General Urine Examination

Assist.Lecturer
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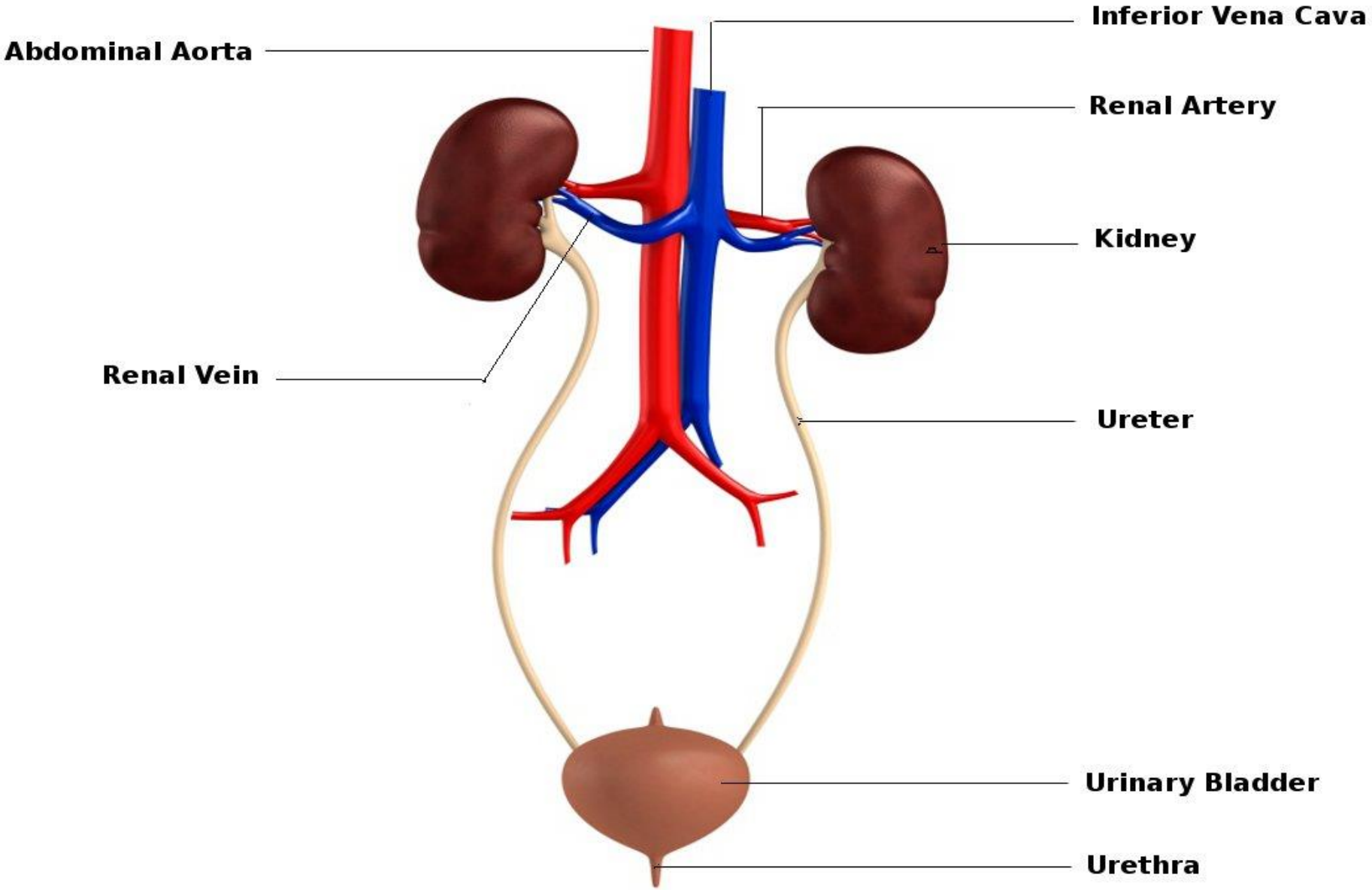

Abdominal Aorta
Inferior Vena Cava
Renal Artery
Kidney
Renal Vein
Ureter
Urinary Bladder
Urethra

Waste products:

- **Organic:**
- **Uric acid**
- **Creatinine**
- **Urea**
- **Inorganic:**
- **Sulphates**
- **Phosphates**
- **Chloride**
- **Ammonia**

- **Normal daily urinary output is 800-2000 ml**
- **An increase in amount of urinary output is referred as polyuria as seen in diabetes**
- **Decreases in amounts of urine are called oliguria as in fever**
- **A complete absence of urine or when a person passes out not more than 100 milliliter per day is referred to as anuria as in kidney failure.**

- **For most qualitative tests, fresh specimen is required (a first voided morning specimen)**

- **If the urine is not analyzed within few hours, then correct storage and addition of preservatives are necessary.**

Collection of urine specimen

- **Urine specimens must be collected in aseptically clean containers.**
- **Specimens of female are likely to be contaminated with albumin and blood from menstrual discharge or**

  albumin and pus from

  vaginal discharge

Types of urine specimens:

- **Random urine specimen: the least valid specimen**
- **First morning urine specimen: the best sample for routine urinalysis**
- **24-hour urine specimen: it measures the exact output of urine over a 24-hour period**

