

YOUR KIDNEYS

The kidneys are especially important as together they function as the master chemist of the body keeping it **chemically balanced** and **healthy**.



? What do healthy kidneys do?

Healthy kidneys essentially perform three basic and important actions.

Regulation of chemicals and water balance

One of the important tasks of the kidneys is to remove excess water and minerals from the body. The kidneys also retain water when intake is reduced so as to maintain balance. Minerals such as sodium, potassium, calcium and phosphate, which are needed by the body, are regulated by the kidneys to keep them at the correct levels.

Removal of waste

Waste products in the body are excreted by the kidneys. It must be kept at a low level, as high levels are toxic.

Production of certain hormones

Healthy kidneys also produce chemical messengers called hormones. The kidneys release three important hormones:



Erythropoietin, which stimulates the bone marrow to produce red blood cells.



Active form of Vitamin D, which ensures that calcium is absorbed adequately in bones to maintain its strength.



Renin, which regulates blood pressure.

HEALTHY KIDNEY Functions:

- ▶ Sodium and water removal
- ▶ Waste removal
- ▶ Hormone production

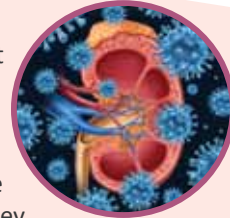


UNHEALTHY KIDNEY Problems:

- ▶ Fluid overload
- ▶ Elevated waste such as
 - Urea
 - Creatinine
 - Potassium
- ▶ Changes in hormone levels controlling
 - Blood pressure
 - Making red blood cells
 - Uptake of calcium

What is kidney disease?

Kidney disease is any disease process that can potentially damage the kidneys. This includes kidney failure from its mildest form to the most advanced stage. We use the term kidney failure when damage has occurred and the function of the kidney is diminished. In chronic kidney failure (also known as chronic renal failure), the damage often occurs gradually over the years. Thus, there may not be any obvious symptoms and unless one goes for screening, you may not be aware at all.



Who is at risk of kidney disease?

They are the elderly, those with diabetes, hypertension, or who have family members with hereditary kidney disease. They should go for regular check-ups to detect early signs of kidney disease.

How do I know if I have kidney disease?

The simplest test is a blood and urine test. However, a full medical assessment is required to confirm presence of kidney disease.



What are the common warning signs of kidney disease?

Sometimes people with serious kidney disease may not present with any symptoms. This is because kidney disease progresses silently and can destroy much of the kidney function before causing any symptoms.

Below are some signs and symptoms that may indicate kidney disease:

- ▶ High blood pressure (hypertension)
- ▶ Puffiness of the eyes, hands and feet due to water retention
- ▶ Passing out bloody, cloudy or tea-coloured urine
- ▶ Excessive foaming of the urine that indicates presence of protein
- ▶ Frequent passing of urine during the night
- ▶ Passing less or difficulty in passing urine
- ▶ Fatigue
- ▶ Loss of appetite or weight
- ▶ Persistent generalised itchiness



What is kidney failure?

Kidney failure is a condition where the kidneys stop working properly. This is either caused by disease or injury to the kidneys.

Why do our kidneys fail?

Most kidney diseases attack the filtering system of the kidneys. The filtering occurs in tiny units inside the kidneys called nephrons. Once the nephrons are damaged, the kidney is unable to perform its normal functions. Damage to the kidneys may happen quickly, often due to injury or poisoning. However, most kidney diseases destroy the nephrons slowly and silently. Only after years or even decades will the damage become apparent. Most kidney diseases attack both kidneys simultaneously.

What happens when the kidneys fail?

When the kidneys fail, imbalances of fluid and substances occur. Waste materials accumulate in the body. This will cause the symptoms outlined earlier. In early stages of kidney disease, the body adapts and you may not have any symptoms. However, in the advanced stages, one can get seriously ill or die if this condition remains untreated. Renal transplant (for those suitable) or long-term dialysis treatment is then necessary.

HELP How to prevent kidney disease?

If you are suffering from diabetes and high blood pressure, you belong to the group of people who are at risk of developing kidney failure. Measures can be taken to prevent or delay the progression to kidney failure.

- ▶ Have your blood pressure checked regularly. Uncontrolled high blood pressure can speed up the progression of any underlying kidney disease.
- ▶ If you suffer from diabetes, make sure your blood sugar level is well controlled. A growing number of kidney patients are people with diabetes.
- ▶ Be cautious of taking medications especially painkillers. It is wise to discuss with a doctor or pharmacist before taking it.

- ▶ Certain substances like toxins, pesticides and illegal drugs can also cause kidney damage. There are problems associated with long-term use or abuse of these substances.



Points to remember

- ▶ Your kidneys are vital organs that keep your blood clean and chemically balanced.
- ▶ The progression of kidney disease can be slowed, but it cannot be reversed.
- ▶ End-stage kidney disease is the total loss of kidney function.
- ▶ Dialysis and transplantation can extend the lives of people with end stage kidney failure.
- ▶ Diabetes and high blood pressure are the two leading causes of kidney failure.
- ▶ You should see a doctor regularly if you have kidney disease.

