities

Most children do not have restrictions on physical activities and should be encouraged to participate in all school activities and CCAs, unless told otherwise by the doctor. Participating in CCAs alongside their peers can improve their mental well-being. Children who are excluded from usual school activities may have lower self-esteem and be socially withdrawn.

However, do note that some children may:

- Feel weak and tire easily, especially those on dialysis.
- Have joint pains or problems ambulating due to weakness.
- Have to increase their water intake and apply sun block frequently when participating in sports or activities under the sun.

Exemptions from physical activities would have already been discussed with the doctor. For example:

- Contact sports such as taekwondo should be avoided by transplant patients.
- Water sports should be avoided by dialysis patients with tubes.

In the event that the activity includes overnight camps, children who are on dialysis may have to leave the camp intermittently to undergo their treatment at home or at a dialysis centre. Do encourage them to discuss this with their parents and medical team.

How can the school help?

- To promote inclusivity, discuss and make the necessary arrangements with the student and parents, such as having the child's classroom on ground level or providing wheelchair access for those who have mobility issues.
- Encourage the child to participate in CCAs and other school activities. Seek clarification from the medical team if unsure.



Teasing and bullying

Many children with kidney failure experience teasing or bullying in school. They may look different as a result of their condition or due to the side effects of their medication (e.g. short stature, facial hair growth, stained teeth, puffy face or bloated stomach).

Some classmates may pass hurtful remarks which can cause a self-conscious child or adolescent to be withdrawn and lose his or her self-esteem.



How can the school help?

- With permission from the child and his or her parents, consider sharing with the class about the child's medical condition. If the child is not comfortable sharing openly, he or she can choose to selectively share with a smaller group of friends. The more the child shares, the better adjusted and confident he or she will be. This may lessen the occurrences of bullying too.
- For younger children, a show-and-tell about the medical condition can be a useful way of sharing experiences.
- A younger child can be assigned a buddy to help forge friendship and encourage interactions.
- Adolescents will benefit from peer support but are usually less willing to share about their condition. Encouraging them to share with a small group of friends or a buddy will help them to gain support over time.
- Talk to the child if you feel he or she is socially withdrawn; a referral to the school counsellor may be helpful.

While it is helpful for other students and teachers to know of the child's condition, it is important to seek permission from the child and his or her parents before sharing any information with classmates and other teachers.

Other medical procedures

Please note that vaccinations should be done in the hospital instead of at school. For major dental works, a course of oral antibiotics may be needed.

In case of emergencies, please call 995 and inform the child's parents who will update our medical team. If the child is unwell, please notify his or her parents who will contact us for further advice.

Refrain from providing medications not prescribed by our medical team as these may have adverse effects for the child.

Other Instructions

To Teacher-In-Charge

This is regarding _____
who has/had kidney failure and is a patient of the National University Hospital.

Key notes from medical team

Dialysis / transplant

- ☐ Had an organ transplant.
- ☐ Has home peritoneal dialysis for _____ hours every night.
- ☐ Has haemodialysis on Mondays / Tuesdays / Wednesdays / Thursdays / Fridays, _____ (time), at _____ (venue).
- ☐ Has a dialysis tube in the chest / neck / abdomen which should be kept dry and clean.
- ☐ Has a fistula / graft on left / right arm / leg. Avoid pressure on the fistula / graft area. Do not take blood pressure on the affected area.

Fluids / toileting

- ☐ Can only consume _____ml of fluids per day.
- ☐ When participating in strenuous physical activities, extra fluids may be needed.
- ☐ Will require drinking water frequently in class.
- ☐ Will require frequent toilet access.
- ☐ Will require access to the staff toilet or a wheelchair-friendly toilet.

Physical activities

- ☐ No restrictions on physical activities except _____.
- ☐ Can exercise within physical capacity.
- ☐ Will need to apply sunblock when participating in activities under the sun.
- ☐ Will require assistance in ambulation.

Others

- ☐ Is taking medication to suppress immune system. He / she should avoid direct contact with people having infectious ailments, coughs, colds or flu.
- ☐ Is exempted from school health vaccinations. Vaccinations should be done in the hospital.
- ☐ Can undergo dental procedures, however the medical team must be informed. Oral antibiotics are needed for all dental procedures.
- ☐ _____
- ☐ _____

The medical team will be more than happy to discuss any concerns you may have (with patient's and/or caregiver's consent).

Contact Us

To contact the medical team for discussion, you may email Ms Cheng Peizhi (Senior Medical Social Worker) at Peizhi_CHENG@nuhs.edu.sg or call +65 6772 2447 during office hours (Monday to Friday, 9am to 5pm).