American Kidney Fund®
FIGHTING ON ALL FRONTS

Kidney Health in Primary Care: Identifying Risk, Slowing Progression, and Navigating Referrals

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Jan 8, 2026

Outline

- Introduction to chronic kidney disease
- KDIGO screening recommendations
- Treatments for CKD prevention and progression
- Referral to nephrology
- Genetics and kidney disease

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The Silent Crisis Unfolding in Your Clinic

World Health Organization

Executive Board
156th session

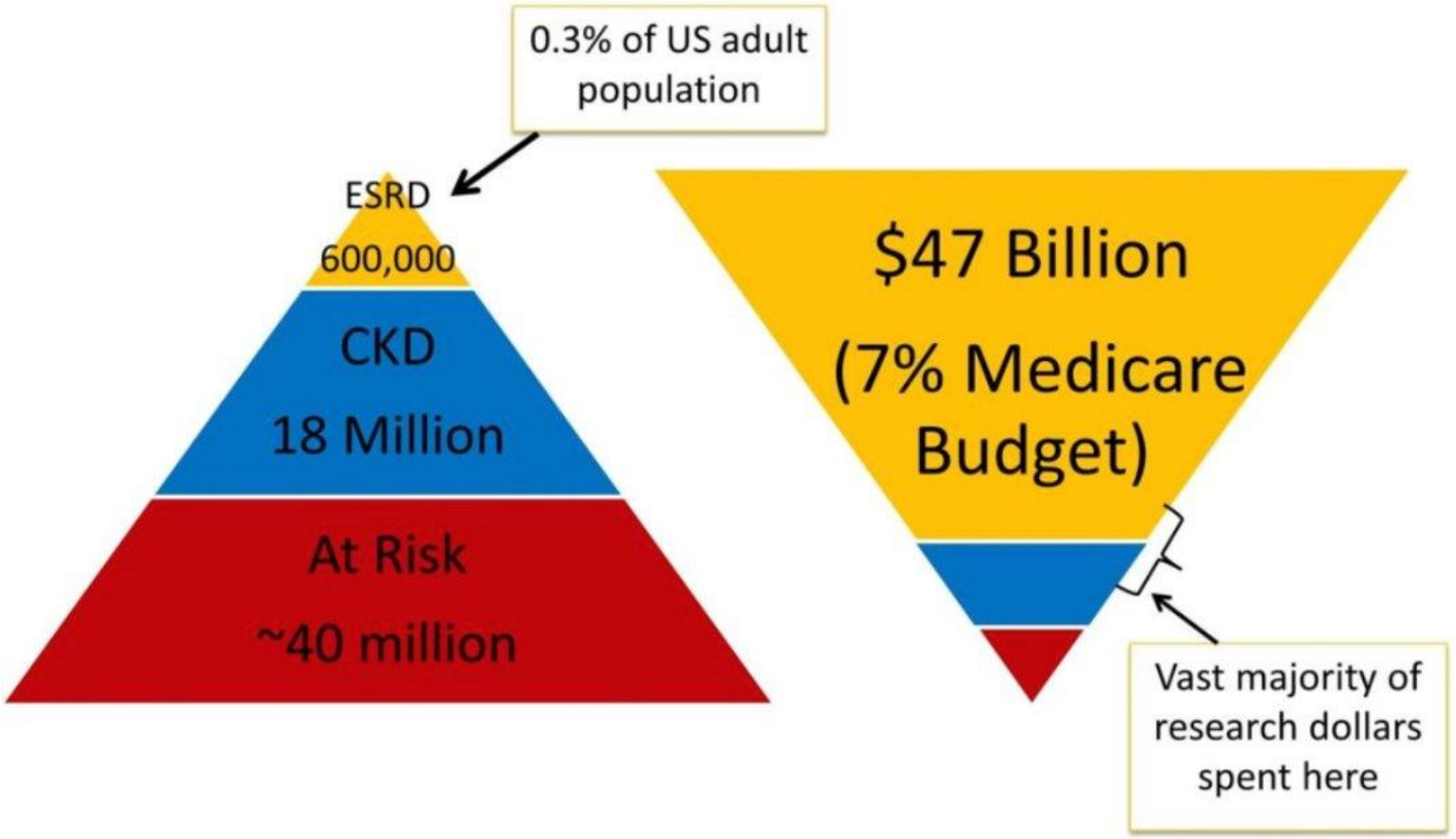
Agenda item 7 EB156/CONF./6

3 February 2025

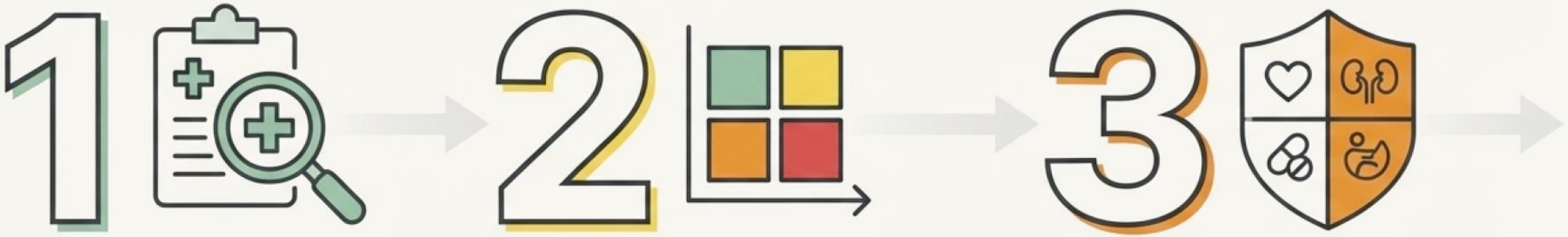
Reducing the burden of noncommunicable diseases through promotion of kidney health and strengthening prevention and control of kidney disease

- **90% of persons with CKD do not know they have it**

Kidney Disease and Kidney Failure - High Resource Utilization



The PCP's 3-Step Playbook for the CKD Crisis



IDENTIFY

Who is at risk? What are the essential labs?

STRATIFY

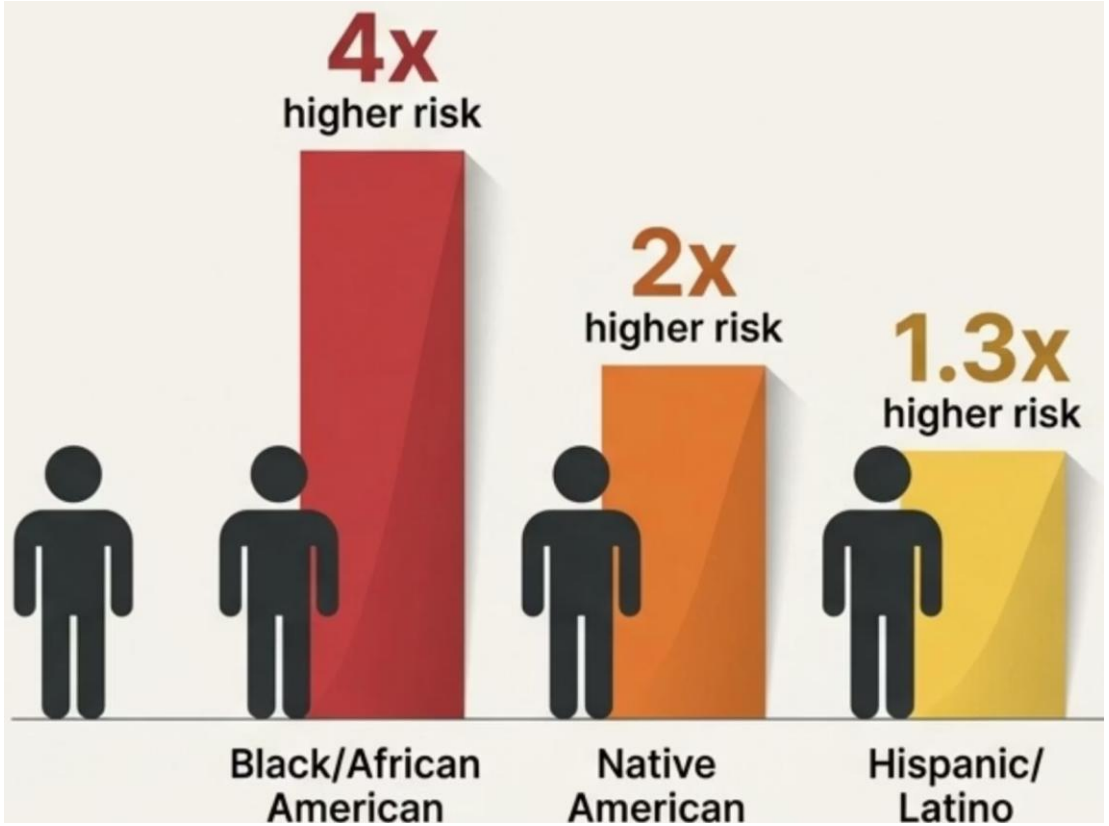
How severe is it? What is the risk of progression?

ACT

What are the evidence-based interventions to slow the disease?

CKD is a Crisis of Health Equity

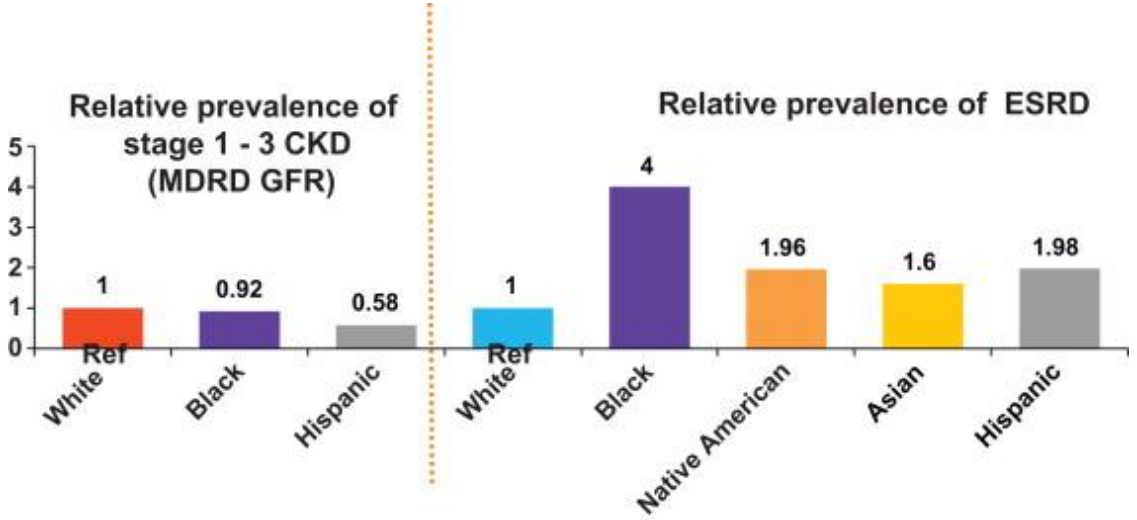
ESRD Risk Disparity



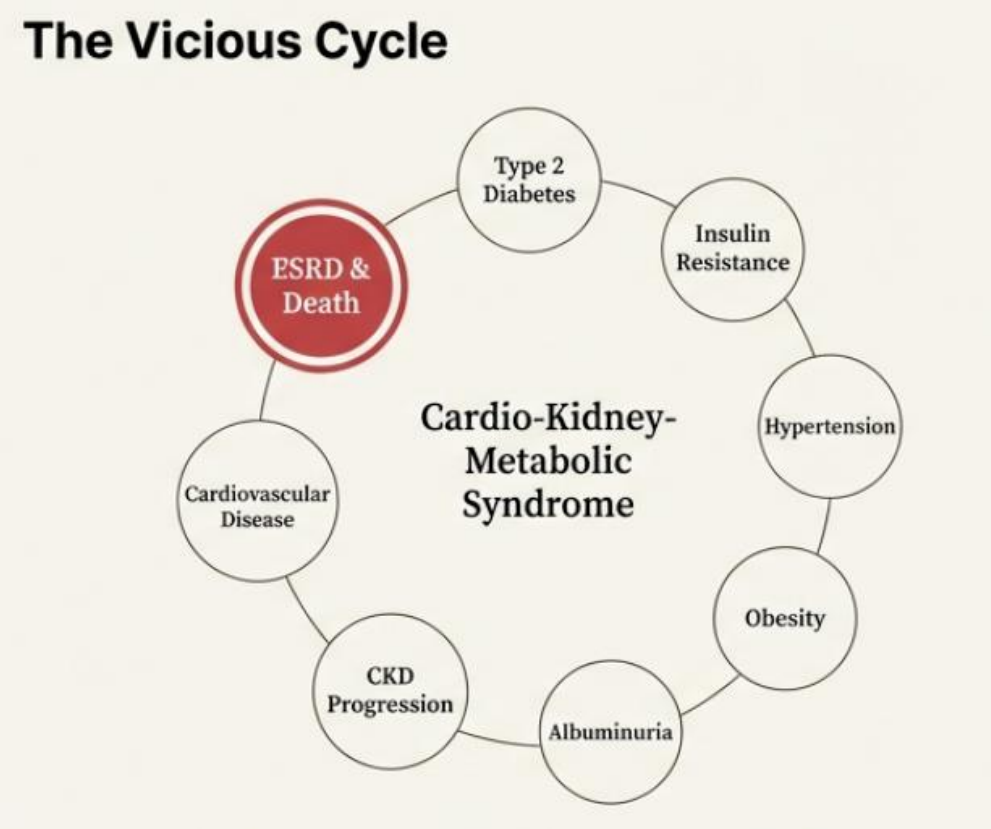
The Drivers Aren't Just Genetic

Social Determinants of Health: Transportation barriers, medication cost, health literacy, food access.

