

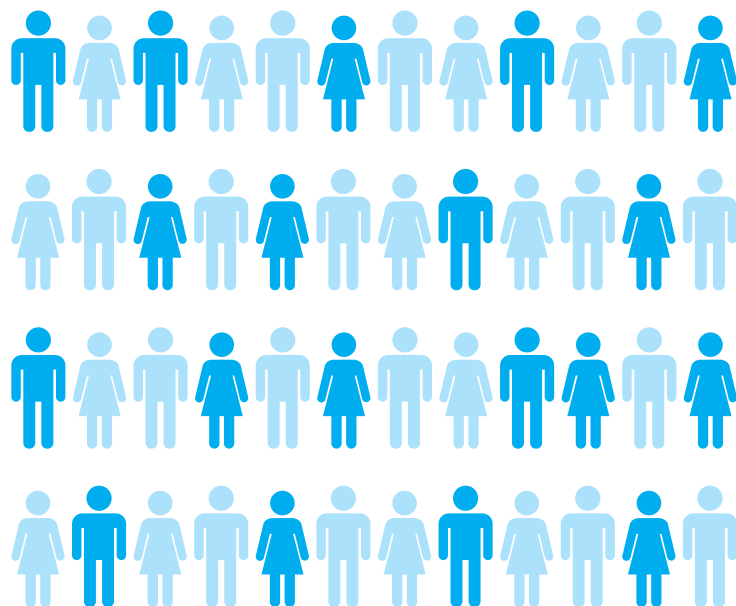


NEPHROCHECK[®] TEST

[TIMP-2 • IGFBP-7]

**Up to 40% of Patients Develop AKI
After Cardiac Surgery¹**

Valve Surgery | CABG | Aortic Surgery | Heart Transplant

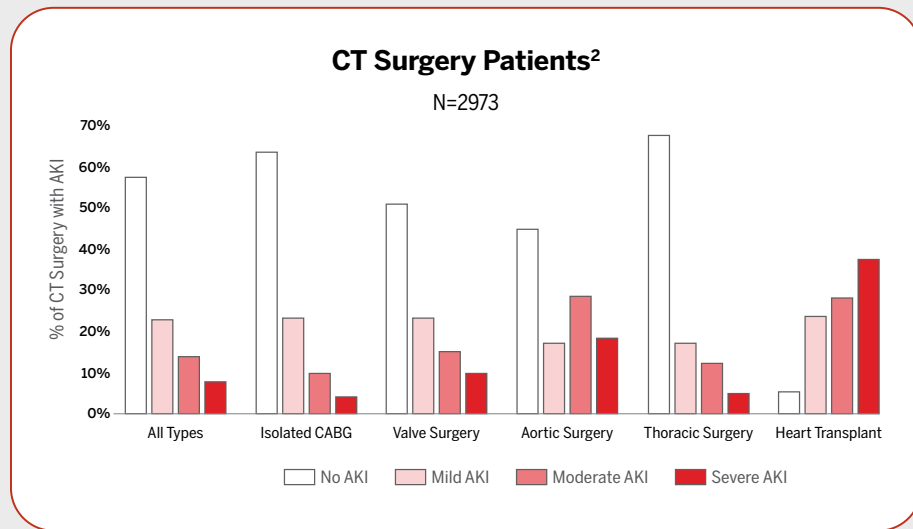


* AKI (Acute Kidney Injury)

**Know earlier.
Intervene sooner.
Avoid AKI.**

PIONEERING DIAGNOSTICS

Acute Kidney Injury (AKI) is Prevalent in CT Surgery

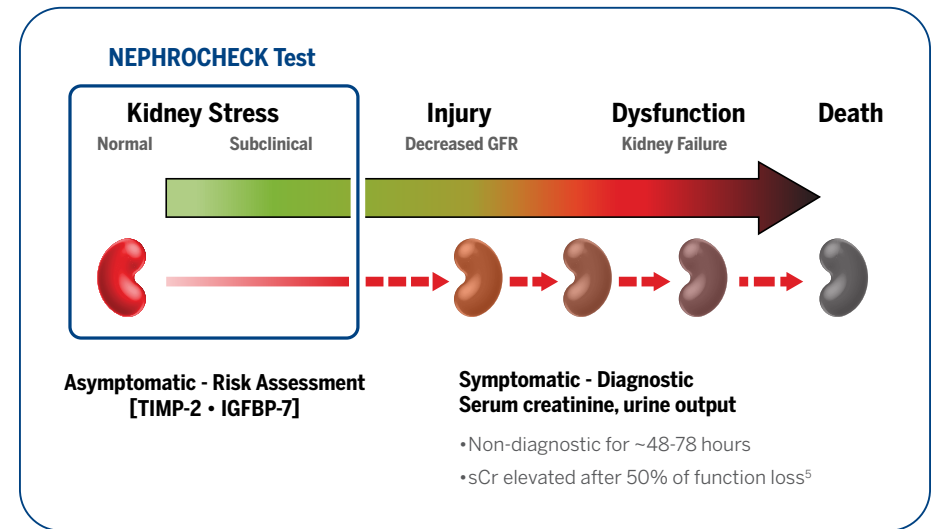


AKI Following Cardiac Surgery is Common

Cardiovascular surgery is the second most common cause for development of acute kidney injury (AKI) in critically ill patients.³