You may visit these websites for more information:

<http://www.kdf.org.sg>
<http://www.davita.com>
<http://www.uptodate.com/patients/index.html>

Blk 333 Kreta Ayer Road, #03-33, Singapore 080333
Tel: 6559 2630 **Fax:** 6225 0080
Website: www.kdf.org.sg

您的肾脏

肾脏是非常重要的器官，它的主要功能是**维持体内物质的平衡**。



健康的肾脏有什么作用？

健康的肾脏有三大重要的基本功能：

维持化学物质和水份的平衡

我们的身体必须保存适量的水份以维持正常运作。肾脏的一个重要任务是去除体内多余的水份和矿物质。当身体摄水量减少时，肾脏也会储存水份以保持平衡。食物中的许多矿物质如钠、钾、钙、磷等是身体所必需的，肾脏会维持这些矿物质在体内的正确水平。

排除废弃物

体内多数的废弃物都必须尽快排除，过多的废弃物将有害身体。

分泌部分荷尔蒙

健康的肾脏会分泌3种重要的化学物质，称为激素，它们是：



促红细胞生成素，它能促使骨髓制造红血球。



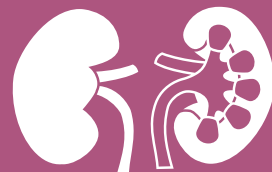
活性维生素D（骨化三醇），它能确保骨骼含有足够的钙质以维持一定的强度。



肾素，它能监测及调节血压。

健康的肾脏功能：

- 去除水和钠
- 清除废弃物
- 分泌荷尔蒙



不健康的肾脏问题：

- 体液过多
- 废弃物过多，例如：
 - 尿液
 - 肌酸酐
 - 钾质
- 如下荷尔蒙分泌功能改变：
 - 血压
 - 红血球
 - 钙质摄取

‘肾疾病’指的是什么？

肾疾病是指任何在进展中可潜在损害肾脏的疾病，也即是指肾脏从初期衰竭发展至末期衰竭的过程。当肾脏受到损伤，功能会逐渐减弱，我们称这现象为肾衰竭。在慢性肾衰竭中，肾功能受损的程度是逐年慢慢发展的。因此，患者一般不会有明显的症状，除非是接受健康检验，否则将不会察觉。



哪些人有患上肾疾病的风险？

年长者、患有糖尿病或高血压、及家族中有遗传性肾疾病的人士，都有患上肾疾病的风险。他们必须定期接受检查，以觉察肾疾病的初期症状。

怎么知道自己是否患有肾疾病？

最简单的方法是做血液和尿液检验。当然，要确诊还必须做更完整的医药检查。



肾疾病有哪些症状？

有些时候，严重的肾疾病患者都未必会有任何的症状，这是因为肾疾病的发展十分隐蔽，能在症状显现前破坏大部分的肾功能。

以下的一些症状是可能患有肾疾病的迹象：

- 高血压
- 水份在体内滞留所引起的眼睛、手和脚的浮肿
- 排出血尿、混浊或茶色的尿液
- 排泄泡沫尿，这显示尿中含有蛋白
- 夜间排尿频繁
- 尿量少或排尿困难
- 疲倦
- 厌食或体重减轻
- 顽固性的皮肤瘙痒



什么是肾衰竭？

肾衰竭是指肾脏停止正常运作的一种状况。它可以是由疾病引发，或外伤所致。

为什么肾脏会衰竭？

大多数的肾疾病都会损坏肾脏的过滤系统。过滤的过程是在肾脏中微小的单位——肾单位中进行。肾单位一旦受损，肾脏将无法维持正常的功能。导致肾脏快速受损的原因，一般都是由外伤或毒素所造成的，然而大多数的肾疾病则只会静静地、缓缓地损害肾单位。只有在数年甚至数十年以后，症状才会出现。大多数的肾疾病都会同时损害两颗肾脏。

肾功能一旦衰竭，会出现什么状况？

肾功能一旦衰竭，水和物质的含量就会失去平衡。废弃物会在体内蓄积，并导致前面所提及的一些症状出现。在早期的肾疾病，身体会自行适应，患者不会有不适的现象。一旦进入末期，患者就会感到严重不适，若不及时医治甚至会危及生命。这时，患者必须开始接受长期的透析治疗或肾脏移植（若属适宜者）。

你如何预防肾脏病？

如果你患有糖尿病和高血压，你是属于患上肾疾病的高风险人士。适当的措施可预防或延缓肾疾病的发展。

- 定期测量血压。高血压若没有受到良好的控制，将会加速任何潜在肾疾病的发展/进展。
- 如果患有糖尿病，必须确保血糖受到良好的控制。因糖尿病而患上肾疾病的人数正逐年增加。
- 谨慎服用药物，特别是止痛药。最好在用药前，先与医生或药剂师商讨。
- 某些其他的药物如毒素、杀虫剂和非法药物等也可导致肾脏的损坏。这是长期使用或滥用这些药物的结果。



必须谨记的要点：

- 肾脏是保持血液清洁和化学物质平衡的重要器官。
- 肾疾病的进度可以被延缓，但无法恢复正常。
- 末期肾疾病是指肾功能已完全遭受损坏。
- 末期肾衰竭病患者可通过透析治疗或肾脏移植来延长生命；
- 糖尿病和高血压是引发肾衰竭的两个最主要病原。
- 如果患有肾疾病，应定期复诊。

欲知更多，可浏览以下网页：

<http://www.kdf.org.sg>
<http://www.davita.com>
<http://www.uptodate.com/patients/index.html>

Blk 333 Kreta Ayer Road, #03-33, Singapore 080333
Tel: 6559 2630 Fax: 6225 0080
Website: www.kdf.org.sg