Structural Barriers: Less access to specialists, preventive care, and newer medications.



Cardio-Kidney-Metabolic Syndrome



You're not treating three separate diseases; you're treating one interconnected system. A single intervention has multiple benefits.

- Type 2 Diabetes, Hypertension, Obesity, and CKD form an interconnected cycle leading to cardiovascular disease, ESRD, and death. Breaking one link helps break the entire chain.

Step 1: Who is a risk

Cardiovascular Disease

Diabetes (any type)

Hypertension

Age ≥65

Family History of CKD

High-Risk Ancestry

Obesity (BMI ≥30)

Step 1: The Two Essential Labs

eGFR (Estimated Glomerular Filtration Rate)

Measures: Kidney FUNCTION

Answers: How well are the kidneys filtering?

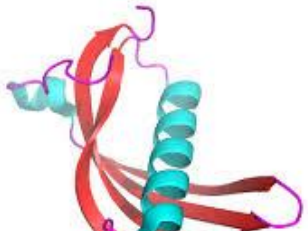
UACR (Urine Albumin-to-Creatinine Ratio)

Measures: Kidney DAMAGE

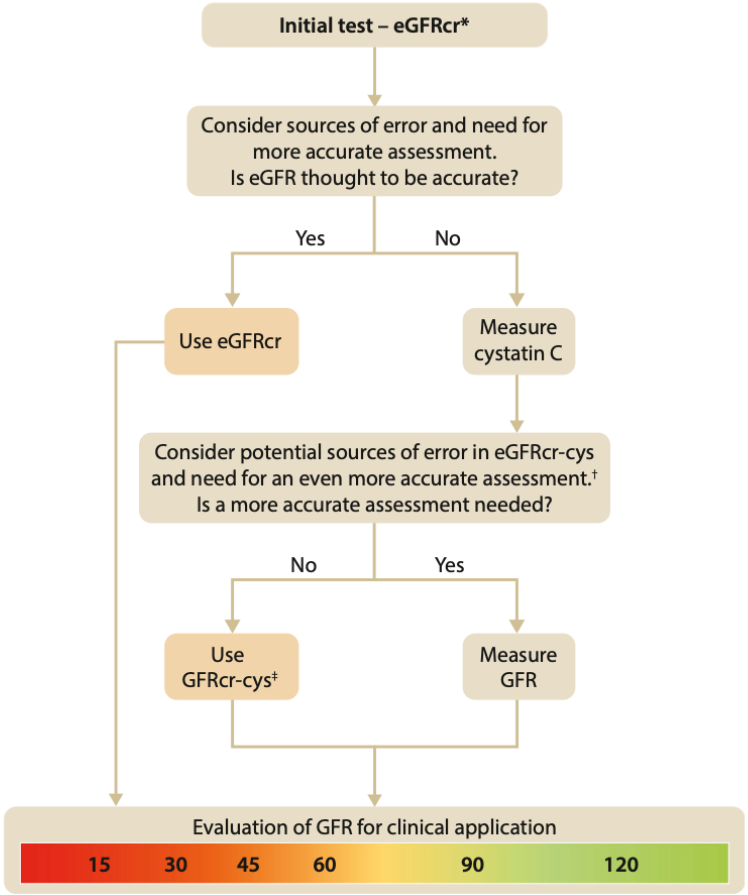
Answers: Is protein leaking into the urine?

Ordering eGFR without UACR is seeing only half the picture.
UACR is the **single strongest predictor of CKD progression**.

Cystatin C



- Protein produced by all nucleated cells of the body
- Tighter correlation with measured GFR
- Stronger association with adverse outcomes than creatinine

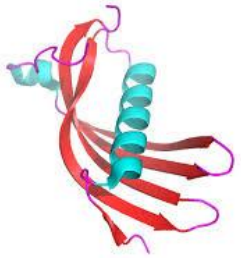


1B

1.1.2.1: In adults at risk for CKD, we recommend using creatinine-based estimated glomerular filtration rate (eGFRcr). If cystatin C is available, the GFR category should be estimated from the combination of creatinine and cystatin C (creatinine and cystatin C–based estimated glomerular filtration rate [eGFRcr-cys]).

KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024.

Cystatin C



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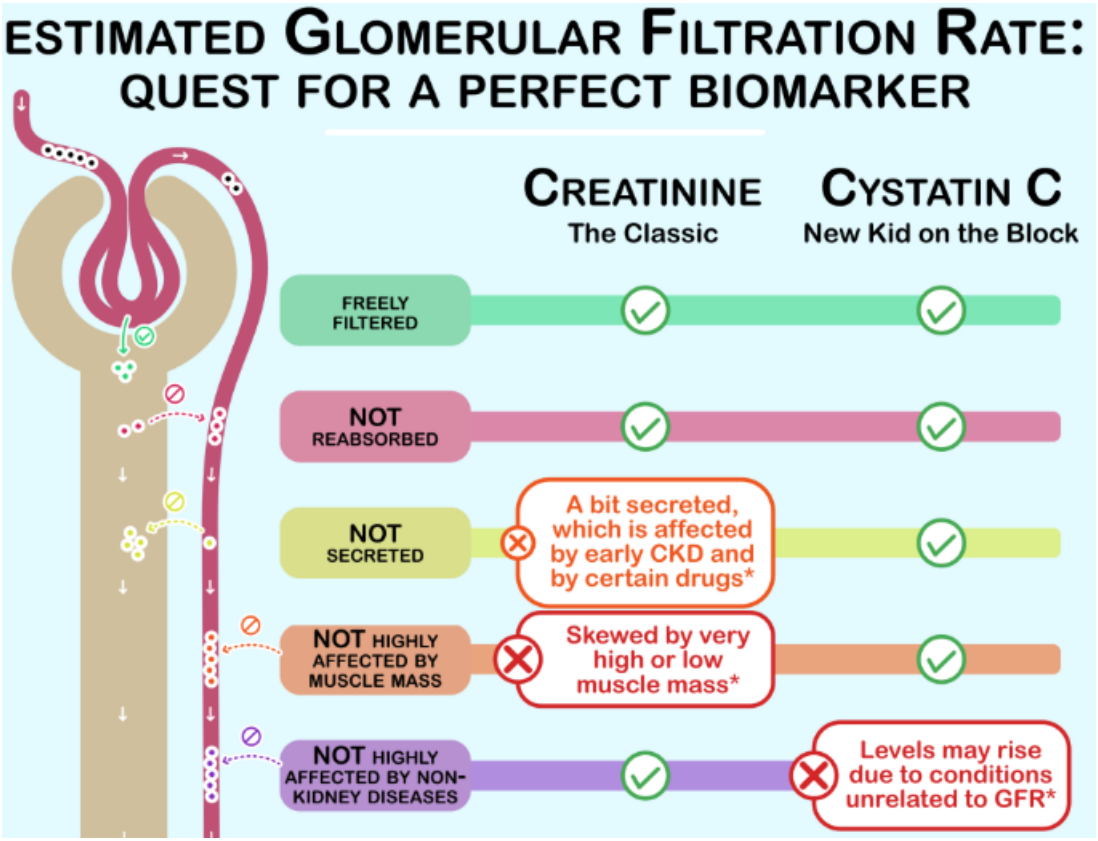

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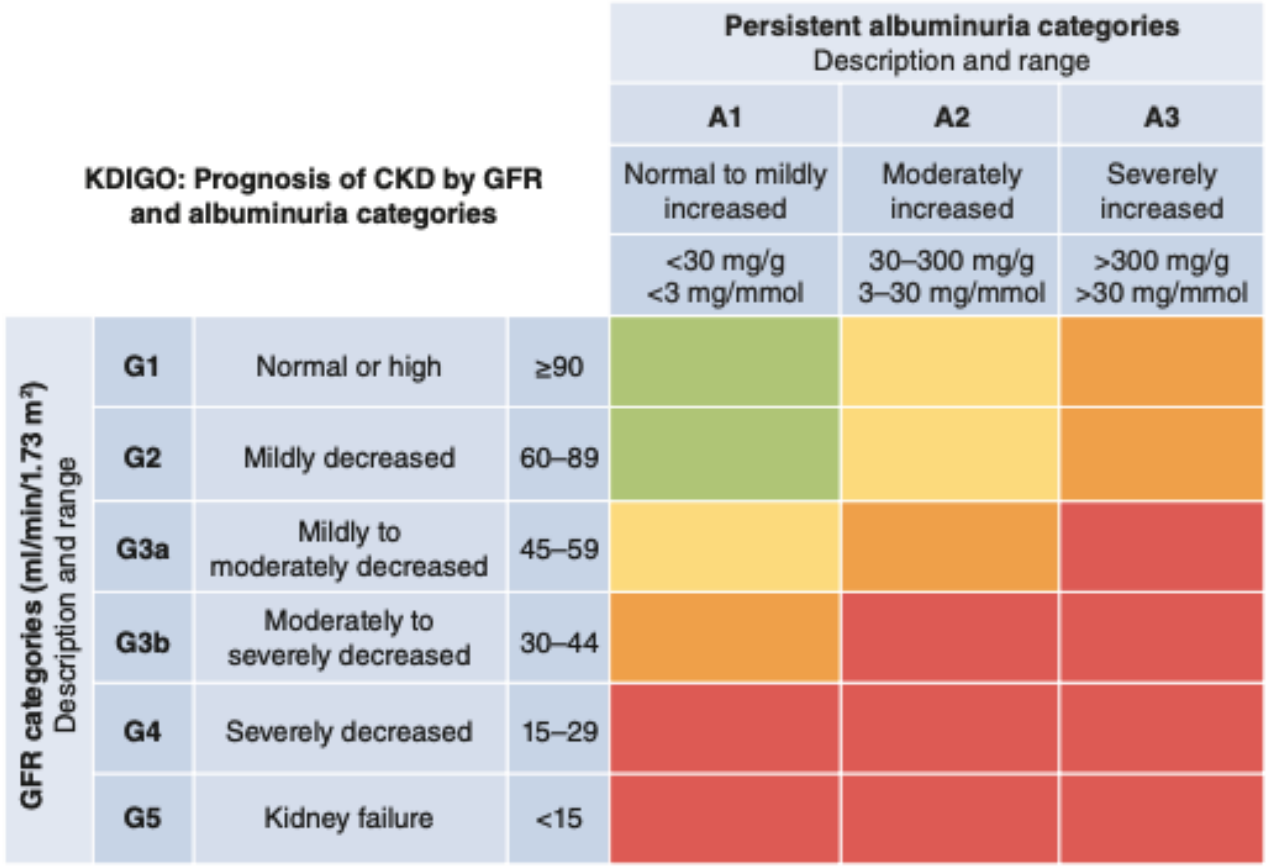
KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int. 2024.

