

3. **What is the usual time and relative centrifugal force (RCF) for centrifugation of urine specimens?**
Five minutes at 400 x g produces the optimum amount of sediment with the least chance of damaging the elements.
4. **At what pH are the formed elements best preserved in the urine?**
Acid.
5. **Which stain can be used for urine sediment examination?**
Sternheimer-Malbin.
6. **Which types of microscopes provide the best differentiation of formed elements?**
Phase contrast and interference contrast. Elements such as hyaline casts, mucus, and bacteria are easier to see with these microscopes.
7. **What type of illumination is best for examining urine sediment ?**
Low. Some elements like hyaline casts have a refractive index similar to urine and are not seen under bright light.
8. **What is the minimum number of fields that should be observed when performing a microscopic examination of urine?**
At least 10 fields should be observed under both 10x and 40x.
9. **In urine sediment examination, which elements are reported per high power field?**
RBCs and WBCs. Casts are counted per low power field.
10. **Interpret the following urine sediment findings: 0-5 WBCs/HPF, 0-2 RBCs/HPF, 0-2 hyaline casts/LPF, few epithelial cells, few uric acid crystals, rare calcium oxalate crystals.**
These findings are normal.
11. **What is the significance of epithelial cells in the urine sediment?**
Squamous and transitional epithelial cells are seldom important. Renal epithelial cells are a sign of renal tubular necrosis.
12. **A urine sediment contains many squamous epithelial cells and 4+ bacteria. What is the significance of these findings?**
The results are not significant. These findings are frequently seen in the urine of females when the urine is not a clean catch. Many squamous epithelial cells are a sign of vaginal contamination.
13. **What is pyuria?**
The presence of WBCs in the urine. It is a sign of infection or inflammation of the urinary tract.
14. **Which type of WBC is most frequently present in the urine sediment with urinary tract infections?**
Segmented neutrophils (polys).
15. **What is the significance of clumped WBCs in the urine sediment?**
WBC clumps are a sign of an active infection.
16. **What might cause degranulation and lysis of WBCs in the urine sediment?**
Prolonged standing at room temperature.