The NEPHROCHECK® Test [TIMP-2 • IGFBP-7]

Identifies Kidney Stress Before Damage Occurs⁴

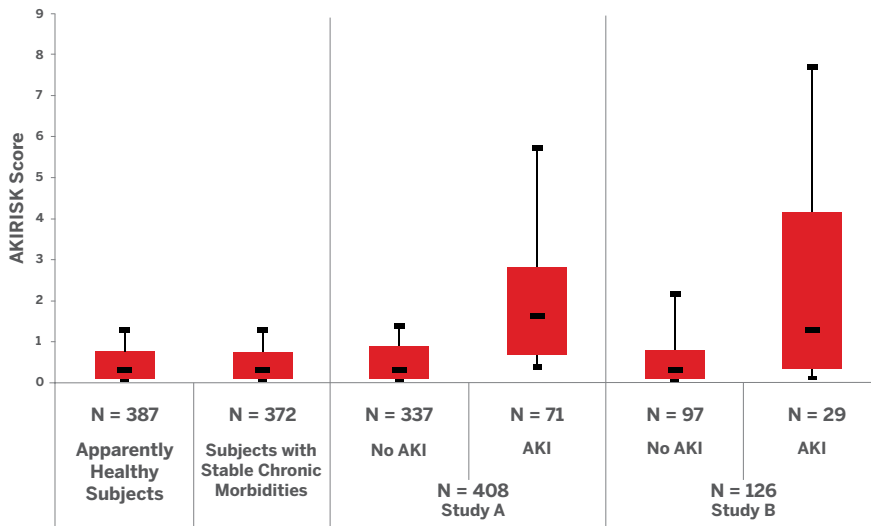


Know earlier. Intervene sooner. Avoid AKI.

NEPHROCHECK® TEST
[TIMP-2 • IGFBP-7]

THE NEPHROCHECK® Test [TIMP-2 • IGFBP-7]

Significantly Discriminates Acute Kidney Injury (AKI)
from No-AKI ($P=0.0001$)⁴



Boxes and whiskers show interquartile ranges
and 10th to 90th percentiles, respectively

Identify Kidney Stress Before Damage Occurs

A multicenter clinical trial demonstrated that patients with an AKIRISK® Score > 0.3 are at greater risk for developing moderate to severe AKI.⁴

The combination of urinary biomarkers
TIMP-2 and IGFBP-7 demonstrated:

- A single cutoff of AKIRISK® Score > 0.3 achieves high sensitivity up to 92% with a specificity of 46%.

NEPHROCHECK
identifies the majority
of AKI positive cases:
**UP TO
92%**

$$\text{NEPHROCHECK Test Result (AKIRISK Score)} = \frac{[\text{TIMP-2} \cdot \text{IGFBP-7}]}{1000}$$

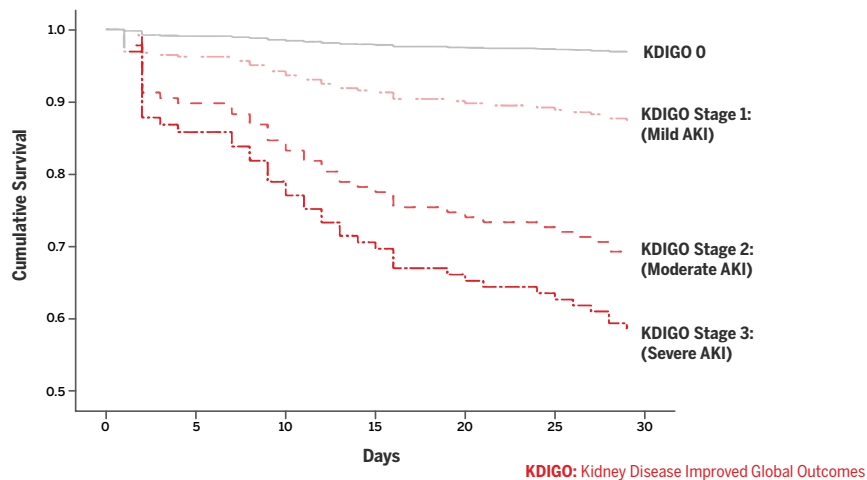
(units=(ng/ml)²/1000)

Know earlier. Intervene sooner. Avoid AKI.