Step 2: How severe is it?



KDIGO: Prognosis of CKD by GFR and albuminuria categories

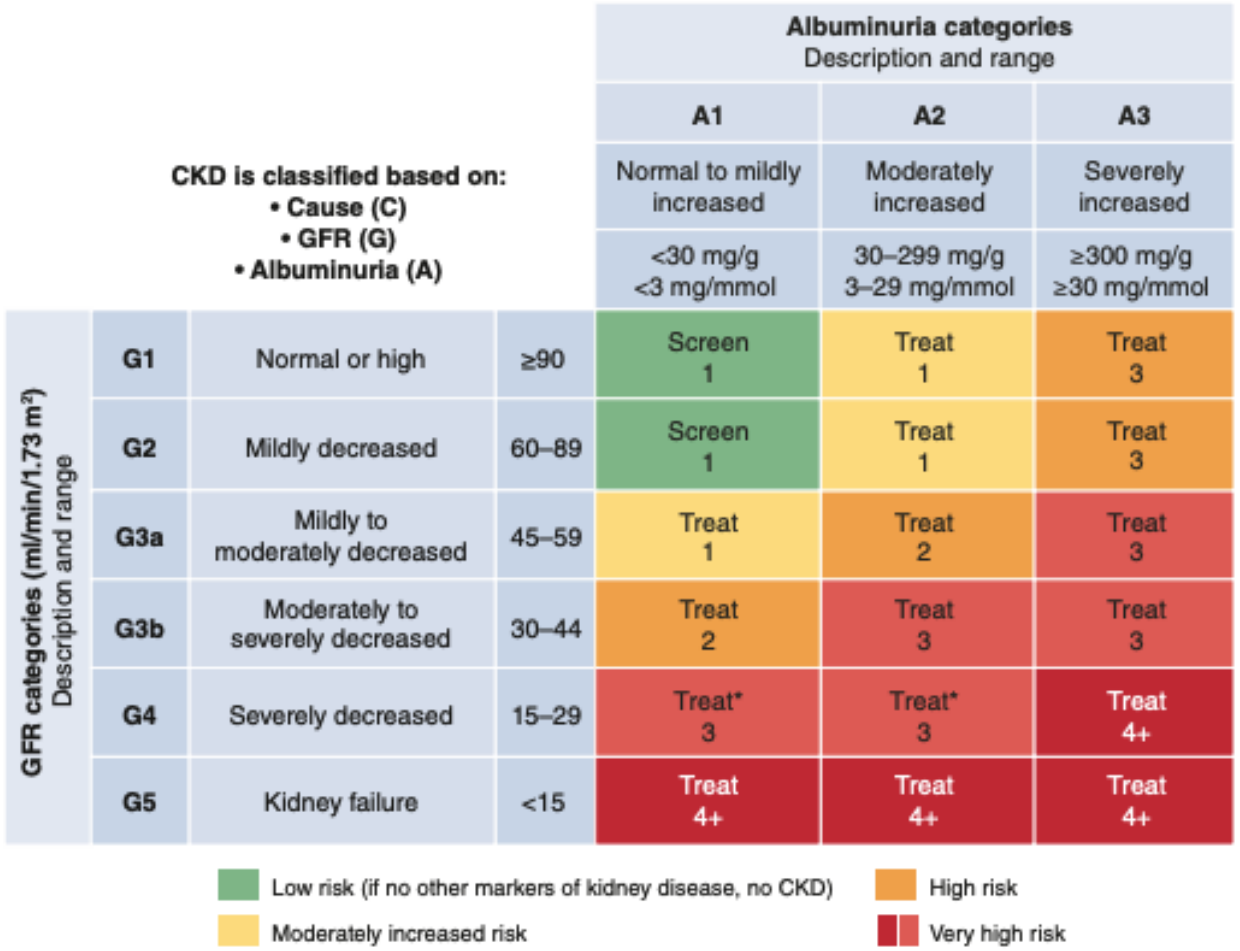
GFR categories (ml/min/1.73 m²) Description and range			Persistent albuminuria categories Description and range		
			A1	A2	A3
			Normal to mildly increased	Moderately increased	Severely increased
			<30 mg/g <3 mg/mmol	30–300 mg/g 3–30 mg/mmol	>300 mg/g >30 mg/mmol
G1	Normal or high	≥90			
G2	Mildly decreased	60–89			
G3a	Mildly to moderately decreased	45–59			
G3b	Moderately to severely decreased	30–44			
G4	Severely decreased	15–29			
G5	Kidney failure	<15			

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red: very high risk. GFR, glomerular filtration rate.

Stratify Risk with the the KDIGO Heat Map Map

This grid is your north star. It tells you follow-up frequency, treatment intensity, and referral urgency.

Step 2: How severe is it?



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+

Low risk (if no other markers of kidney disease, no CKD)
Moderately increased risk
High risk
Very high risk

Stratify Risk with the KDIGO Heat Map

Color-to-Action Guide

GREEN (Low Risk): Monitor annually. Standard preventive care.

YELLOW (Moderate Risk): Monitor 6-12 months. Start ACEi/ARB for albuminuria. Target BP <130/80.

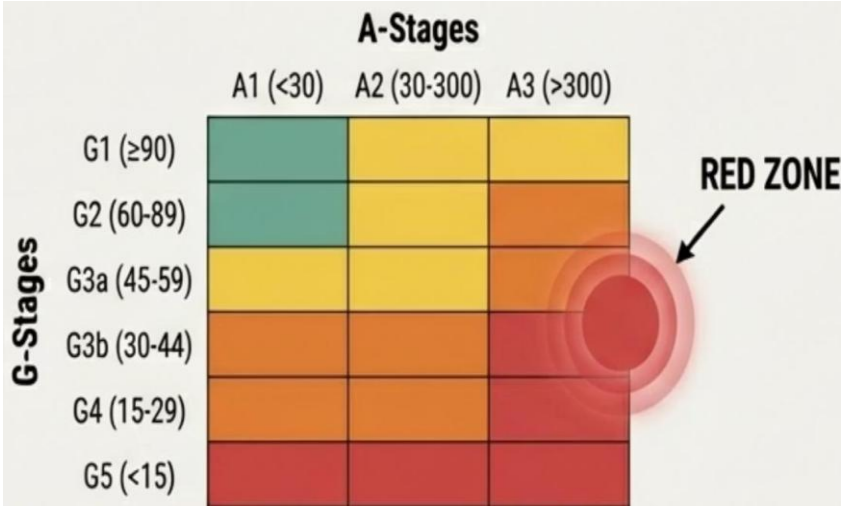
ORANGE (High Risk): Monitor 1-3 months. Intensive management (BP <120, SGLT2i). Schedule nephrology consult.

RED (Very High Risk): Monitor monthly. Urgent referral needed. Prepare for potential ESRD.

Putting it into perspective

Mr. Smith, 65, with uncontrolled T2DM and HTN.

- Creatinine: 1.4
- eGFR: 42
- UACR: 450



The 3-Step Analysis

1. IDENTIFY: He has risk factors and meets the definition of CKD (eGFR <60 and UACR >30).

2. STRATIFY: G-Stage: **G3b** (eGFR 42), A-Stage: **A3** (UACR 450). On the Heat Map: **RED ZONE (Very High Risk)**.

3. ACT: ????

Is this an acute emergency or not?

Is there a prior creatinine to compare?

Prior was <u>normal?</u>
➔ Think AKI. Look for reversible causes (dehydration, NSAIDs, sepsis).

Prior was alsoelevated?
➔ This is CKD. Determine if it's stable or progressive. Manage outpatient.

No prior available?
➔ Assume CKD until proven otherwise, but look for acute acute triggers.

