

Refractometer

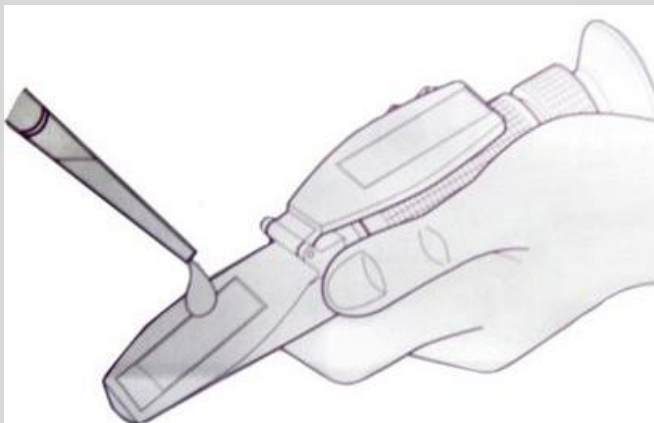
Total protein (blood, urine) and urine Specific Gravity

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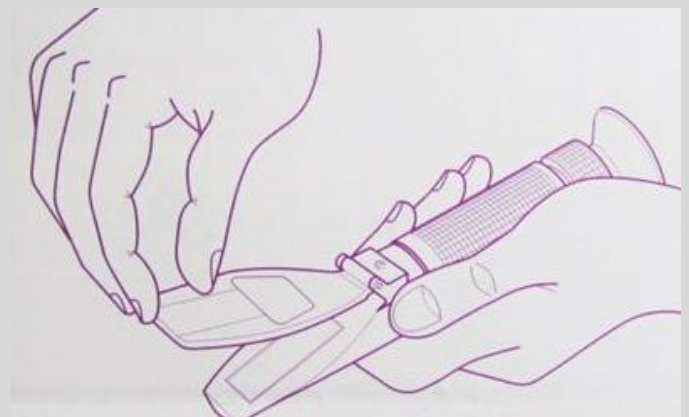


Refractometry can be used to measure plasma, serum, or body cavity protein.

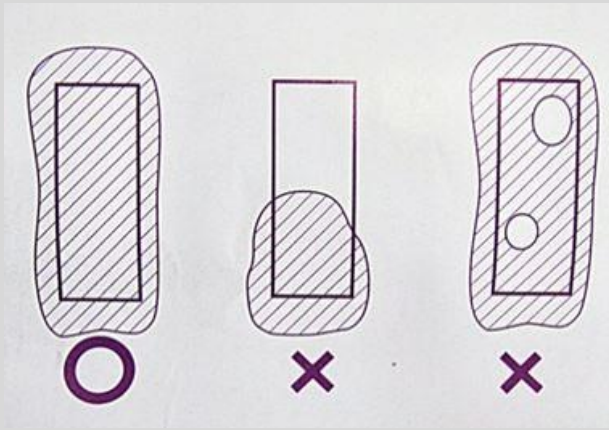
- Temperature-compensated, hand-held refractometers are calibrated to read protein directly in g/dl.
- Most units are temperature-compensated to give accurate readings between 16° C and 38° C (60°F to 100°F).
- Abnormally high concentrations of glucose, urea, sodium, or chloride may result in falsely high protein readings.
- Lipemia alters light transmission through the specimen, producing an indistinct line of demarcation and falsely high protein readings usually result.
- The serum, plasma, or body cavity fluid must be clear for accurate measurement
 - Hemolysis may cause a mild increase in protein concentration
 - Turbidity from lipemia or cells may result in falsely high readings
 - Icterus alters the color of the specimen but does not alter the reading
- Quality control consists of calibrating the instrument by measuring the specific gravity of water (1.000) and a 5% w/v sodium chloride solution (1.022).



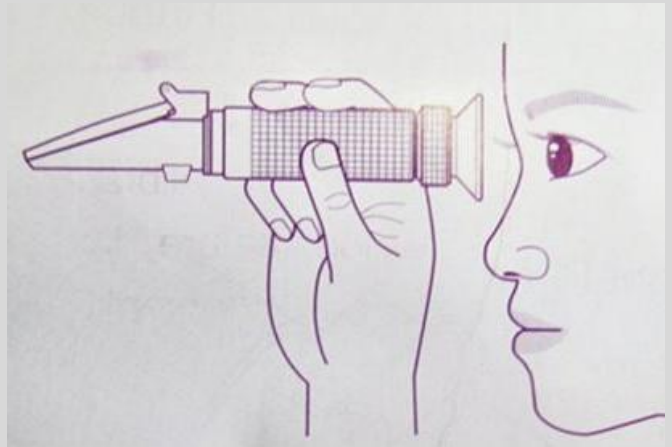
1. Place 1-2 drops of samples on the prism



2. Close the daylight plate gently



3. The sample must spread over the prism surface completely, eliminating any air bubbles that may be trapped under the daylight plate. If the sample does not completely cover the prism surface the measured value may not be accurate.



4. View the scale by pointing the unit towards a light source and looking through the eyepiece. Focus the scale by turning the eyepiece until the scale can be read clearly.



5. Read the measured value where the boundary line intercepts the scale



6. Clean the prism and daylight plate after each use by gently wiping off the sample with a damp, lint-free tissue. Then use another tissue to remove any excess moisture