



## CKD's epidemiology

CKD (Chronic Kidney Disease) is one of the global health concerns in noncommunicable disease.

CKD is a condition in which the kidney functions continue to decline.

If left untreated, it can lead to kidney failure and eventually “dialysis therapy” or “kidney transplantation”.

However, damage to the kidney progresses with little or no symptoms.

## Global Prevalence and Deaths of CKD in 2017<sup>1</sup>

	Prevalence	( 95% uncertainty interval )	Deaths	( 95% uncertainty interval )
<b>Global</b>	<b>697,509,472</b>	( 649,209,403 to 752,050,655 )	<b>1,230,168</b>	( 1,195,114 to 1,258,829 )
<b>China</b>	<b>132,324,202</b>	( 121,756,611 to 143,737,211 )	<b>175,891</b>	( 160,601 to 183,366 )
<b>India</b>	<b>115,069,914</b>	( 106,818,767 to 124,130,281 )	<b>223,821</b>	( 207,738 to 235,529 )
<b>USA</b>	<b>38,816,706</b>	( 36,156,443 to 41,956,816 )	<b>84,944</b>	( 83,154 to 86,756 )
<b>Indonesia</b>	<b>27,232,922</b>	( 25,084,990 to 29,398,099 )	<b>35,446</b>	( 33,322 to 38,551 )
<b>Russia</b>	<b>26,981,655</b>	( 24,997,909 to 29,311,266 )	<b>11,361</b>	( 11,135 to 11,621 )
<b>Japan</b>	<b>21,411,356</b>	( 19,946,798 to 23,210,020 )	<b>35,709</b>	( 33,921 to 38,263 )
<b>Vietnam</b>	<b>10,003,107</b>	( 9,262,628 to 10,787,589 )	<b>17,384</b>	( 15,393 to 19,609 )
<b>Thailand</b>	<b>9,560,638</b>	( 8,760,453 to 10,414,024 )	<b>21,922</b>	( 19,297 to 24,420 )
<b>Philippines</b>	<b>9,317,802</b>	( 8,615,652 to 10,028,481 )	<b>34,051</b>	( 30,042 to 38,555 )

1)THE LANCET, 395, 709-733, 2020

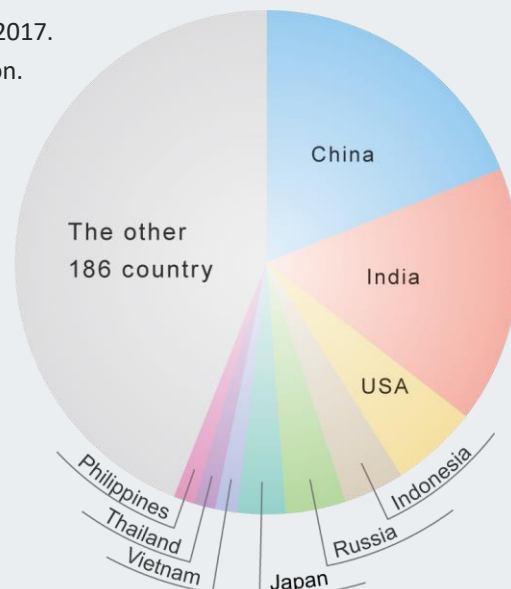
Indeed, globally there were **697.5 million** cases of CKD in 2017.

It was estimated as more than 9% of the world's population.

CKD is international disease, nowadays.