Evaluation of causes CKD

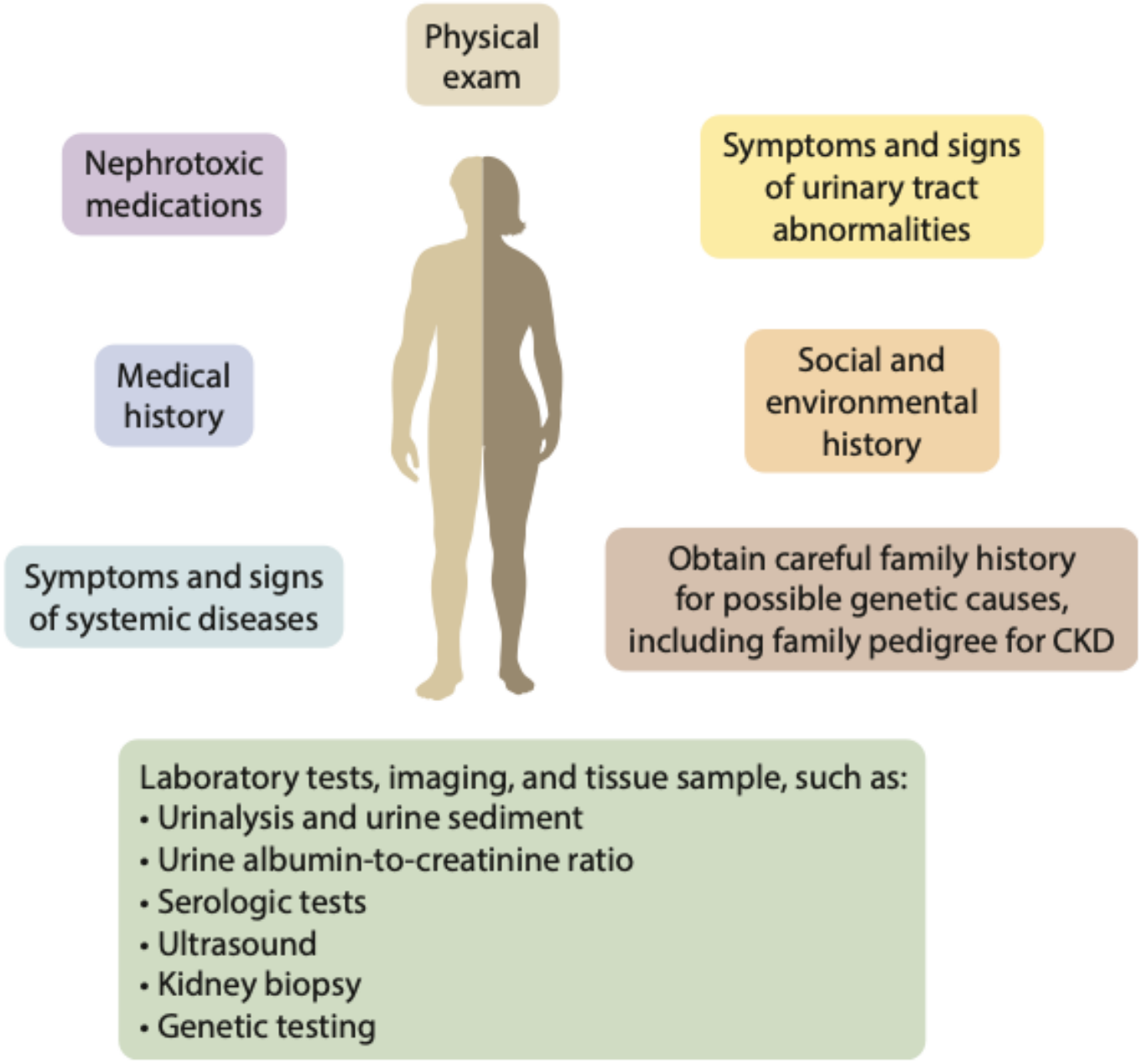
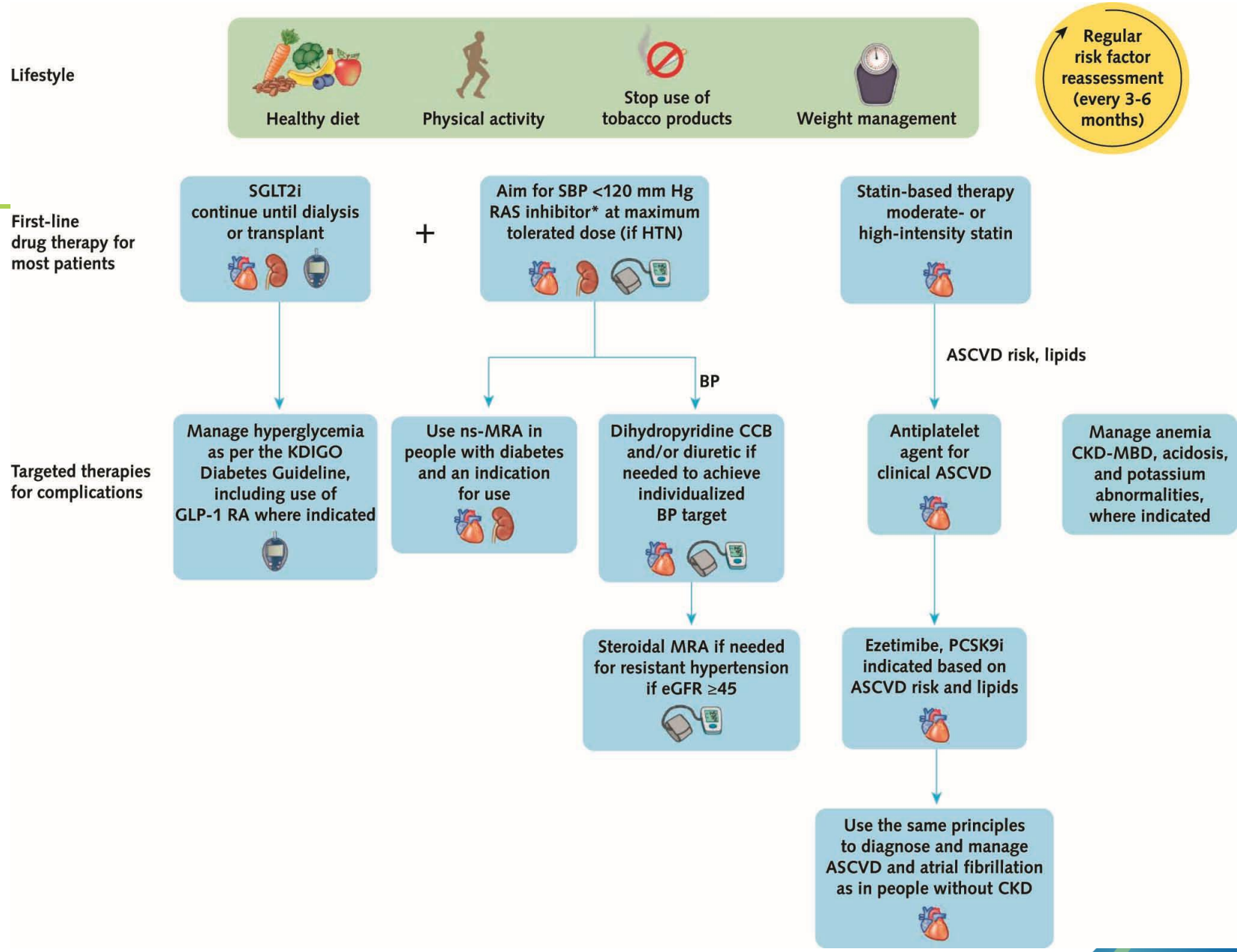
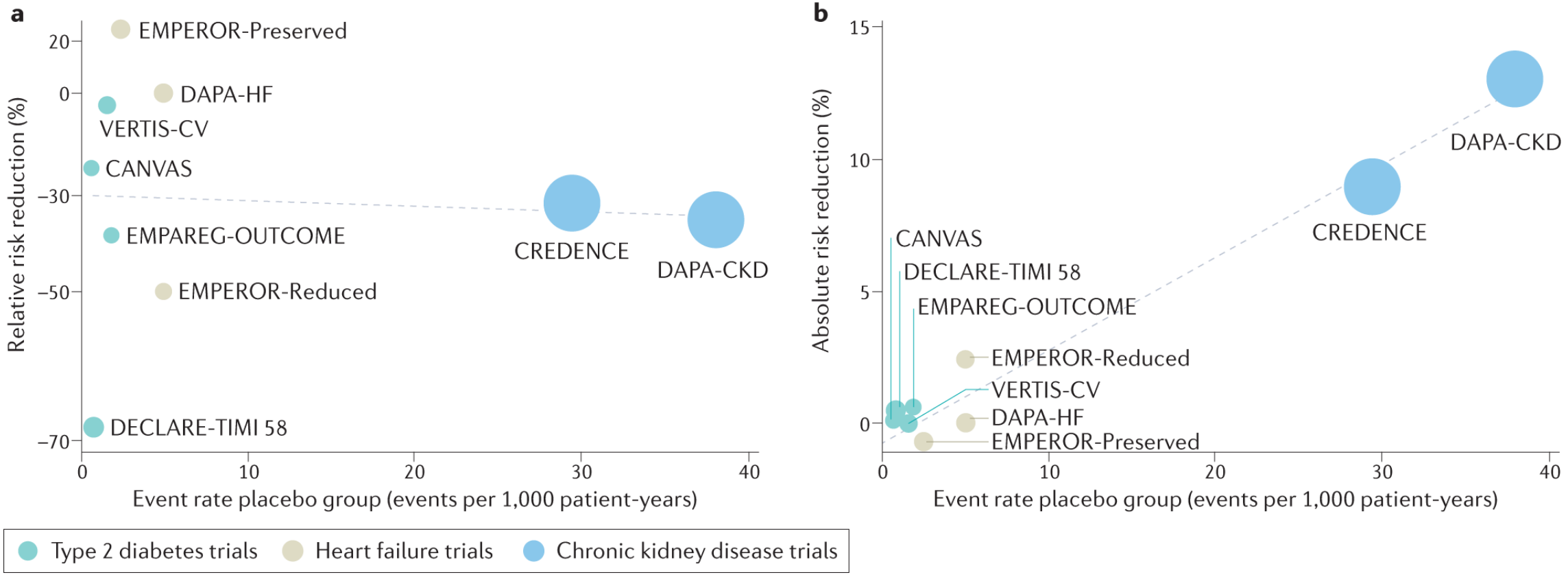


Figure 8| Evaluation of cause of chronic kidney disease (CKD).

Approach to CKD treatment and risk modification



Effect of SGLT2 inhibitors on kidney failure



Who should receive SGLT2i

SGLT2 Inhibitor Cold Map

Indications for SGLT2i in CKD/Albuminuria/T2DM/ HFrEF/HFmrEF/HFpEF

GFR Categories (ml/min/1.73m²) Description and range				Albuminuria Categories Description and range		
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	G4	Severely decreased	15-29			
			20			
	G5	Kidney failure	<15			

Cardiovascular / kidney risk reduction

Cardiovascular risk reduction only: HFrEF / HFmrEF / HFpEF

No evidence for benefit / safety*

Nonsteroidal MRA - Finerenone

FIDELIO-DKD

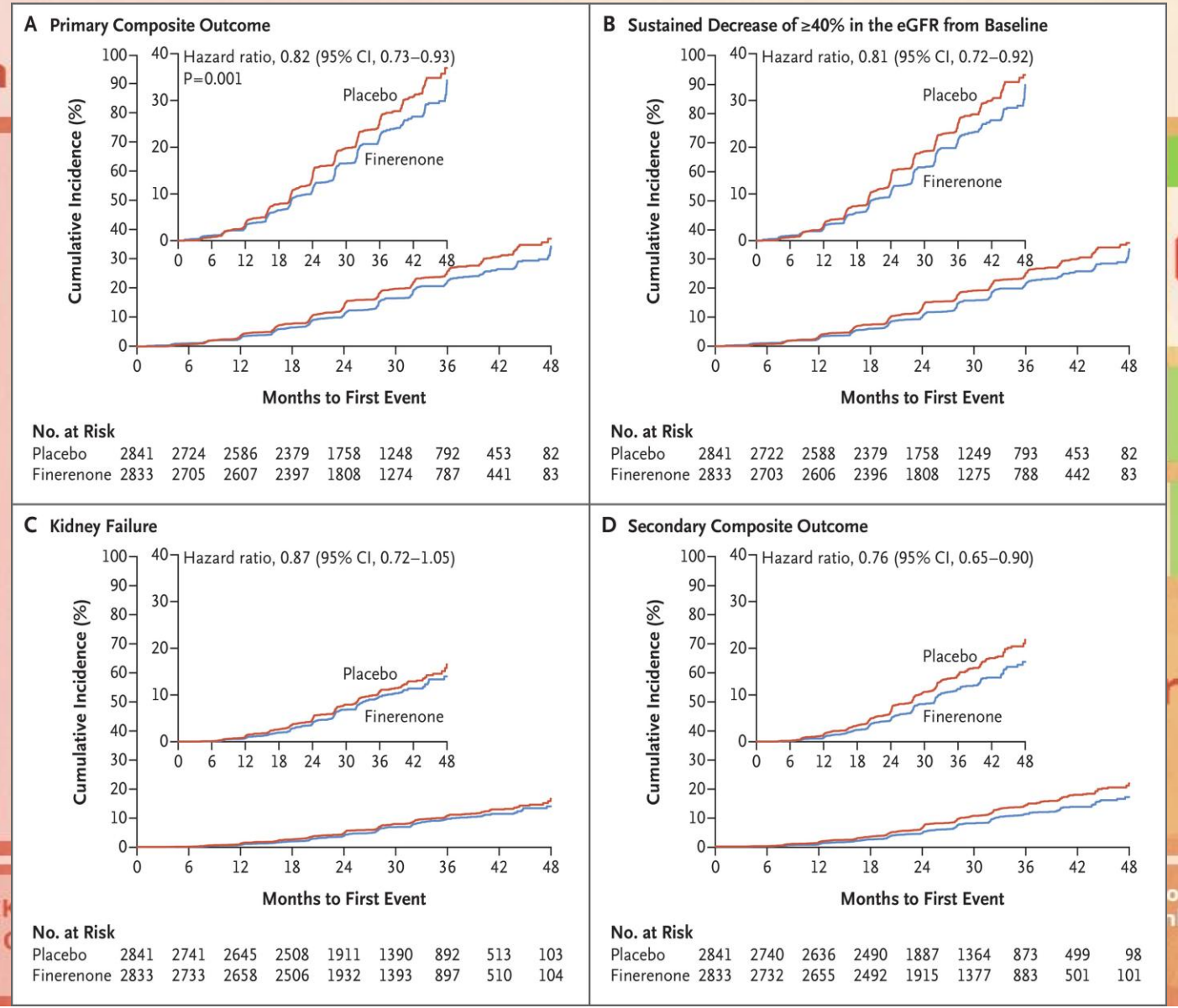
Does finerenone im

- Double-blinded
- Type 2 diabetes
- 2.6 years Median follow-up
- RAAS blockade Maximum tolerable dose

Stratification

- eGFR 25 to <75 (mL/min/1.73m²)
- uACR 300 to 5000 (mg/g)
- eGFR 25 to <60 (mL/min/1.73m²)
- uACR 30 to <300 (mg/g)
- Diabetic retinopathy

Conclusion In patients with CK
finerenone resulted in lower risks of
events than placebo



Safety

- Discontinuation of trial regimen due to hyperkalemia

0.9%

2.3%

re similar

one on chronic kidney disease
nline October 23,

@whatsthegfr

Finerenone and empagliflozin: is the combination better than either agent alone in CKD and Type 2 Diabetes?