- **Daytime urine output is two to four times greater than nighttime output.**

- **High protein diet tends to increase urinary output.**

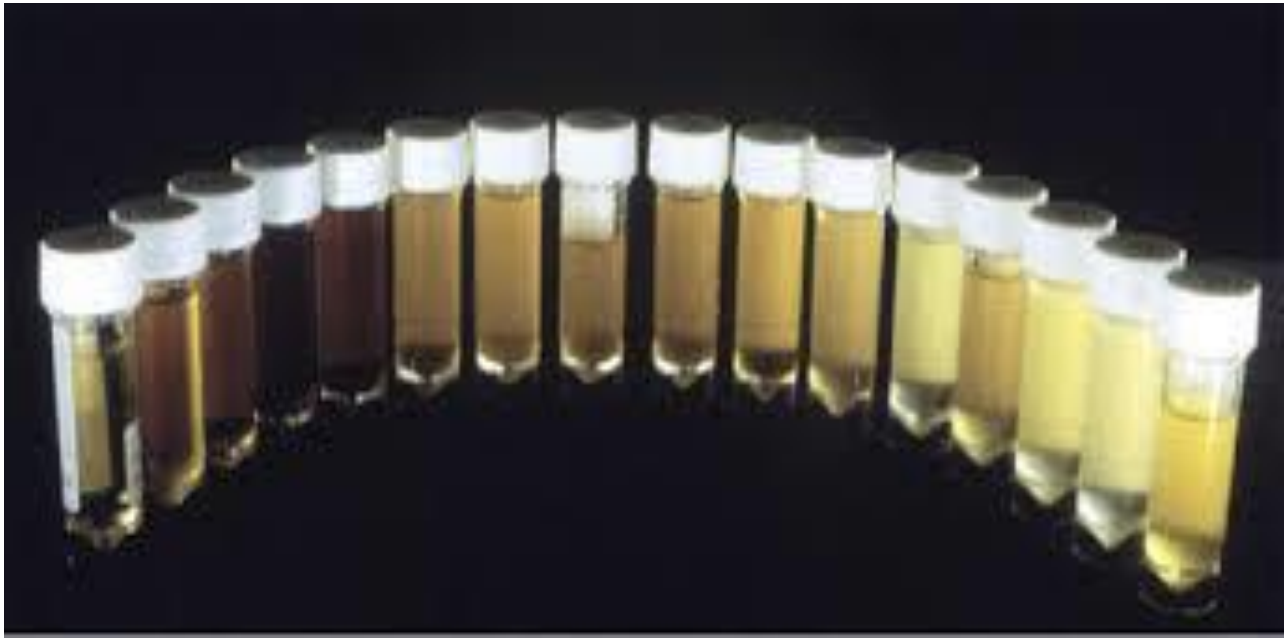
Preservation of urine specimen

- **Refrigeration**
- **Addition of preservatives:**
- **Hydrochloric acid**
- **Boric acid**
- **Glacial acetic acid**
- **Formaldehyde**

Physical examination:

- **Color:**

Straw, pale yellow, light yellow, yellow, dark yellow and amber.



- **Transparency:**

Clear, hazy, cloudy, turbid and milky.

- **Odor:**
- **Normal urine has inoffensive odor**
- **Volume:**
- **It is affected by fluid intake, sodium and urea excreted, perspiration, respiration, bowel activity (diarrhea), cardiovascular and renal function.**

Chemical properties:


One Step®
Reagent Strips For Urinalysis
Bandelettes Reactives Pour L'analyse Urinaire
Reagenz Streifen Fur Urinanalyse
Tiras Reactivas Para Analisis De Orina
CE 0120
IVD
2°C
30°C
Tests
Results / Resultats / Resultados / Ergebnisse
Leukocytes/Leucocytes
Leucocitos/Leukozyten
neg.
trace
+70
++125
+++500
WBC/µL
Nitrite/Nitritos
Nitrit
neg.
trace
pos.
Urobilinogen/Urobilinogène
Urobilinógeno
0.1 +Normal+ 1(16)
2(33)
4(66)
8(131)
mg/dl
(µmol/L)
Protein/Protéines
Proteínas
neg.
trace
+30(0.3)
++100(1.0)
+++300(3.0)
++++1000(10)
mg/dl(g/L)
pH
5
6
6.5
7
7.5
8
8.5
Blood/Sang
Sangre/Blut
neg.
Hemolysis trace
+25
++80
+++200
Non Hemolysis+10
++80
RBC/µL
S.G/Densité
Densidad/Spez.Gew.
1.000
1.005
1.010
1.015
1.020
1.025
1.030
Ketones/Cétones
Cetonas/Ketonkörper
neg.
± 5(0.5)
+15(1.5)
++40(3.9)
+++80(8)
++++160(16)
mg/dl(mmol/L)
Bilirubin/Bilirubine
Bilirrubina
neg.
+
++
+++
Glucose/Glucosa
neg.
± 100(5.5)
+250(14)
++500(28)
+++1000(55)
++++2000(111)
mg/dl(mmol/L)
Read at exactly 60 sec.
Lire après 60 sec.
Leer exactamente a los 60 seg.
Nach exakt 60 Sek.

- **pH:**
- **Normal urine pH is 4.6-8.0**
- **It is affected by acidosis and alkalosis or ingestion of acidic or basic food.**
- **Protein:**
- **Normal urine contain no proteins (albumin)**
- **If present it is called proteinuria**
- **Glucose:**
- **Normal urine contain no glucose**
- **If present it is called glucosuria (diabetes)**

- **Reduction in the renal threshold**
- **Hormonal disorders**
- **Liver diseases**
- **Pregnancy**
- **Specific gravity:**
- **It is an assessment of renal tubular function**
- **Normal urine specific gravity is 1.003-1.035**

- **Ketones:**
- **Normal urine contain no ketones.**
- **If present it is called ketonuria**
- **Urobilinogen:**
- **Normal urine contain low concentration of it.**
- **Bilirubin:**
- **It is not present in normal urine.**


The End