

Shifting gear in chronic kidney disease prevention!



PREVENTCKD is a two-year project (March 2023 – March 2025, contract number 101101220) that is co-funded by the European Union. The project is an acknowledgement of the urgent need to create awareness for the high negative impact of **Chronic Kidney Disease (CKD)** on people, planet and costs.

The project focused on the need for prevention and early detection of CKD. The objectives of the project are as follows:

Increase awareness on the characteristics, implications and impact of CKD at EU population level and EU policy level.

Preventing CKD from developing.

Screening population at risk.

Stimulate health-management for people with kidney disease prior to the stage necessitating kidney replacement therapy.

A consortium of the following organisations, lead and coordinated by EKHA, collaborated to achieve these objectives.



This document contains a summary of the of the output of the project related to the objectives of the project:

CKD in Europe

Ways of Preventing CKD

A kidney health code stating 12 risks factors for Chronic Kidney Disease

Screening methods for CKD

Best practises analysis of prevention initiatives on CKD in Europe

More information on the projects results can be found at <https://ekha.eu/preventing-ckd/>

In 2025 the consortium will also launch a website: www.kidneyhealthcode.eu

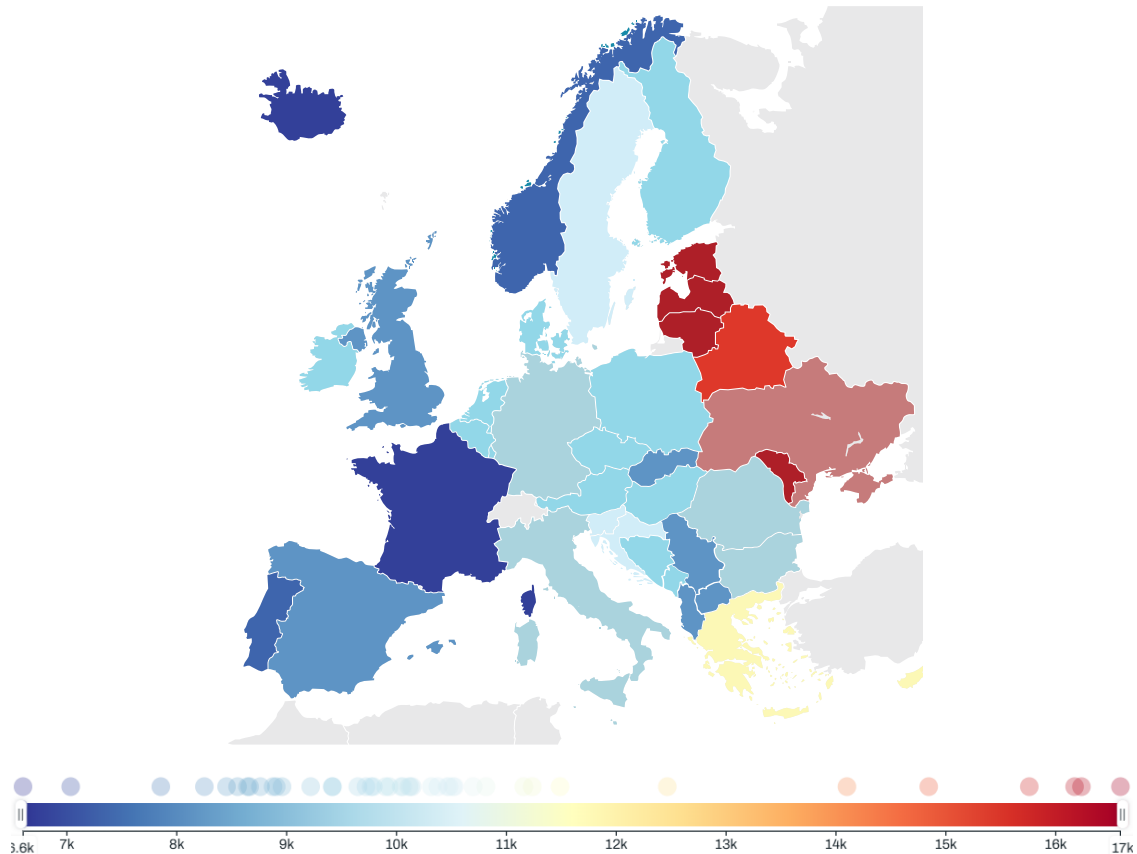
The European Kidney Health Code provides information for healthcare professionals on actions individual citizens can take to help prevent Chronic Kidney Diseases. Successful prevention requires these individual actions to be supported by governmental policy and actions.