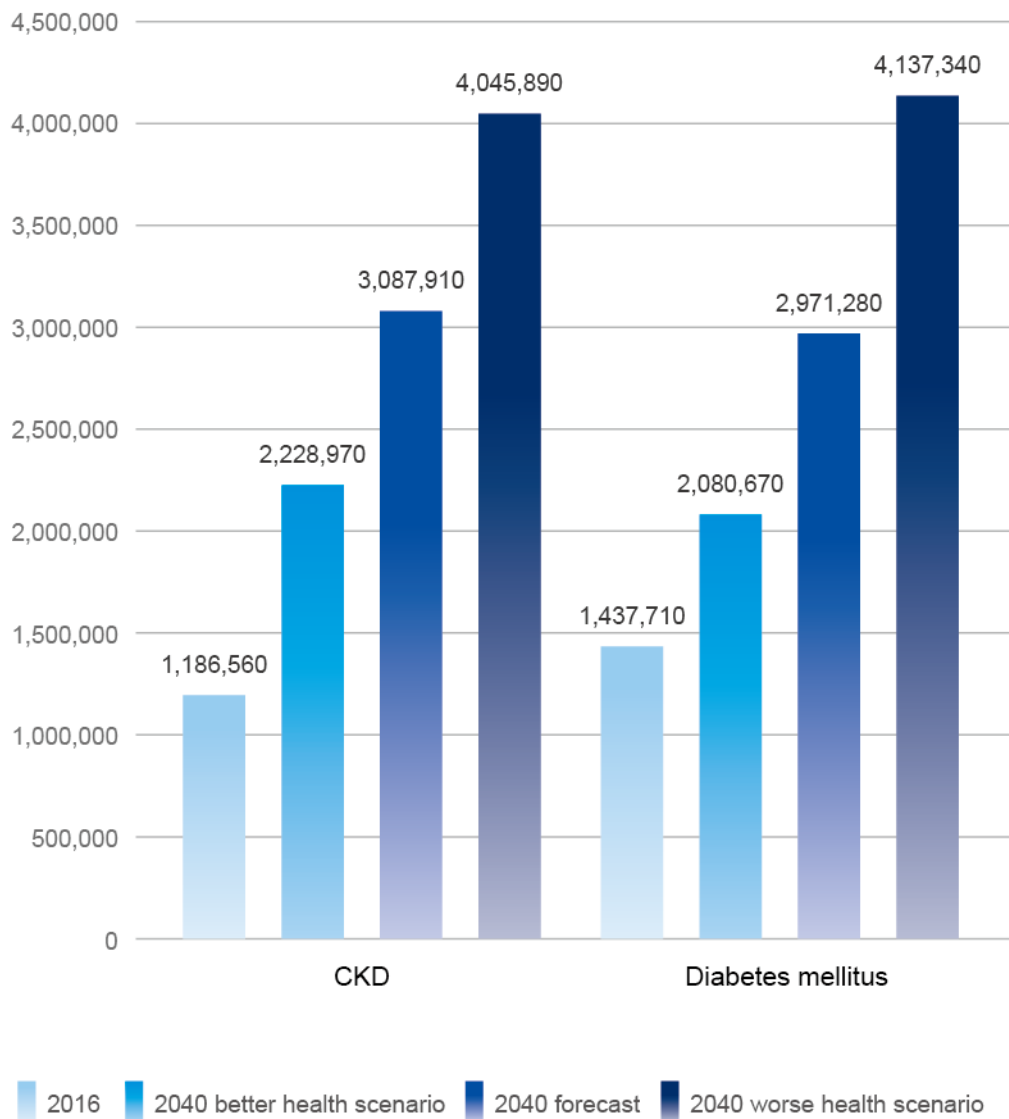


1 in 9 suffers from CKD.





## The number of global deaths in 2016 and 2040 forecast<sup>2</sup>



<sup>2</sup>THE LANCET, 392, 2052-2090, 2018

In recent years, the number of people who suffer from kidney deterioration has increased due to lifestyle-related disease such as diabetes, high blood pressure and obesity.

In the future, CKD will affect the world more than diabetes.



## Evaluation of CKD<sup>3</sup>

### Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012

				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
GFR categories (mL/min/1.73 m <sup>2</sup> ) Description and range	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			

■ low risk ( if no other markers of kidney disease, no CKD )  
■ moderately increased risk ■ high risk ■ very high risk

Serum creatinine and urinary albumin are important clinical markers for CKD. This guideline was developed by KDIGO, the global nonprofit organization.

GFR grade	G1	G2	G3a	G3b	G4	G5
eGFR value (mL/min/1.73m <sup>2</sup> )	≥90	60~89	45~59	30~44	15~29	<15
	Normal or high	Mildly decreased	Mildly to moderately decreased	Moderately to severely decreased	Severely decreased	Kidney failure
					Uremia	Dialysis or renal replacement



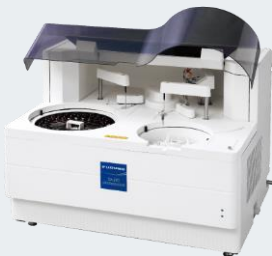
## Reagent Package Information

KDIGO 2012 Clinical Practice Guideline proposes usages of CREA and urinary albumin. Furuno offers complete line of reagents for all items of CKD diagnosis.

	Product Name	Product No.	FURUNO Analyzer	Configuration	
				R1	R2
	Creatinine PAP (Enzymatic)	CF16917080-F3	CA-270	3 × 60mL	3 × 20mL
		CF16917028-F3	CA-400 CA-800	3 × 20mL	3 × 8mL
	Creatinine Jaffe Kinetic fluid 5+1	CF05917084-F	CA-270 CA-400 CA-800	6 × 67mL	6 × 17mL
		CF05917084-F3		3 × 67mL	3 × 17mL
		CF05917084-F4		4 × 20mL	4 × 7mL
		CF05917084-F8		8 × 20mL	8 × 7mL
	Microalbumin	MF06917075-F	CA-270 CA-400 CA-800	1 × 65mL	1 × 10mL
	Protein CSF fluid Mono	PF03917067-F5	CA-270	5 × 67mL	-
		PF03917067-F16	CA-400 CA-800	16 × 20mL	-
	Protein CSF PGR	PF15917067-F5	CA-270	5 × 67mL	-
		PF15917067-F16	CA-400 CA-800	16 × 20mL	-

Reagents are manufactured by Centronic GmbH certified according to ISO13485.

## FURUNO Analyzers



Model: CA-270



Model: CA-400



Model: CA-800

\*Please check our web site (<https://www.furuno.com/en/medical>) for more details.



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