Urine Specific Gravity: Patient Testing Procedure for ATAGO Pocket PAL-10S

Purpose:

This procedure provides instructions for how to measure the urine specific gravity of patient urine samples using the ATAGO Pocket PAL-10S digital refractometer.

Materials and Equipment:

Item		Supplied By
Disposable Gloves		Ward
ATAGO® PAL-10S Pocket Urine Refractometer		POCT Lab
Distilled Water (DH2O), One-month open bottle expiry, Room temperature		Ward (0.5L) PS Order # 00020518 (1.0L) PS Order # 00024769
Disposable syringes		Ward PS Order # 00019548
Lint-free Tissues		Ward PS Order # 00021152
Patient Urine Sample <u>Acceptable:</u> Midstream, bagged or catheter collection <u>Unacceptable:</u> Diaper or cotton ball collection		Ward

Procedure:

	Action		Related Documents Title Number
1.	Put on disposable gloves.		
2.	Obtain the current month's Urine Specific Gravity: Quality Control Record Form to check if daily quality control testing has been performed.		Urine Specific Gravity: Quality Control Record Form
3.	**If quality control testing**	**Then**	Urine Specific Gravity: Quality Control Testing Procedure
	has been completed within the last 24 hours and is acceptable	proceed to next step.	
	has not been completed within the last 24 hours or is not acceptable	perform quality control testing before any patient testing.	
4.	Place the digital refractometer on a flat, stationary surface for testing.		
5.	Clean the prism surface by adding a few drops of DH2O onto the prism with a disposable syringe. Wipe and dry the prism with tissue carefully to avoid scratching the prism surface.		
6.	Gently mix the patient urine sample. ***Note:*** *Patient urine sample should be in a clean, sterile container. Only midstream, bagged or catheter urine are acceptable. Urine from a diaper or cotton balls are not acceptable.*		
7.	Using a disposable syringe, add approximately 0.3mL of patient urine sample onto the prism. Avoid forming bubbles to ensure accurate results.		
8.	Press the START key. Measurement value will display after approximately 5 seconds and will remain on the screen for 2 minutes.		
9.	Record patient results as per nursing protocol.		
10.	Wipe away residual patient urine sample from the prism with tissue. Clean the prism surface with a few drops of DH2O. Wipe dry with tissue.		
11.	Discard remaining patient urine sample if not required for further testing.		

Results Interpretation:

- Normal urine specific gravity (SG) varies with hydration
- Normal reference range: 1.003 – 1.030
- Newborns have decreased ability to concentrate urine: SG less than 1.012
- Outside newborn period, after fluid deprivation: SG greater than 1.026
- Dyes for imaging or other dissolved exogenous solutes may cause high results

Support Contact:
POCT Technologist email POCTLab@cw.bc.ca local 7521 or after hours contact local 7850.

References:

1. ATAGO Instructions of Urine Specific Gravity Refractometer URIVON-Ne
2. Textbook of Clinical Chemistry. Norbert W.Tietz 1986 WB Saunders.

REVISION LOG

Version	Revision Type	Description of Change	Revision Date	Technical Approval	Medical Approval
1.0		New document	Nov 2013	Elvira Kozak	Dr. Cathy Halstead
1.1	Minor	Document title and number change. Upload to QMS document control	28 Dec 2016		Dr. Benjamin Jung
1.2	Minor	Reformatted and reworded, added POCT contact.	Jan 2, 2020	Diane Sze	

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