Methods

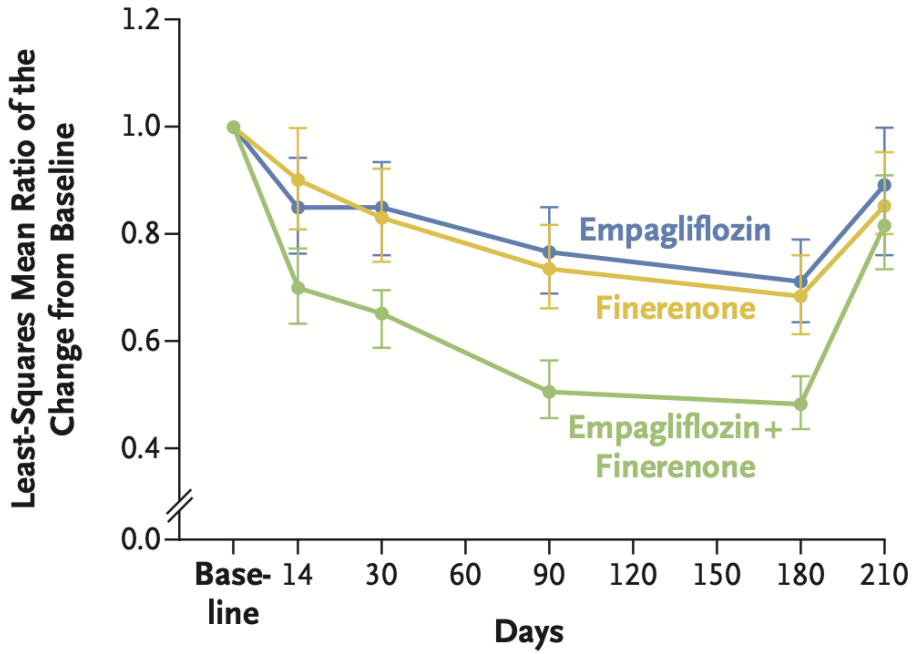
- Randomized, double-blind trial
- CKD + T2D
- 14 countries
- 98% ACEi/ARB users
  23% GLP-1RA users
- Stratified according to eGFR and UACR

Empagliflozin

Finerenone

Empagliflozin & Finerenone

A Change in Urinary Albumin-to-Creatinine Ratio



No. of Patients						
Finerenone	258	247	248	237	236	227
Empagliflozin	261	254	252	246	238	232
Empagliflozin + finerenone	265	248	253	248	240	238

No unexpected adverse events

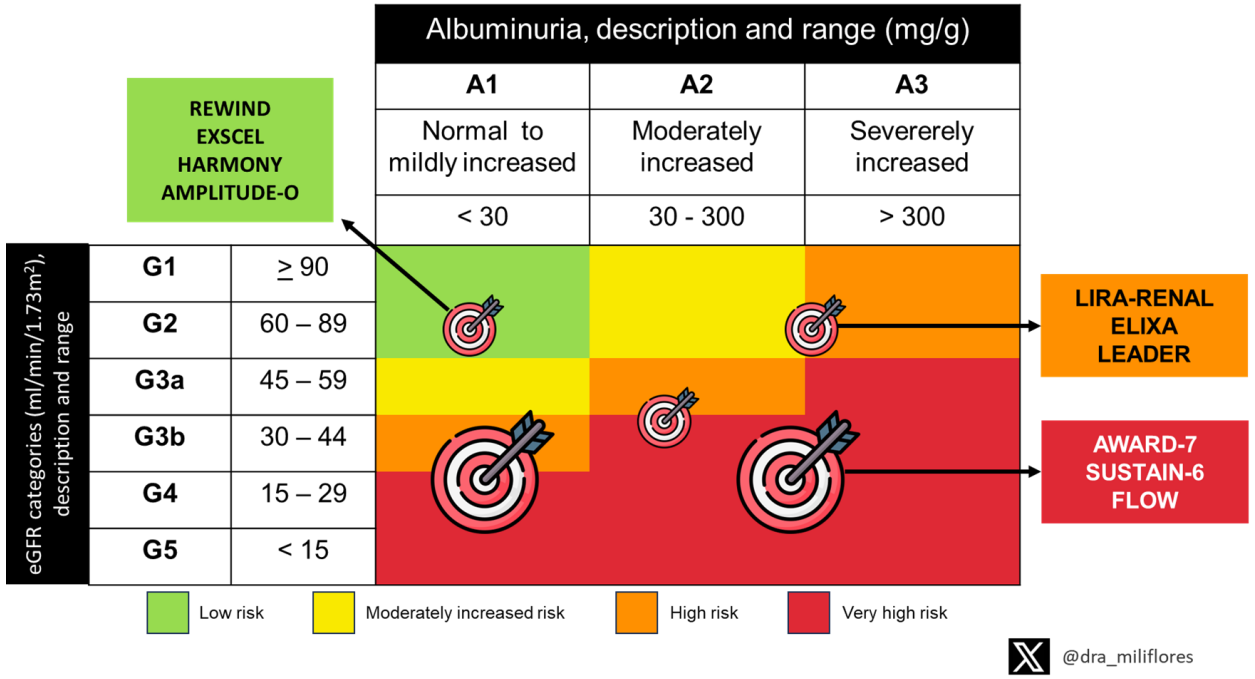
Conclusion: Among persons with both chronic kidney disease and type 2 diabetes, initial therapy with finerenone plus empagliflozin led to a greater reduction in the urinary albumin-to-creatinine ratio than either treatment alone.

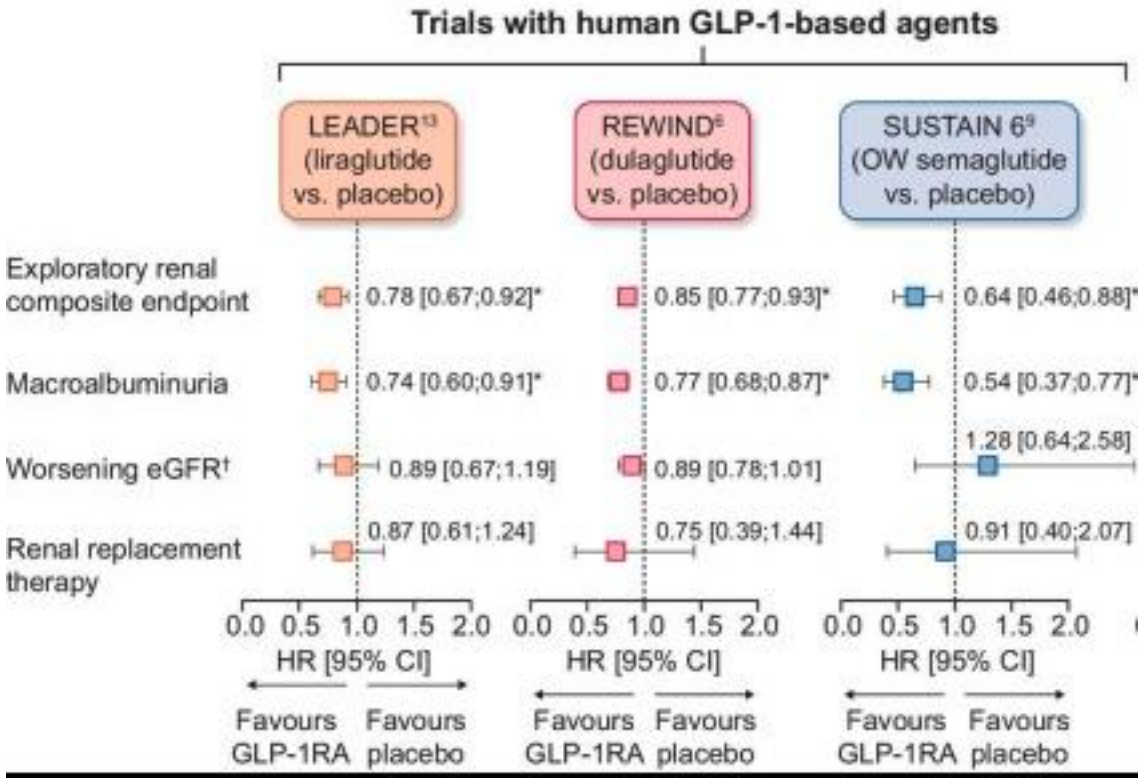
VA by Michelle Fravel

Agarwal R, Green JB, Heerspink HJL, et al; CONFIDENCE Investigators. Finerenone with Empagliflozin in Chronic Kidney Disease and Type 2 Diabetes. N Engl J Med. 2025 Jun 5.

Role of GLP1-RA in kidney disease

GLP-1-RA Renal Outcome Trials





FLOW Trial: Effects of semaglutide on chronic kidney disease in patients with type 2 diabetes

KidneyNews

Methods and cohort

Multinational, randomized, and placebo-controlled trial

Type 2 diabetes with chronic kidney disease

- eGFR, 25–50 mL/min/1.73 m² UACR, 100–5000 mg/g
- eGFR, 50–75 mL/min/1.73 m² UACR, 300–5000 mg/g

Study period: June 2019–May 2021

Median follow-up period: 3.4 years

Results

	Major kidney disease events	Annual rate of change in eGFR (mL/min/1.73 m²)	Major cardiovascular events
Semaglutide (N = 1767)	331	−2.2	212
HR, ETD (95% CI)	HR, 0.76 (0.66–0.88)	ETD, 1.16 (0.86–1.47)	HR, 0.82 (0.68–0.98)
p value	0.0003	<0.001	0.029
Placebo (N = 1766)	410	−3.4	254

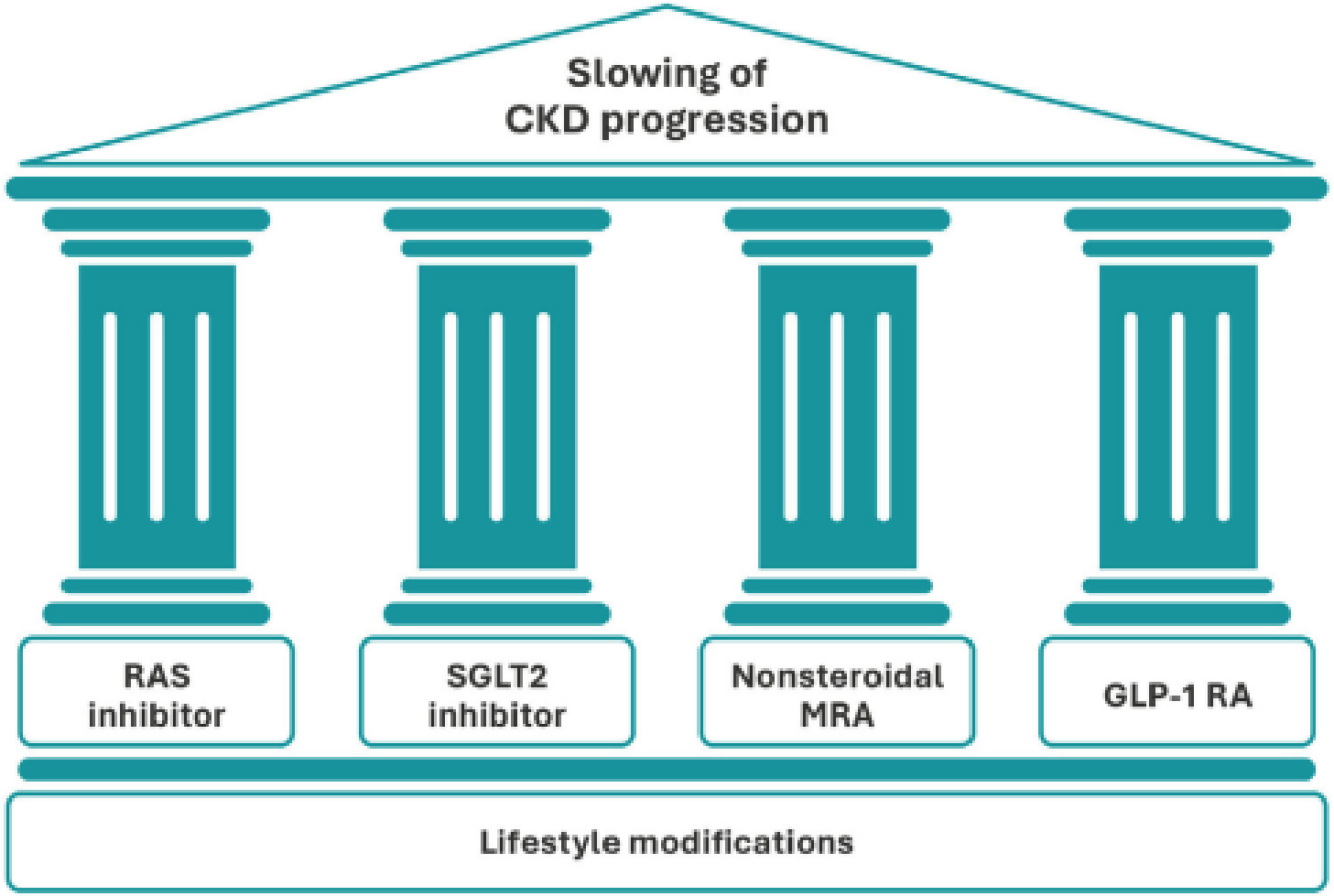
ETD, estimated treatment difference.