The consortium partners will continue to collaborate to enhance prevention and early detection of CKD. If you would like to join this collaboration, please contact Eveline Scheres via eveline.scheres@ekha.eu



Co-funded by
the European Union

CKD in Europe



Chronic Kidney Disease (CKD) is estimated to affect close to **100 million people** in Europe (>10%).¹

Over **0.5 million individuals** are on dialysis or living with a functioning kidney graft.²

CKD prevalence is higher in **Eastern than in Western European** countries, and there are **heterogeneities** in dialysis and transplant access.³

CKD is estimated to become the **5th cause of premature death by 2050**.⁴

More than 60% of the people living with CKD are unaware of their condition.⁵

The main cause of CKD is **diabetes mellitus**.⁶

The best approach for CKD is **prevention**.⁷

1. Vanholder R. Clin Kidney J. 2021 Apr 20;14(7):1719-1730.

2. Boenink R. Clin Kidney J, 2024; sfae405

3. Cordero L. Clin Kidney J. 2024 May 21;17(7):sfae155.

4. GBD 2021 Forecasting Collaborators. Lancet. 2024 May 18;403(10440):2204-2256.

5. Tangri N. BMJ Open. 2023 May 22;13(5):e067386.







6. <https://vizhub.healthdata.org/gbd-results?params=gbd-api-2021-permalink/05a03b7871ebcfc22bf4c9743f73e039>

7. Fernández-Fernandez B. Clin Kidney J. 2023 Jun 16;16(8):1187-1198.

Ways of preventing kidney disease

EARLY DETECTION

Especially in case of :





-    Diabetes
-  Hypertension
-  Obesity
-  Age >50 years

HEALTHY LIFESTYLE


-  Avoid toxics
-  Healthy food
-  Regular exercise
-  Hydration



SELF-EMPOWERMENT

-  Education
-  Communication
-  Social support
-  Vaccination

COMPLIANCE

-  Diagnostic tests
-  Visits
-  Diet
-  Treatment

European Kidney Health Code

12 risk factors for chronic kidney diseases

Lifestyle Choices, Biological and Social Factors

- 1 Unhealthy lifestyle
- 2 Age and gender
- 3 Harmful substances
- 4 Barriers to good health

Kidney-Damaging Conditions and Diseases

- 5 Lifestyle-related chronic diseases
- 6 Prenatal & early life factors
- 7 Conditions affecting the urinary system
- 8 Living with one kidney
- 9 Acute kidney injury

Kidney-Replacement Therapies

- 10 Treatment adherence
- 11 Waiting for a kidney transplantation
- 12 Kidney replacement therapy-related complications

Slow down this silent, high burden disease!

- Serious prevention of kidney disease through awareness raising campaigns and education on lifestyle choices, can help reduce the number of people living with kidney disease and its rapid rise in the top ten of causes of death.
- Signs of kidney damage manifest (too) late. Early detection via existing simple and cheap tests is key!
- Increase access to medication and treatments that slow down the disease.
- Invest in innovative kidney replacement therapies that enhance quality of life and lower the CO₂ footprint and high costs of therapies.

The European Kidney Health Code provides information for healthcare professionals on actions individual citizens can take to help prevent Chronic Kidney Diseases. Successful prevention requires these individual actions to be supported by governmental policy and actions. This project is co-financed by the European Union and coordinated by the EKHA contract number 101101220.

European Kidney Health Code

English

European Kidney Health Code

Lifestyle Choices, Biological and Social Factors

1. Unhealthy lifestyle
2. Age and gender
3. Harmful substances
4. Barriers to good health

Kidney-Damaging Conditions and Diseases

5. Chronic diseases
6. Prenatal & early life factors
7. Conditions affecting the urinary system
8. Living with one kidney
9. Acute kidney injury

Kidney-Replacement Therapies

10. Treatment adherence
11. Waiting for a kidney transplantation
12. Kidney replacement therapy-related complications

WAYS TO PREVENT CHRONIC KIDNEY DISEASE (CKD)

Español

Código Europeo de Salud Renal

Elecciones de estilo de vida, factores biológicos y sociales

1. Estilo de vida poco saludable
2. Edad y sexo
3. Sustancias nocivas
4. Barreras para una buena salud

Afecciones y enfermedades que dañan los riñones

5. Enfermedades crónicas
6. Factores prenatales y en los primeros años de vida
7. Afecciones que afectan al sistema urinario
8. Vivir con un solo riñón
9. Fallo renal agudo

