# GUIDANCE FOR PRIMARY CARE: EARLY IDENTIFICATION OF KIDNEY DISEASE

Kidneys play a central role in overall health. Given the interconnections between kidney, cardiovascular and metabolic conditions - with shared risk factors and therapies - early detection of kidney disease also directly benefits heart and metabolic outcomes. Holistic, integrated care is, therefore, essential to improving patient outcomes, and **primary care providers play a critical role in the assessment and early maintenance of kidney function, supporting overall cardio-kidney-metabolic health.**

## RAISING THE PROFILE OF KIDNEY HEALTH: A PREVENTATIVE OPPORTUNITY

**850 million** people globally have kidney disease.

**CKD** is projected to become the **5th leading cause of death by 2040.**

**Early intervention** can **slow CKD progression by 30-50%.**

CKD is often **silent until advanced stages.**

CKD (even in early stages) increases cardiovascular risk. **By preserving kidney health, we can reduce the likelihood of cardiovascular complications in the future.**

## HIGH RISK GROUPS TO ASSESS AND MONITOR KIDNEY HEALTH

### Primary

- Diabetes
- Hypertension
- Obesity
- Cardiovascular disease
- Prior AKI/AKD

### Additional risk factors

- Age >60
- Family history of CKD
- Genetic risk factors (e.g. ADPKD)
- Recurrent UTIs or kidney stones
- Hematuria
- Genitourinary disorders
- Gestational conditions (e.g. eclampsia)
- Exposure to extreme temperature (heat stress)
- Systemic disease affecting the kidneys (e.g. lupus, hepatitis, HIV, cancer)
- Ethnic groups at higher risk (e.g. Black, South Asian)
- People who live in geographical areas with high prevalence of CKD
- Drug-induced nephrotoxicity and radiation nephritis

## ASSESSING KIDNEY HEALTH STATUS*

### Assessing for Kidney Damage and Kidney Function

*Applies to routine care only. In case of acute kidney injury, see the KDIGO guidelines.

- **Evaluate kidney damage** - **albuminuria** - urine albumin-creatinine ratio (uACR) or dipstick (if uACR is unavailable)
  - Spot urine acceptable for initial testing; confirm abnormal results using first morning void.
  - Dipstick testing may be used for initial screening. Confirm abnormal results using quantitative laboratory measurement where possible.
- **Evaluate kidney function** - **eGFR** - Calculated based on serum creatinine and/or cystatin C (if available)

**If any of the following are present**:

- uACR ≥ 30 mg/g (≥ 3 mg/mmol)
- eGFR <60 mL/min/1.73m²
- Other markers of kidney damage present*

**Re-test in 3 months.**

**Diagnose CKD (after 2 tests)**
Stage using GFR and uACR. Estimate risk of progression.
Establish underlying cause.
Share and discuss next steps with individual.
Initiate treatment.

**If all of the following are true**:

- uACR < 30 mg/g (< 3 mg/mmol)
- eGFR ≥ 60 mL/min/1.73m²
- No other markers of kidney damage present*

**CKD not present**
Timing of retesting based on individual risk profile.

***Other markers include:** urine sediment abnormalities; persistent hematuria; electrolyte and other abnormalities due to tubular disorders; abnormalities detected by histology; structural abnormalities detected by imaging; and, history of kidney transplantation.

### Assessing Social Determinants of Health

- It is important to consider the social determinants of health when assessing kidney health. These include the conditions in which people are born, grow, live, work, and age, as well as their access to power, money, and resources.
- Consider if referral may be needed to other members of the multidisciplinary team, such as, social workers, physiotherapists and dietitians.