Conclusions: Semaglutide reduced the risk of clinically important kidney outcomes, major cardiovascular events, and death from any cause in participants with type 2 diabetes and chronic kidney disease.

Perkovic V, et al. **Effects of Semaglutide on Chronic Kidney Disease in Patients With Type 2 Diabetes.** *N Engl J Med* 2024; 391:109–121. doi: 10.1056/NEJMoa2403347

Visual abstract by Priyadarshini John, MD, DM, MSc

The 4 pillars of pharmacotherapy in CKD



The KDIGO 2024 Update: A Call for Proactive Primary Care

Comprehensive Evaluation

Moving beyond a single eGFR number.

Risk-Based Management

Tailoring therapy to individual kidney and cardiovascular risk.

Patient-Centered Strategy

Integrating patient needs and preferences into every decision.

We Know the Triggers

- ☑ eGFR <30 (G4/G5)
- ☑ Rapid Progression (>5 mL/min/year)
- ☑ Nephrotic Syndrome (UACR >2200 mg/g + Edema)

We Face the Reality

Long Wait Times

Distance & Travel Barriers

Cost & Affordability

Lost to Follow-up

Michael: Your Patient

Patient: Michael, 67
History: Poorly controlled T2 Diabetes, Uninsured
The Barrier: Previous referral failed due to cost & distance.

eGFR Progression

52 → **38**

Inter Regular (in 6 months)

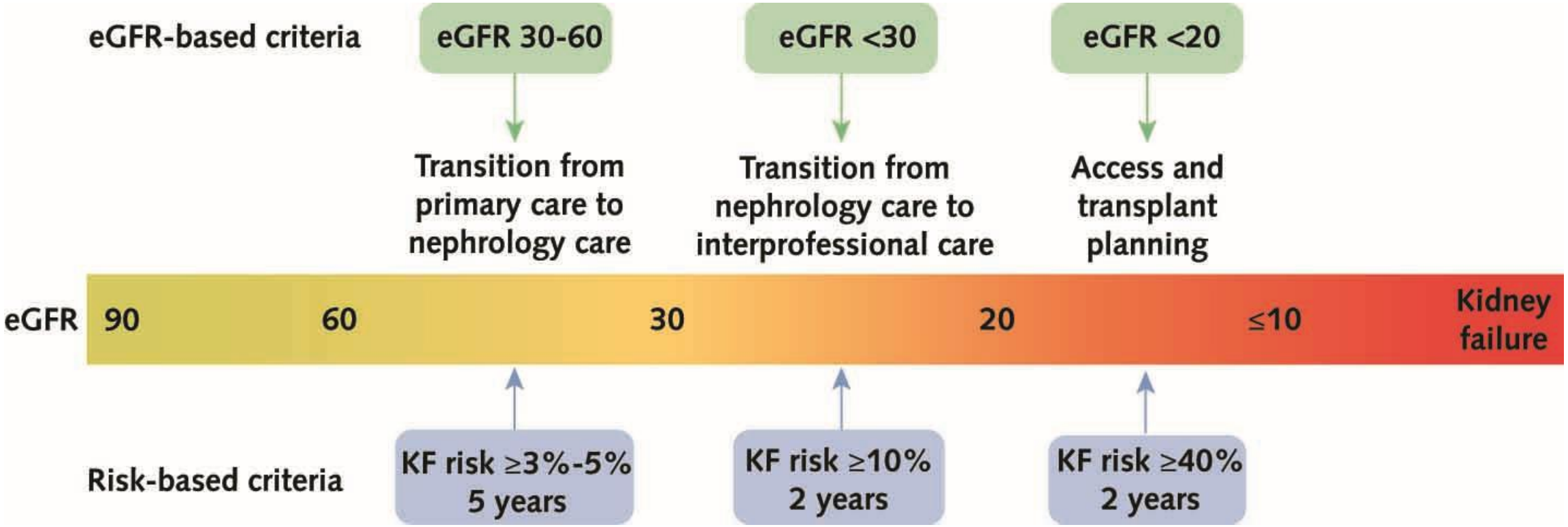
Albuminuria

UACR **180** mg/g

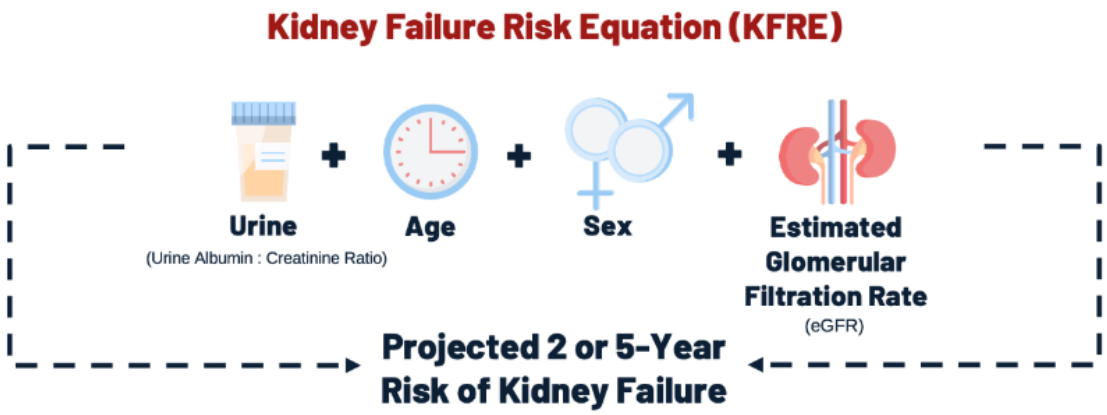
Emerging Complications

- K+: **5.7** mEq/L
- Hgb: **10.8** g/dL
- BP: **145/90** mmHg

Transition from an eGFR-based to a risk-based approach to chronic kidney disease care



The Kidney Failure Risk Equation

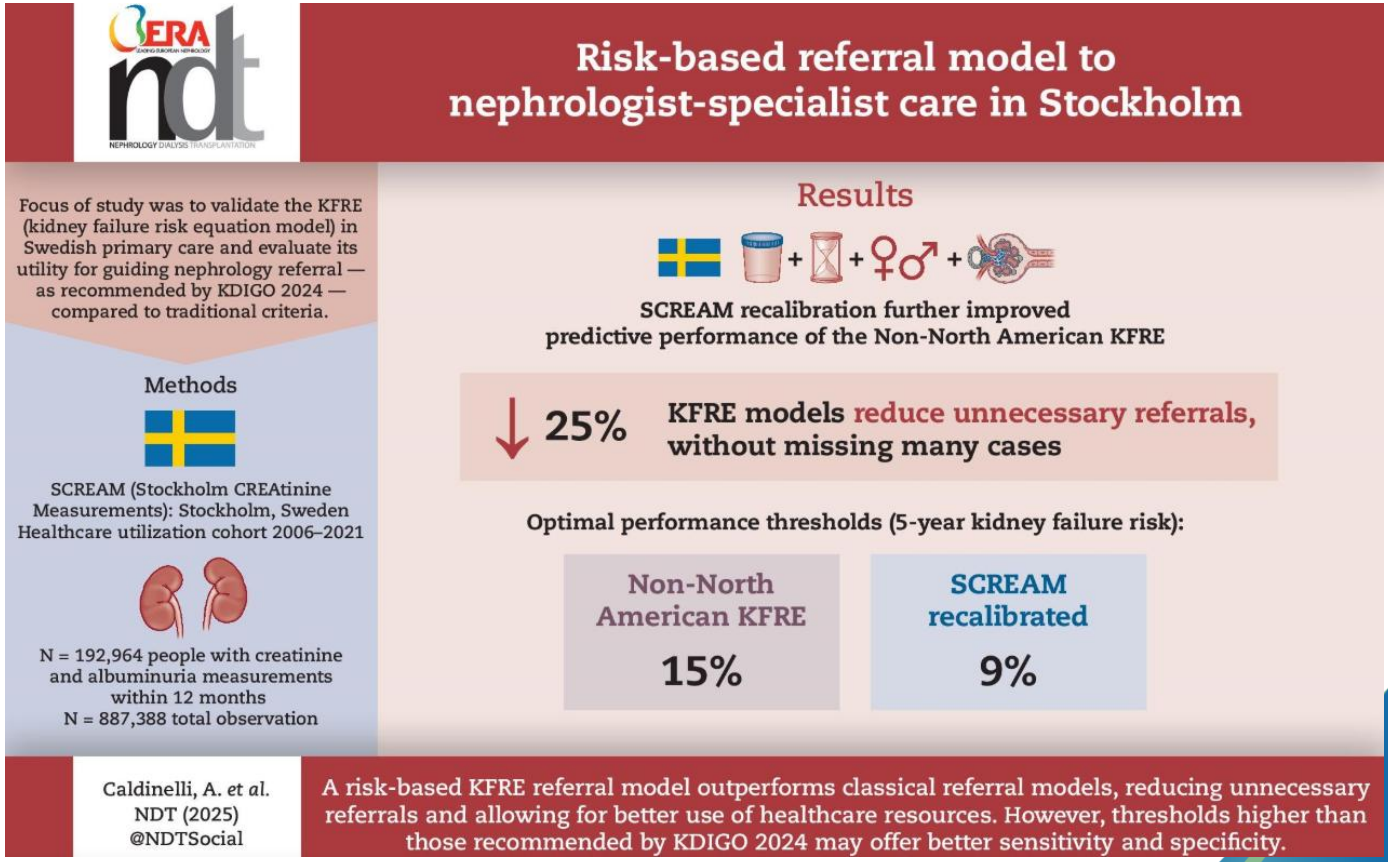


5-year kidney failure risk 3–5%
→ consider nephrology referral

2-year kidney failure risk >10%
→ start multidisciplinary care

2-year kidney failure risk >40% → plan for KRT (modality education, access, transplant referral)

transplant



Predicted risk of kidney failure and 40% decline in eGFR – risk thresholds for individualized care

