Chronical kidney disease Machine learning solution information

|  |  |
| --- | --- |
| **Abstract**: This dataset can be used to predict the chronic kidney disease and it can be collected from the hospital nearly 2 months of period. |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Data Set Characteristics:** | Multivariate | **Number of Instances:** | 400 | **Area:** | N/A |
| **Attribute Characteristics:** | Real | **Number of Attributes:** | 25 | **Date Donated** | 2015-07-03 |
| **Associated Tasks:** | Classification | **Missing Values?** | Yes | **Number of Web Hits:** | 157775 |

**Data Set Information**

1. age – age
2. bp - blood pressure
3. sg - specific gravity
4. al – albumin
5. su – sugar
6. rbc - red blood cells
7. pc - pus cell
8. pcc - pus cell clumps
9. ba – bacteria
10. bgr - blood glucose random
11. bu - blood urea
12. sc - serum creatinine
13. sod – sodium
14. pot – potassium
15. hemo – hemoglobin ------------------------------------okey/ in blood report
16. pcv - packed cell volume
17. wc - white blood cell count
18. rc - red blood cell count
19. htn – hypertension
20. dm - diabetes mellitus
21. cad - coronary artery disease
22. appet – appetite
23. pe - pedal edema
24. ane – anemia
25. class – class

**Attribute Information:**

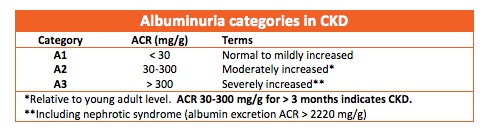
We use 24 + class = 25 ( 11 numeric ,14 nominal)

1.Age(numerical) -age in years  
2.Blood Pressure(numerical) -bp in mm/Hg

3.Specific Gravity(nominal) -sg - (1.005,1.010,1.015,1.020,1.025)  
4.Albumin(nominal) -al - (0,1,2,3,4,5)

Can find in the blood report

An albumin blood test measures the amount of albumin in your blood. Albumin is a protein made by your liver. Albumin helps keep fluid in your bloodstream so it doesn't leak into other tissues. It is also carries various substances throughout your body, including hormones, vitamins, and enzymes. Low albumin levels can indicate a problem with your liver or kidneys.

  
5.Sugar(nominal) -su - (0,1,2,3,4,5)  
6.Red Blood Cells(nominal) -rbc - (normal,abnormal)

7.Pus Cell (nominal) -pc - (normal,abnormal)

**Pus** is a whitish-yellow, yellow, or brown-yellow protein-rich fluid called liquor puris that accumulates at the site of an infection. It consists of a buildup of dead, white blood **cells** that form when the body's immune system responds to the infection.

8.Pus Cell clumps(nominal) -pcc - (present,notpresent)

Pyuria is a condition that occurs when excess white blood cells, or pus, are present in the urine. Pyuria causes [cloudy urine](https://www.verywellhealth.com/what-does-cloudy-urine-mean-3522280) and frequently indicates the presence of a [urinary tract infection](https://www.verywellhealth.com/urinary-tract-infections-overview-3520507) (UTI).1﻿ Pyuria can also indicate sepsis, a life-threatening bacterial infection, or [pneumonia](https://www.verywellhealth.com/pneumonia-causes-risk-factors-770691) in older adults.

9.Bacteria(nominal) -ba - (present,notpresent)  
10.Blood Glucose Random(numerical)bgr in mgs/dl

11.Blood Urea(numerical) -bu in mgs/dl

We can take this from using blood report

Can take from blood report or urine test

12.Serum Creatinine(numerical) -sc in mgs/dl

Also find in the blood report

13.Sodium(numerical) -sod in mEq/L

We can find in urine test

14.Potassium(numerical)  
pot in mEq/L

We can find in urine test

15.Hemoglobin(numerical) -hemo in gms  
16.Packed Cell Volume(numerical) -pcv

Blood is a mixture of cells and [plasma](https://labtestsonline.org.uk/glossary/plasma). The packed cell volume (PCV) is a measurement of the proportion of blood that is made up of cells. The value is expressed as a percentage or fraction of cells in blood. For example, a PCV of 40% means that there are 40 millilitres of cells in 100 millilitres of blood.

17.White Blood Cell Count(numerical)-wc in cells/cumm  
18.Red Blood Cell Count(numerical) -rc in millions/cmm

The **normal RBC** range for men is 4.7 to 6.1 million **cells** per microliter (mcL). The **normal RBC** range for women who aren't pregnant is 4.2 to 5.4 million mcL. The **normal RBC** range for children is 4.0 to 5.5 million mcL

19.Hypertension(nominal) -htn - (yes,no)

High blood pressure

20.Diabetes Mellitus(nominal) -dm - (yes,no)

Diabetes if you have

21.Coronary Artery Disease(nominal)-cad - (yes,no)

**Coronary artery disease** develops when the major blood vessels that supply your **heart** with blood, oxygen and nutrients (**coronary arteries**) become damaged or diseased. Cholesterol-containing deposits (plaque) in your **arteries** and inflammation are usually to blame for **coronary artery disease**

22.Appetite(nominal) -appet - (good,poor)  
23.Pedal Edema(nominal) -pe - (yes,no)

**Pedal edema** is the accumulation of fluid in the feet and lower legs. It is typically caused by one of two mechanisms. The first is venous **edema**, caused by increased capillary filtration and retention of protein-poor fluid from the venous system into the interstitial space.

24.Anemia(nominal) -ane - (yes,no)

[Anemia](https://www.webmd.com/a-to-z-guides/understanding-anemia-basics) is defined as a low number of red [blood cells](https://www.webmd.com/heart/anatomy-picture-of-blood). In a routine blood test, anemia is reported as a low hemoglobin or hematocrit. Hemoglobin is the main protein in your red blood cells. It carries oxygen, and delivers it throughout your body. If you have anemia, your hemoglobin level will be low too. If it is low enough, your tissues or organs may not get enough oxygen. [Symptoms of anemia](https://www.webmd.com/a-to-z-guides/understanding-anemia-symptoms) -- like [fatigue](https://www.webmd.com/women/guide/why-so-tired-10-causes-fatigue) or [pain](https://www.webmd.com/pain-management/default.htm) -- happen because your organs aren't getting what they need to work the way they should.

25.Class (nominal) -class - (ckd,notckd)

A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generatedA screenshot of a computer

Description automatically generatedA screenshot of a cell phone

Description automatically generatedA screenshot of a computer

Description automatically generated

A screenshot of a map

Description automatically generated

Factors that may increase your risk of chronic kidney disease include:

* Diabetes - su(blood sugar), dm (diabetes mellitus)
* High blood pressure - BP
* Heart and blood vessel (cardiovascular) disease
* Smoking
* Obesity
* Being African-American, Native American or Asian-American
* Family history of kidney disease
* Abnormal kidney structure
* Older age - age