What is Hyperkalaemia?

- Hyperkalaemia is a serious medical disorder characterised by high levels of potassium in the blood (greater than 5.0 mEq/L).\(^1\) It can result from excessively high intake of potassium, impaired excretion of potassium or a shift in potassium from the intracellular space to the extracellular space.\(^2\)

- Serum concentrations above 6.0 mEq/L generally indicate severe hyperkalaemia. However, this may vary depending on each individual’s normal potassium range. The chart below shows the different serum potassium levels associated with hypokalaemia, hyperkalaemia and severe hyperkalaemia.\(^3,4,5\)

![Serum Potassium Levels Ranges*](image)

- Decreased potassium excretion is the most common cause and can result from the following:\(^2,6\)
  - Decreased kidney function (e.g., chronic kidney disease or CKD) or kidney injury, often observed in patients with diabetes
  - Reduced glomerular filtration rate
  - Congestive heart failure
  - Use of cardio-renal protective drug therapy, such as renin-angiotensin aldosterone system (RAAS) inhibitors and mineralocorticoid receptor antagonists

- **Hyperkalaemia is usually diagnosed during routine laboratory tests**, since it is typically mild and not associated with specific symptoms.\(^7\)

Prevalence of Hyperkalaemia

- Hyperkalaemia affects between 2-3 percent of people in the general population in the United States.\(^8\)

- Hyperkalaemia is a frequent occurrence in hospitalised patients, with a reported incidence of 1.1 to 10 patients per every 100 hospitalised.\(^9\)

- The frequency of hyperkalaemia is substantially increased among certain subgroups. A recent review has shown that hyperkalaemia affects up to 40-50 percent of patients with CKD.\(^8\)
**Hyperkalaemia and CKD**

- **CKD** is a progressive loss of kidney function over a period of months or years.\(^6\) Kidneys are responsible for filtering waste and excess fluids from your blood, which are subsequently excreted in urine.\(^10\)
  - CKD is estimated to affect more than 200 million people worldwide.\(^11\)
- Patients with advanced CKD are at a chronic risk for hyperkalaemia. As CKD progresses and renal function declines, the ability to maintain stable potassium levels is increasingly impaired.\(^1\)
- **Hyperkalaemia is a leading risk factor associated with mortality in CKD**, largely due to its cardiac consequences including cardiac arrhythmia and arrest.\(^4\)

### Caring for Hyperkalaemia and Current Management Methods

- Patients with hyperkalaemia are seen in several care settings, from hospitals and specialty care offices to primary care settings.\(^4\)

- **Hospital visits are the standard for acute care of hyperkalaemia in the United States.** Approximately 50 percent of all emergency room visits for hyperkalaemia result in a hospital admission and an average length of stay of three days.\(^4\)

- Many acute treatments for hyperkalaemia, such as sodium bicarbonate, insulin and beta-2-agonists, provide short-term relief by moving potassium from the outside of the cells to the inside. However, these treatments have limitations since they do not change the total level of potassium in the body.\(^2, 12\)

- For patients with severe hyperkalaemia or problems with natural renal excretion, more aggressive and sometimes extended treatment is required. These interventions aim to increase potassium excretion or temporarily remove potassium and correct the underlying cause of irregular potassium levels.\(^2, 12\)
  - This may involve:
    - Eliminating potassium supplements
    - Modifying diet, which can be challenging given the presence of potassium in many foods
    - Discontinuing or reducing the dose of hyperkalaemia-inducing medications (e.g., RAAS inhibitors)
    - Introducing potassium-lowering agents

- **There is a need for new hyperkalaemia treatments that are specific, effective and well tolerated, with a rapid onset of action (including in the emergency setting) and the potential for use as long-term management therapy.**

### REFERENCES