Same eGFR, very different KFRE risk

Patient A

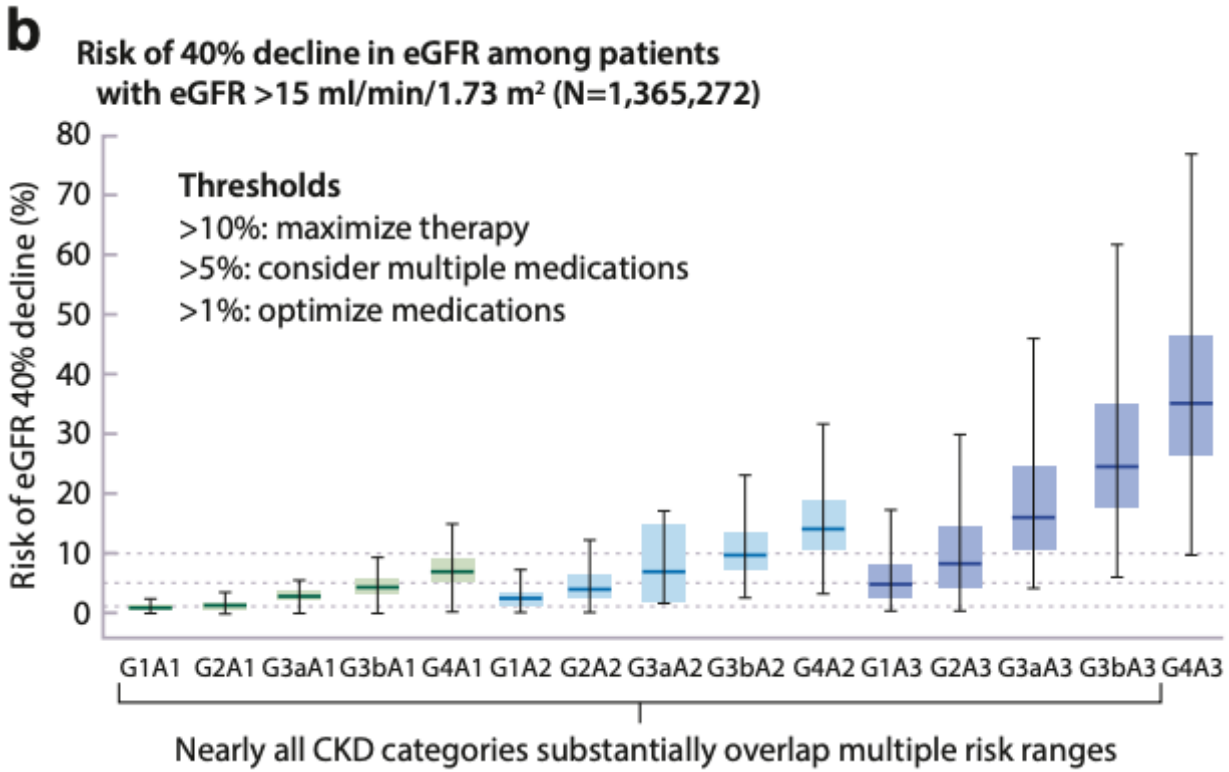
- eGFR 28
- Albumin 100 mg/g
- Female, 79 yrs

2-yr risk 3.5%
5-yr risk 10%

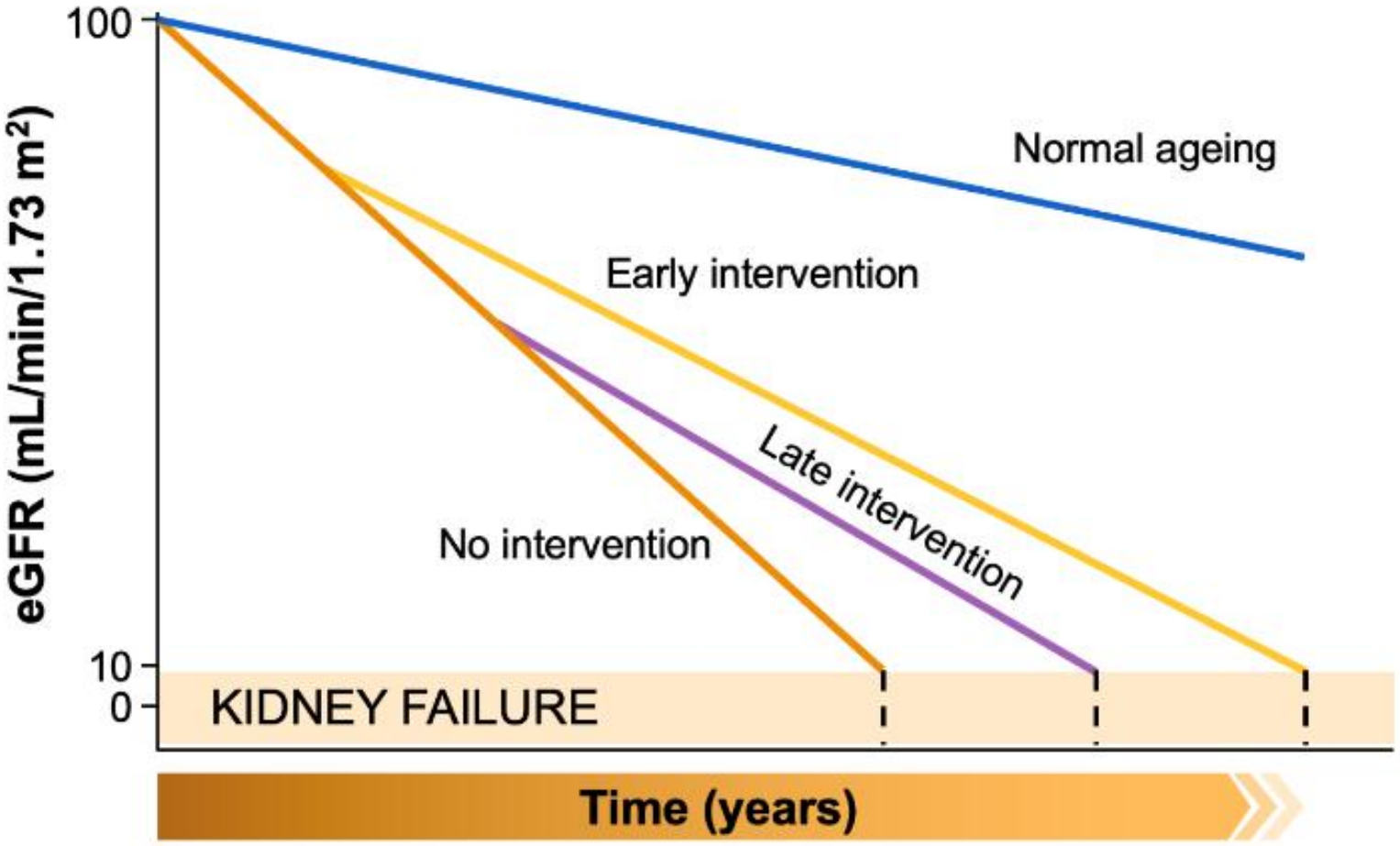
Patient B

- eGFR 28
- Albumin 780 mg/g
- Male, 71 yrs

2-yr risk 12.7%
5-yr risk 34.6%



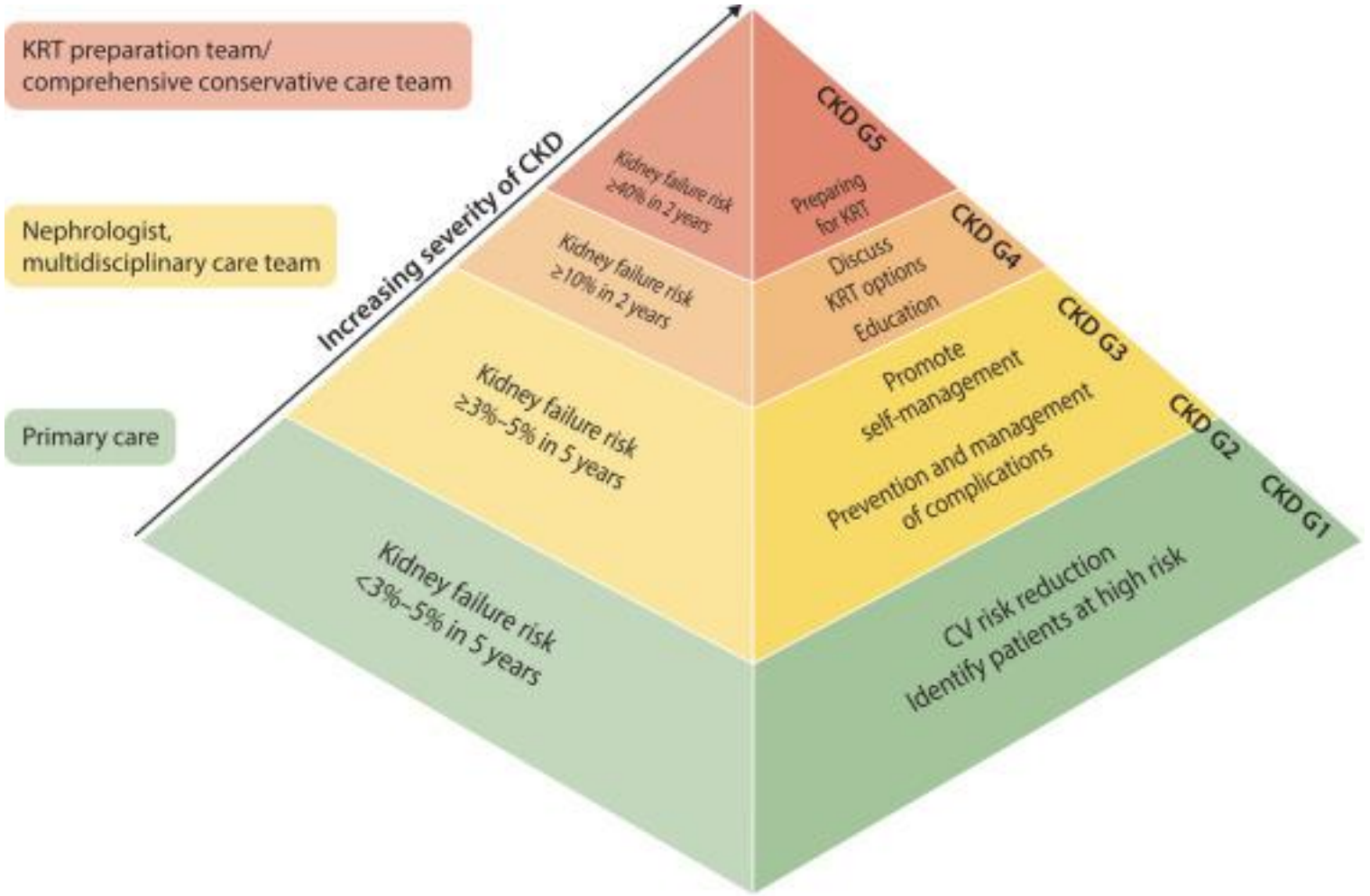
Effect of early intervention on the trajectory of CKD compared with normal aging



Other indications for Nephrology referral

- Urine albumin-to-creatinine ratio > 300 mg/g, including nephrotic syndrome
- Hematuria that is not secondary to urologic conditions
- Inability to identify a presumed cause of CKD
- eGFR decline of > 30% in less than 4 months without an obvious explanation
- Difficult-to-manage complications
- Serum potassium > 5.5 mEq/L
- Difficult-to-manage drug complications
- Resistant hypertension
- Recurrent or extensive nephrolithiasis
- Hereditary kidney disease

Optimal care model by increasing severity of chronic kidney disease



From Waiting to Acting: Your Proactive Strategy

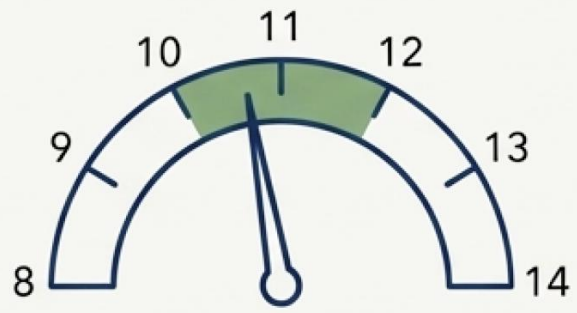
1. Aggressive Pharmacotherapy

2. Proactive Complication Management

3. Strategic Future-Proofing

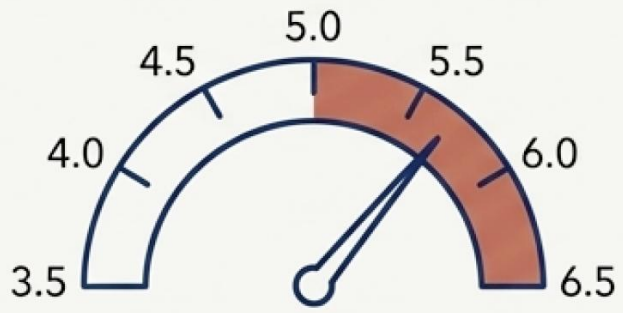
Managing common complications

ANEMIA (Hgb 10.8)



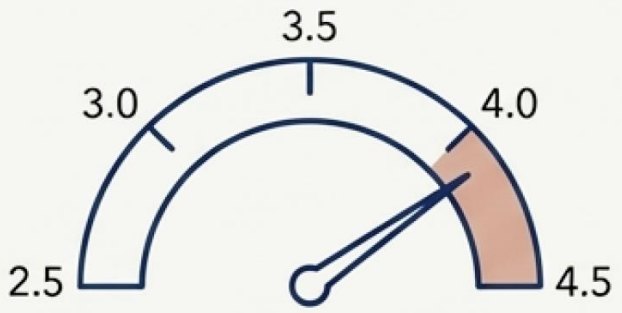
- **Assess:** Check iron studies first.
- **Act:** Replete iron if deficient before considering an ESA.
- **Target:** Hgb **10-12 g/dL**.