Tratamiento renal sustitutivo

10. Adherencia al tratamiento
11. A la espera del trasplante
12. Complicaciones relacionadas con la terapia de reemplazo renal

FORMAS DE PREVENIR LA ENFERMEDAD RENAL CRÓNICA (ERC)

Polski

Europejski Kodeks Zdrowia Nerek

Wybory stylu życia, czynniki biologiczne i społeczne

1. Niezdrowy tryb życia
2. Wiek i płeć
3. Substancje szkodliwe
4. Bariery dobrego zdrowia

Stany i choroby uszkadzające nerki

5. Choroby przewlekłe
6. Czynniki prenatalne i wczesne życie
7. Schorzenia układu moczowego
8. Życie z jedną nerką
9. Ostre uszkodzenie nerek

Terapie zastępcze nerek

10. Przestrzeganie leczenia
11. Oczekiwanie na przeszczep nerki
12. Powikłania związane z terapią zastępczą nerki

SPOSOBY ZAPOBIEGANIA PRZEWLEKŁEJ CHOROBY NEREK (PCN)

Deutsch

Europäischer Nierengesundheitskodex

Lebensstilentscheidungen, biologische und soziale Faktoren

1. Ungesunder Lebensstil
2. Alter und Geschlecht
3. Schadstoffe
4. Hindernisse für eine gute Gesundheit

Nierenschädigende Verhältnisse und Krankheiten

5. Chronische Krankheiten
6. Pränatale und frühe Lebensfaktoren
7. Erkrankungen des Harnsystems
8. Leben mit einer Niere
9. Akute Nierenschädigung

Nierenersatztherapien

10. Einhaltung der Behandlung
11. Warten auf eine Nierentransplantation
12. Komplikationen im Zusammenhang mit der Nierenersatztherapie

MÖGLICHKEITEN ZUR VORBEUGUNG EINER CHRONISCHEN NIERENERKRANKUNG (CNK)

Français

Code Européen pour la Santé Rénale

Modes de mode de vie, facteurs biologiques et sociaux

1. Modes de vie malsain
2. Âge et sexe
3. Substances nocives
4. Obstacles à une bonne santé

Affections et maladies endommageant les reins

5. Maladies chroniques
6. Facteurs prénataux et de la petite enfance
7. Affections du système urinaire
8. Vivre avec un seul rein
9. Insuffisance rénale aiguë

Thérapies de remplacement rénal

10. Observance du traitement
11. Attendre une greffe de rein
12. Complications liées à la thérapie de remplacement rénal

FAÇONS DE PRÉVENIR LA MALADIE RÉNALE CHRONIQUE (MRC)

Nederlands

Europese Code voor de Niergezondheid

Leefstijlkeuzes, biologische en sociale factoren

1. Ongezonde levensstijl
2. Leeftijd en geslacht
3. Schadelijke stoffen
4. Belemmering en voor een goede gezondheid

Nierbeschadigende aandoeningen en ziekten

5. Chronische ziekten
6. Prenatale en vroege levensfactoren
7. Aandoeningen die van invloed zijn op de urinewegen
8. Leven met één nier
9. Acuut nierletsel

Niervervangende therapieën

10. Therapietrouw
11. Wachten op niertransplantatie
12. Complicaties in verband met niervervangende therapie

MANIEREN OM CHRONISCHE NIERSCHADE TE VOORKOMEN (CNS)

Screening for CKD

1. SCREENING BASED ON GUIDELINES

Systematic cardiovascular risk assessment, including eGFR and albuminuria (ABCDE), is recommended in individuals with any major vascular risk factor, in men >40 and in women >50 years of age.