# EARLY IDENTIFICATION OF KIDNEY DISEASE IN PRIMARY CARE

## ESTABLISHING THE CAUSE

### To Establish Cause, Use:

- Clinical context
  - personal and family history
  - physical examination
- Social and environmental factors
- Medications
- Specialized additional investigations:
  - imaging
  - laboratory tests: serologic, urine tests
  - genetic testing
  - kidney biopsy

***Not all evaluations of cause are always required.**

### Potential Causes Include (but are not limited to):

- Diabetes
- Hypertension
- Obesity
- Drug- and toxin- induced kidney damage
- Urologic conditions (obstructive kidney disease, chronic pyelonephritis)
- Rare kidney diseases including glomerular diseases, autoimmune diseases, and genetic disease. If suspected or diagnosed, **early referral to nephrology is critical**. Suggestive features include:
  - Young age of clinical presentation
  - Atypical clinical presentation or disease course
  - Concomitant extra-renal features
  - Syndromic features
  - Certain clinical phenotypes e.g. cystic kidney disease, familial hematuria, steroid-resistant nephrotic syndrome, etc.

## RISK STAGING FOR FREQUENCY OF MONITORING

| CKD is classified based on: • Cause (C) • GFR (G) • Albuminuria (A) | | | | Albuminuria categories Description and range | | |
|---|---|---|---|---|---|---|
| | | | | A1 | A2 | A3 |
| | | | | Normal to mildly increased | Moderately increased | Severely increased |
| | | | | <30 mg/g <3 mg/mmol | 30–299 mg/g 3–29 mg/mmol | ≥300 mg/g ≥30 mg/mmol |
| GFR categories (ml/min/1.73 m²) Description and range | G1 | Normal or high | ≥90 | Screen 1 | Treat 1 | Treat 3 |
| | G2 | Mildly decreased | 60–89 | Screen 1 | Treat 1 | Treat 3 |
| | G3a | Mildly to moderately decreased | 45–59 | Treat 1 | Treat 2 | Treat 3 |
| | G3b | Moderately to severely decreased | 30–44 | Treat 2 | Treat 3 | Treat 3 |
| | G4 | Severely decreased | 15–29 | Treat* 3 | Treat* 3 | Treat 4+ |
| | G5 | Kidney failure | <15 | Treat 4+ | Treat 4+ | Treat 4+ |

**Screen 1**: No CKD unless other markers present. Timing of retesting based on individual risk profile.

**Treat 1**: Monitor 1 time per year.

**Treat 2**: Monitor 2 times per year.

**Treat 3**: Refer to nephrologist (if available). Monitor 3 times per year.

**Treat 4+**: Refer to nephrologist (if available). Monitor 4+ times per year.

Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024;105(4S): S117–S314.

Use the Kidney Failure Risk Equation (KFRE) to determine 2 and 5 year probability of treated kidney failure (dialysis or transplantation) for an individual with CKD stage 3 to 5.

*The KFRE, in addition to criteria based on eGFR or urine albumin-to-creatinine ratio (ACR), and other clinical considerations, can be used to determine: the need for a nephrology referral; the timing of multidisciplinary care; the timing of modality education; and, the timing of preparation for kidney replacement therapy.*

## REFER TO NEPHROLOGY

- eGFR <30 ml/min/1.73 m²
- Unexplained, progressive decline in eGFR ≥5 mL/min/1.73 m² over 12 months or sudden decline over days to weeks
- CKD cause uncertain
- Suspected rare, genetic or hereditary kidney disease.
- Unexplained significant albuminuria/proteinuria
- Microscopic hematuria
- Management of CKD complications
- Symptom changes
- Vasculitis, hematologic disorders
- Persistent hyperkalemia
- Resistant hypertension (defined as uncontrolled hypertension on three antihypertensive agents, including a diuretic)
- Recurring kidney stones
- Pregnancy in CKD
- >3% - 5% 5-year risk of requiring KRT measured using a validated risk equation, e.g. KFRE

**Disclaimer text**: This resource is intended to facilitate decision making of health professionals in their daily practice. However, final decisions concerning an individual patient must be made by the responsible health professional(s) in consultation with the patient and caregiver as appropriate. ISN declines any responsibility for any damage caused by the use that may be made of the information provided in this resource.

This resource was developed with the support of ISN's 2025 Strategic Partners.