HYPERKALEMIA (K+ 5.7)



- **Assess:** Review diet for high-potassium foods.
- **Act:** Counsel on K+ restriction *to enable* RAASi titration.
- **Target:** Keep K+ **<6.0 mEq/L**.

CKD-MBD (Phos 4.1)



- **Assess:** Monitor Phosphate, Calcium, PTH every 3-6 months.
- **Act:** Initiate dietary phosphate counseling.
- **Target:** Keep phosphate in the normal range.

Planning for the future

Now
(eGFR >20)

Future
(ESRD/Transplant)

Vaccinate Now (Immune response is better pre-uremia)

- **Hepatitis B Series:** Use the double-dose (40 mcg) formulation.

- **Pneumococcal:** PCV20.

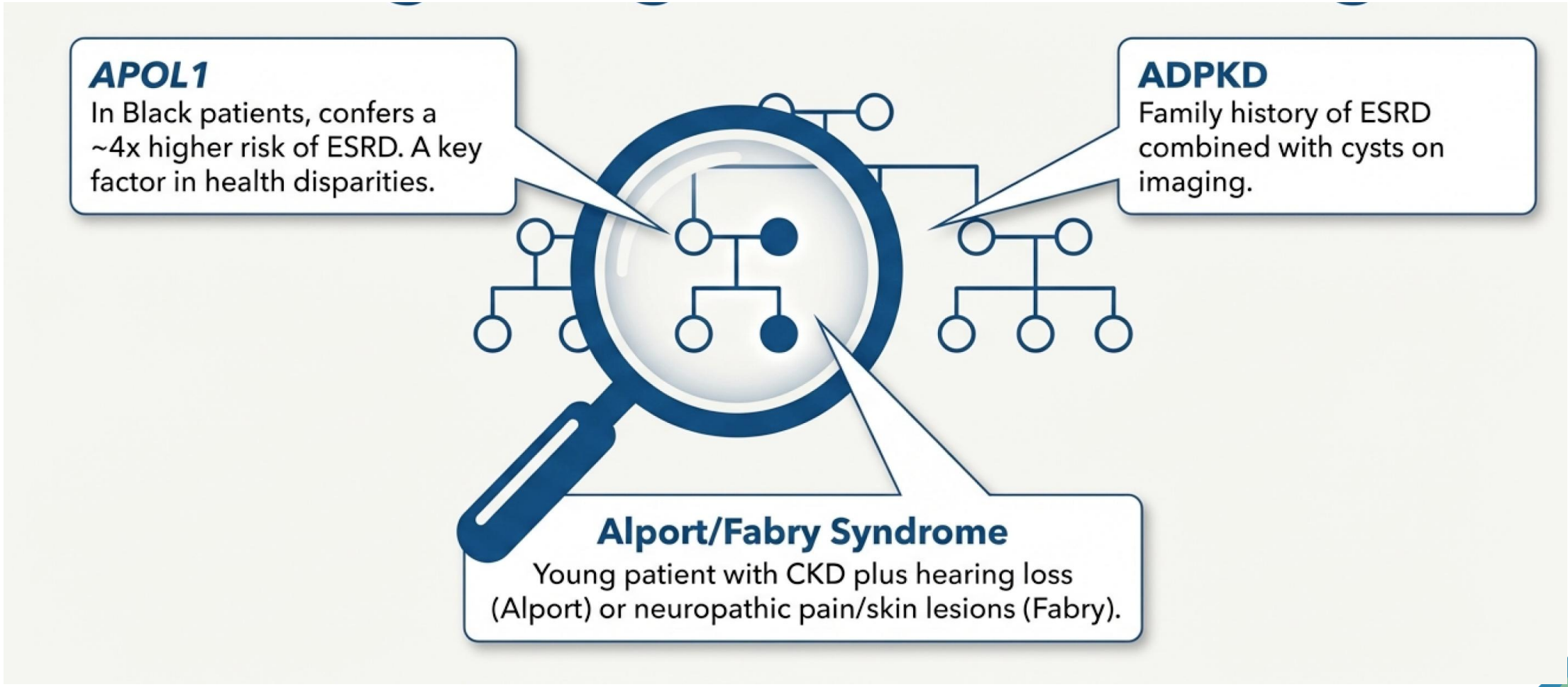
- **Annual:** Influenza & updated COVID-19.

Plan for Transplant Early (The evaluation takes months)

- Refer to Transplant Center when eGFR approaches 20-25.

- Discuss Living Donor Options with the patient and family.

Recognizing Genetic CKD – history if key



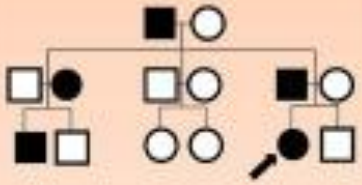
What increases the diagnostic yield of genetic testing?

Young age of onset

Examples:

- Nephrotic syndrome
- Microscopic hematuria
- CKD
- HTN/electrolyte abnormalities

Strong family history



Examples:

- ADPKD
- Alport syndrome
- Young onset of ESKD

Cystic/anatomic abnormalities

Examples:

- Multiple renal/hepatic cysts
- CAKUT

CKD of unclear etiology

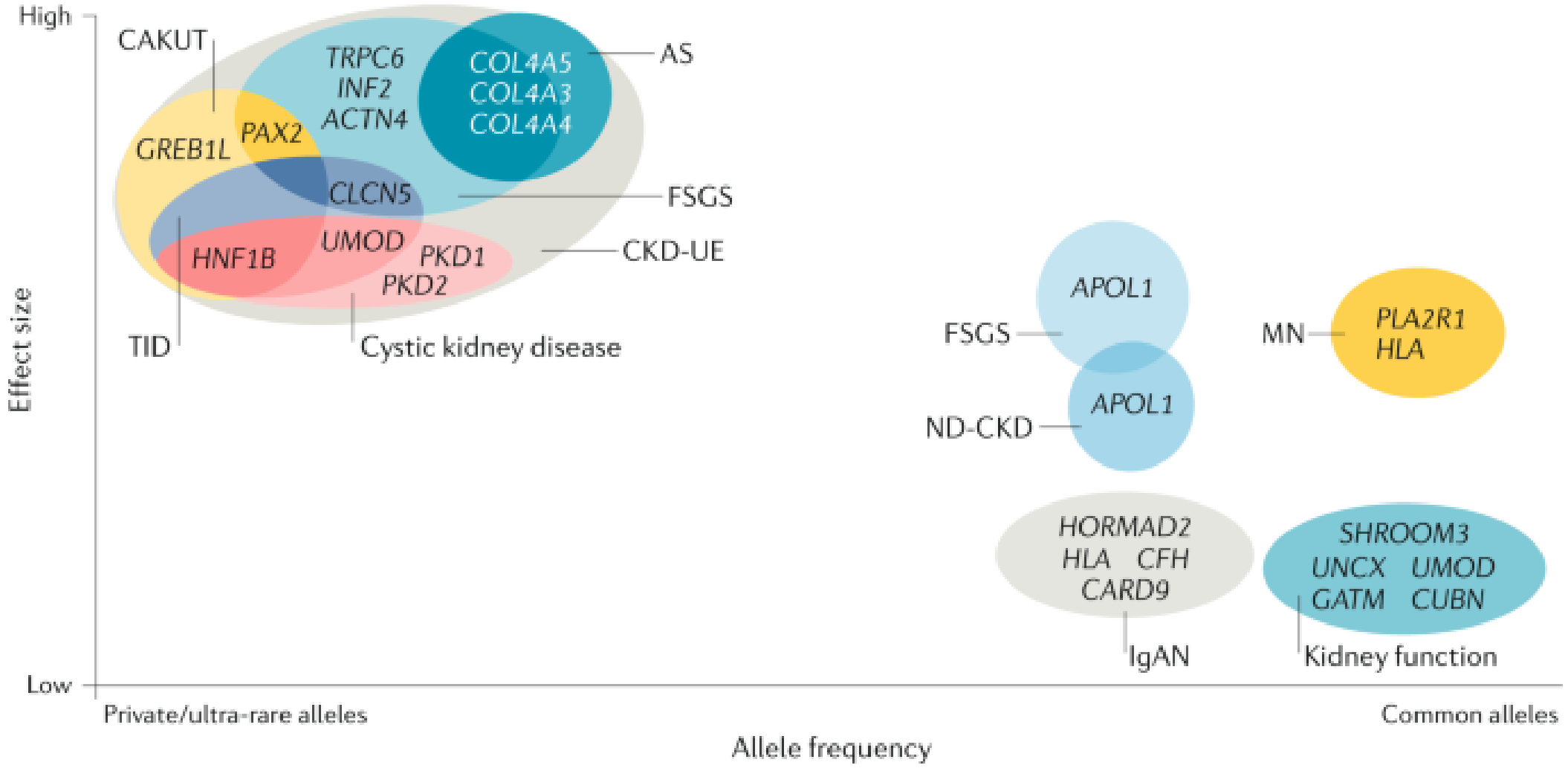
Examples:

- No diagnosis despite thorough work up
- Tubulointerstitial disease of unclear cause (ADTKD)

Extrarenal manifestations

Examples:

- Liver cysts
- Developmental delay
- Skeletal abnormalities
- Vision/hearing loss



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Know Your Patients
A Companion Resource for Healthcare Professionals

This guide is designed for clinicians evaluating individuals at risk for kidney disease as this resource emphasizes the importance of timely detection of kidney disease and clear patient communication. Delayed diagnoses of kidney disease are common, and early intervention enables access to treatments that can preserve kidney function.

SCREENING HEALTH HISTORY AND LIFESTYLE

- ☐ Obtain health history and family history of kidney disease
- ☐ Screen for high-risk conditions: diabetes, hypertension, cardiovascular disease, obesity, autoimmune disease
- ☐ Assess lifestyle with diet, physical activity, tobacco use, medications
- ☐ Evaluate social determinants of health including access to care and food security

LABS

- ☐ Basic metabolic panel (creatinine trend, potassium, phosphorus, and eGFR using CKD-EPI without race)
- ☐ Cystatin C: older adults, or high/low muscle mass, amputee
- ☐ Urinalysis for specific gravity, blood, protein, infection
- ☐ Urine Albumin-to-Creatinine Ratio (UACR): obtain for patients at risk for kidney disease such as diabetes, high blood pressure, cardiovascular disease, family history of kidney disease
- ☐ Complete Blood Count to evaluate for anemia
- ☐ Hemoglobin A1C
- ☐ Lipid Panel

RADIOLOGY

- ☐ Kidney ultrasound to evaluate kidney anatomy, obstruction, stones (obtain doppler if possible)

ESTABLISH MONITORING INTERVAL

- ☐ Monitor for anemia, acidosis, gout, mineral bone disease
- ☐ Interval monitoring of UACR and eGFR trends
- ☐ Medication adjustment as kidney function changes

REFERRAL AND CARE COORDINATION

- ☐ GFR< 45, significant decline in GFR for age, albuminuria, microscopic hematuria, changes in symptoms, or management of CKD complications
- ☐ Coordinate PCP, endocrinology, cardiology, and dietitian
- ☐ Nephrology referral for genetic counseling and testing for patients with early-onset CKD or family history

PATIENT ENGAGEMENT AND COMMUNICATION

- ☐ Ensure patient understanding of key findings and treatment follow-up plan
- ☐ Address any concerns with insurance, accessing medicines, and transportation - consult with social work

Professional Resources: Research Resources | Accredited Activities

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THANK YOU

Pranav Garimella, MD, MPH
Chief Medical Officer, American Kidney Fund