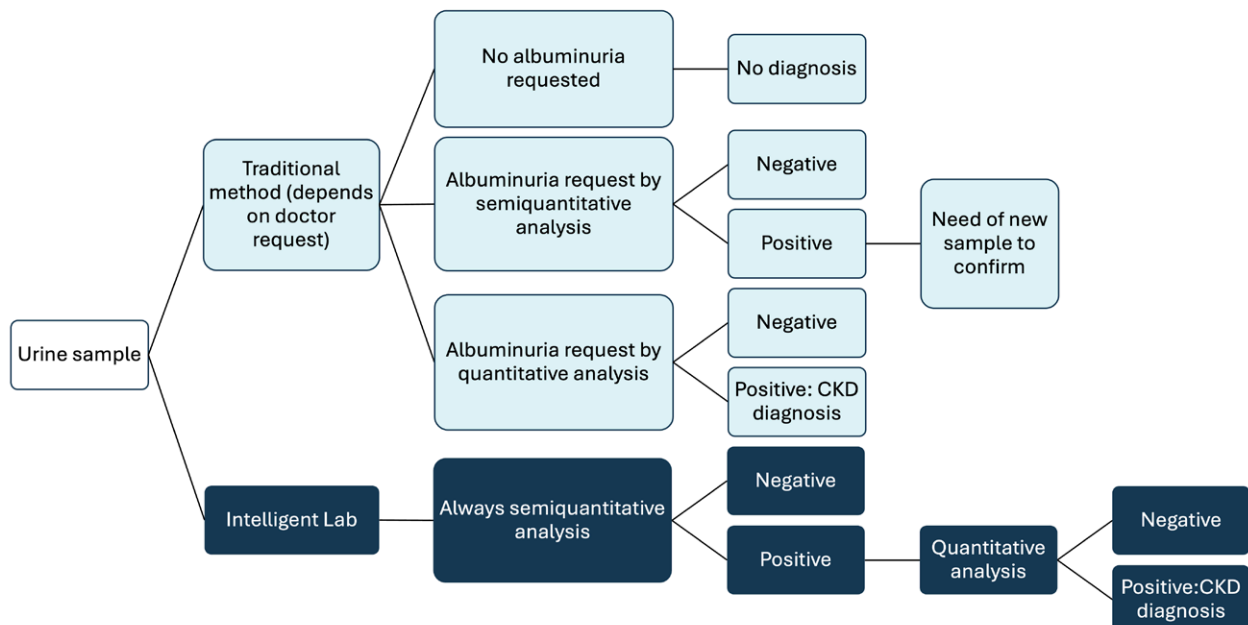
Visseren FLJ, Eur Heart J. g 2021 Sep 7;42(34):3227-3337.

Recommendations for CVD risk assessment

Recommendations	Class ^a	Level ^b
Systematic global CVD risk assessment is recommended in individuals with any major vascular risk factor (i.e. family history of premature CVD, FH, CVD risk factors such as smoking, arterial hypertension, DM, raised lipid level, obesity or comorbidities increasing CVD risk).	I	C
Systematic or opportunistic CV risk assessment in the general population in men >40 years of age and in women >50 years of age or postmenopausal with no known ASCVD risk factors may be considered ⁹	IIb	C

2. OPPORTUNISTIC SCREENING

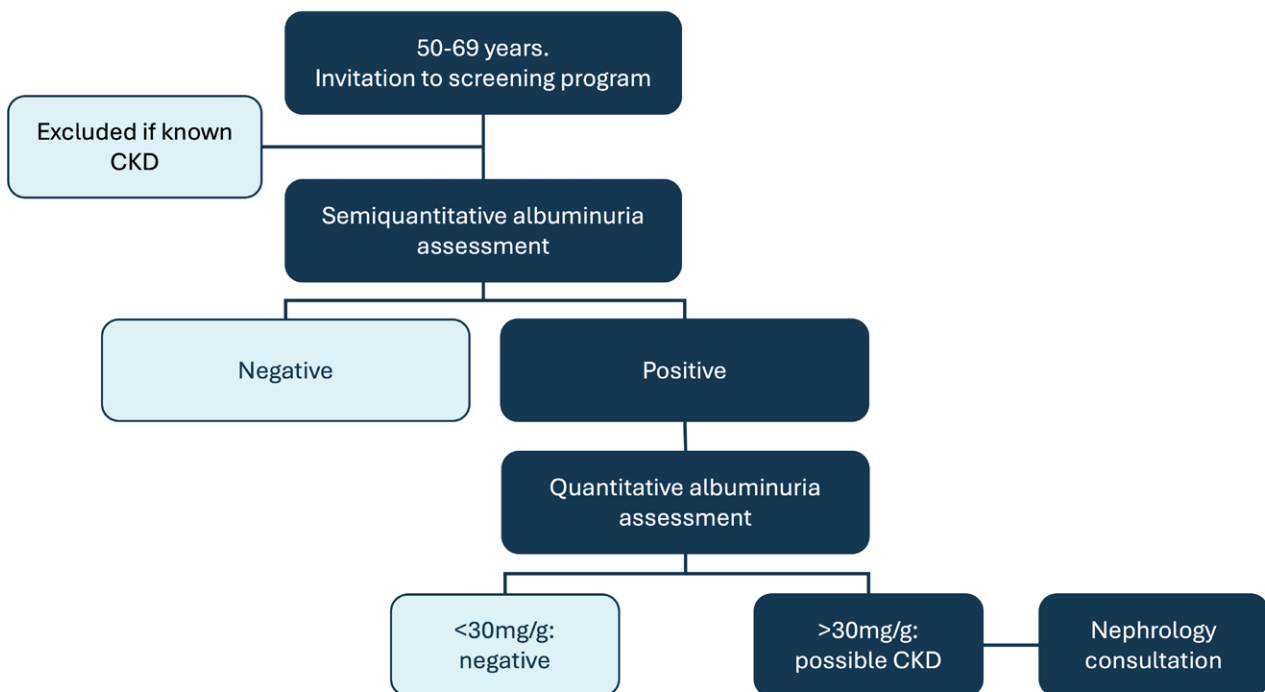
Intelligent Lab automatically quantifies albuminuria when receiving a urine sample of a patient who should have albuminuria measured according to clinical guidelines, even if the doctor hasn't requested it.