NEPHROCHECK® TEST
[TIMP-2 • IGFBP-7]

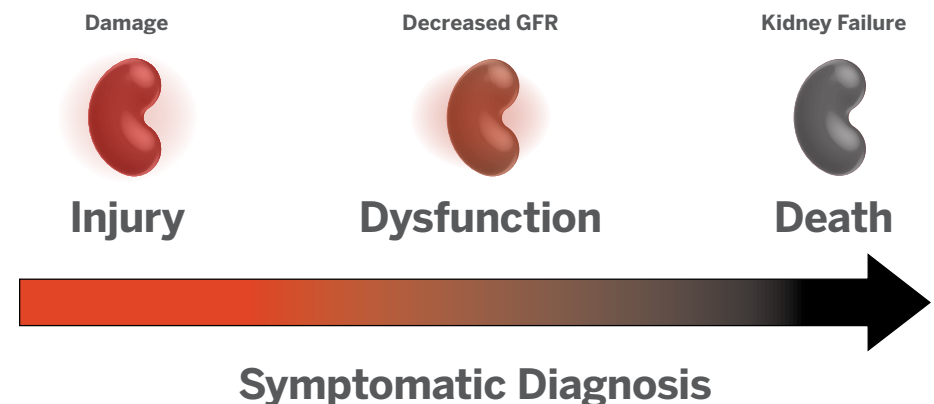
Post-operative acute kidney injury (AKI) increases 30-day mortality following cardiac surgery ($P=0.001$)⁶

- Of the 918 patients studied, 43% had post-operative AKI
- Patients in every stage of AKI showed progressive increase in 30-day mortality rates, cardiopulmonary bypass duration and ICU length of stay⁶⁻⁸



Traditional diagnostic tools do not adequately assess risk of AKI⁹

- An AKI diagnosis relies largely on functional biomarkers – serum creatinine and urine output.
- Lagging indicators often leading to a late and inaccurate diagnosis of AKI.



Serum Creatinine

- Lagging indicator - only elevates after 50% of function lost
- Non-diagnostic for 48% of moderate to severe AKI
- Inconsistencies due to muscle mass, hydration, etc.

Urine Output

- Lagging indicator
- Not consistently measured
- Compromised by quality initiatives (e.g., early Foley catheter removal)

Know Earlier, Intervene Sooner with the NEPHROCHECK® Test System



The only FDA-cleared test to aid in the risk assessment of acute kidney injury (AKI)⁴

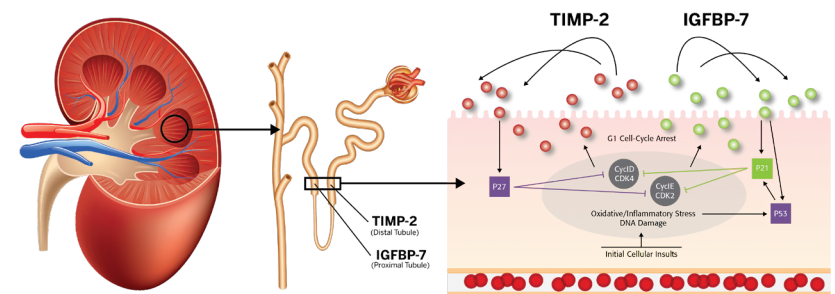
- Specific to AKI
- Easy, fast and simple, 20-minute urine test
- Low capital expense



Intended Use: The NEPHROCHECK Test System is intended to be used in conjunction with clinical evaluation in patients who currently have or have had within the past 24 hours acute cardiovascular and or respiratory compromise and are ICU patients as an aid in the risk assesment for moderate or severe acute kidney injury (AKI) within 12 hours of patient assessment. The NEPHROCHECK Test System is intended to be used in patients 21 years of age or older.

Biomarkers are produced during kidney stress before significant damage occurs.^{4, 10, 11}

- Expressed by tubular cells in response to stress
- Results in G1 cell cycle arrest, presumably to prevent cells with possible damage from dividing
- Injured cells spread the alarm to nearby cells via TIMP-2 and IGFBP-7



TIMP-2: Tissue Inhibitor of Metalloproteinase 2

IGFBP-7: Insulin-like Growth Factor Binding Protein 7

Adapted from proposed model Kashani K. *Crit Care*. 2013;17:R25.

Know earlier. Intervene sooner. Avoid AKI.

NEPHROCHECK® TEST
[TIMP-2 • IGFBP-7]

References

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