

# Early Diagnosis Of Chronic Kidney Disease



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## Introduction

Chronic Kidney disease (CKD) is a global health problem. The exact number of people with CKD is world widely unknown. There is a rising incidence and prevalence of CKD in the United States. In 2014 alone, 120,688 thousand patients began their renal replacement therapy program in the country. The rising of prevalence of people with CKD in a renal replacement therapy program can be attributed, mainly, to the number of patients who begin their therapy every year, and secondly, to the rise of patients who survive terminal chronic kidney diseases. According to the Brazilian Society of Nephrology, there is an increasing rise of renal replacement therapy programs in Brazil. This increase goes from 150pmp in 1994 to 596pmp in 2016 [1]. This year the number of patients under renal replacement therapy was 122.825 [1]. Unfortunately, renal disease, which has worldwide high prevalence, is under diagnosed and/or undertreated resulting in loss opportunities for prevention [2-4].

## Definition of CKD

The work of the National Kidney Foundation –Kidney Disease Improving Global Outcomes (NKF-KDIGO) defined chronic renal disease in the following way, which has been world widely accepted:

- o Presence of renal damage markers for over 3 months, defined structured or functional kidney abnormalities, with or without the decrease of the Glomerular filtration rate (GFR), which can lower the GRE, manifested by any pathological abnormalities or renal damage, including blood or urine composition alterations, or image exam alterations.

Or

- o Presence of GFR <60ml/min/1,73m<sup>2</sup> for over the period of 3 months, with or without other signs of renal damage listed previously.

## Screening Chronic Kidney Disease

The guidelines given by NKF-KDIGO for CKD recommend that all individuals who look for health plans must be checked up in order to verify risks of developing renal disease [5-7].

In general, the presence of the following risk factors for CKD must encourage laboratorial tests for renal disease detection:

- o Diabetes mellitus background, arterial hypertension, cardiovascular disease, dyslipidemia, obesity, metabolic syndrome, HIV or hepatitis C infection and neoplasms.
- o Family history of CKD.
- o Older than 60 years old.
- o Use of nephrotoxic drugs.

Of the factors listed above, diabetes background and cardiovascular disease represent the highest risks of developing CKD [7].

Simple tests like urine or protein/creatinine relation analysis in a casual urine sample and serum creatinine levels are effective in screening for CKD. Screening for hematuria should be performed in populations with increased risk for glomerulonephritis [7].

## SCORED - Screening for Occult Renal Disease

SCORED is a new model of chronic kidney disease screening, recently used to identify individuals with high probability for prevalent CKD. This systematic method elaborated from data collected through NHANES 1999-2000 and 2001-2002. SCORED ponders common variables associated with chronic kidney diseases and can be useful to identify individuals with high probability for occult renal disease in general population [8]. Individuals who obtained a score of  $\geq 4$  points classify as high risk for CKD and those with lower scores, as low risk of CKD.

Table 1 summarizes the variables analyzed using Scored and their respective scores [9].

**Table 1:** Risk variables for CKD [9].

Variables	Presence	Points
Age between 50 and 59	Yes	2
Age between 60 and 70	Yes	3
Age over 70	Yes	4
Woman	Yes	1
Anemic	Yes	1
Arterial Hypertension	Yes	1
Mellitus diabetes	Yes	1
AMI/CVA	Yes	1
CHF	Yes	1
Peripheral arterial disease	Yes	1
Proteinuria	Yes	1
AMI/CVA: Acute myocardial infarction/ Stroke		
CHF: Congestive heart failure		

**Conclusion**

SCORED can be useful in screening this disease in general population. Due to its easy applicability and low cost, it should be implemented among the health policies of basic attention and encourage doctors to use this tool as initial triage. After one could easily investigate CKD through serum dosage of creatinine, urine 1 sample with or without image exams.

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