Screening for CKD

3. POPULATION SCREENING: PREVE-RENAL

Systematic CKD screening program based on albuminuria assessment in a single urine sample in imitation to coloncancer screening program (stool test), although cheaper and noninvasive.



Best practices analysis

The PREVENTCKD consortium conducted the initial compilation using various key tools and methods

SOURCES FOR BEST PRACTICES



- EU best practices portal
- PubMed
- Google Scholar
- consensus AI
- Stakeholder's websites
- Partner's database

SELECTION CRITERIA



- Primary or secondary prevention initiatives on CKD
- Early detection or diagnosis initiatives, including population screening actions, with preference for those that have defined the results obtained.
- Actions that were replicable in different environments and situations.
- Studies, campaigns, initiatives that could demonstrate impact in their environments
- Actions that would delay the progression of CKD
- Early education initiatives for chronic kidney patients in the initial stages
- Identification of biomarkers for early diagnosis of CKD
- Early treatment and management of CKD

RESULTS



The 104 initiatives were compiled into 6 groups:

- Group 1: scientific researches (RCT and non-RCT trials) and editorials.
- Group 2: clinical guides, handbooks and consensus protocols.
- Group 3: reports, bibliographic reviews.
- Group 4: awareness campaigns, actions with policymakers and other awareness activities.
- Group 5: educational programs, apps, websites, brochures, etc.
- Group 6: strategic documents, epidemiological researches and other organizational documents.

CONCLUSIONS



- CKD has risk factors and the underlying diseases that can cause it
- CKD has two very effective measures to calculate the state of the kidneys: the calculation of the albumin/creatinine/urea ratio and the estimation of the glomerular filtration rate.
- Tests determine key measurements are accessible to professionals: a simple urine analysis and a simple blood test
- Both tests are very cheap and affordable for any health system



- Lack of data about how people in risk perceive their risk, how to promote healthy habits, follow the medical recommendations, prescriptions...
- Lack of clear and integral guidelines for healthy lifestyle
- Lack of data about how affects emotional, coping styles, resilience etc. in adherence and healthy habits (nutrition and physical activity)
- Lack of data about the outcomes in awareness campaigns and actions with Policymakers
- Lack of real data in early stages of CKD (from Stage 1 to 4)



PREVENTCKD

PRISMA

flow diagram

IDENTIFICATION OF STUDIES VIA REGISTERS/DATABASES

Records identified from*:
Databases (n = 3)
EU BP Portal (n=9)
Pubmed (n=2.650)
Google Scholar (n=2.324)
Registers (n = 1)
Partners (n=34)

Records screened (Abstracts)
(n = 1.457)

Reports assessed for eligibility
(n = 1.042)

IDENTIFICATION OF STUDIES VIA OTHER METHODS

Records identified from:
Websites (n = 428)
Organisations (n = 32)

Reports assessed for eligibility
(n = 460)

Records removed before screening:
Duplicate records removed
(n = 3.282)
Records removed for other reasons (n = 278)

Records excluded
(n = 415)

Reports excluded:
Not focus on prevention or early detection (n = 527)
Focused only in a risk group (n = 245)
Dealt with specific treatments (n = 216)

Reports excluded:
Not focus on prevention or early detection (n = 287)
Focused only in a risk group (n = 16)
Dealt with specific treatments (n = 17)



**Studies included in review
(n = 54)
Reports of included studies
(n = 50)**

Impressum

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