

Client Notice:**Change to Urinalysis Testing Platform**

As part of ongoing efforts to provide high-quality results our customers can trust, LifeLabs will be upgrading chemical and microscopic urinalysis instrumentation at our laboratories nationally, including all testing sites in Ontario.

The new instrumentation has shown similar or improved precision, accuracy, and sensitivity during LifeLabs internal validation. With the change to this new instrumentation, LifeLabs will align urinalysis processes and reporting on a national scale. LifeLabs laboratories that are currently performing manual microscopy will now switch to automated microscopy.

What this means for you?

The new platform will enable discontinuation of obsolete manual processes and delivery of improved clinical information through standardized reports and reference intervals.¹ Please see below for reporting changes that will be implemented with the new urinalysis testing platform.

In chemical urinalysis:

- The comparison between the current and the new reporting is summarized in Table 1. Changes to the reporting categories and units for Blood should be noted (in bold).
- The reference interval for Specific Gravity (SG) will be replaced with an interpretive comment for dilute urine. Other reference intervals will not change.
- LifeLabs will continue to report chemical urinalysis results in SI units. Conversion to the “Plus” reporting system is provided in Table 1 for convenience.
- NOTE: There is no change to reporting of critical urinalysis result. Glucose of =OR> 55 mmol/L AND Ketone of 3.9 mmol/L or higher will be phoned except in patients ≥ 12 years old with a critical (> 30.0 mmol/L) blood glucose result.

In microscopic urinalysis:

- The following urine sediment elements will always be reported, even if not detected (i.e. result is negative): RBCs, WBCs, Squamous Epithelial Cells, Non-Squamous Epithelial Cells, Pathological Casts, and Crystals. Other rare elements will be reported only if detected.
- All enumerated microscopic elements will be reported per HPF (high power field), including Pathological Casts previously reported per LPF (low power field).
- Reference interval for Squamous Epithelial Cells will be removed, due to clinical insignificance; the presence of Squamous Epithelial Cells indicates that the sample was not a “clean catch” (midstream) urine.¹
- Both chemical and microscopic urinalysis will be reported when microscopic urinalysis only is requested.
- Bacteria will no longer be reported, as the presence of bacteria in urine commonly indicates specimen contamination, and is not recommended among the clinically significant parameters in urine.²⁻⁴

When will the new instrumentation go live?

Implementation of the new platform will take place gradually across Ontario testing sites, during October and November 2021, starting on October 3rd, 2021. Once implemented at each site, a comment attached to testing results will indicate the new methodology.

A reminder regarding specimen collection and handling for urinalysis

We would like to take this opportunity to remind our clients that proper collection and handling of specimens for urinalysis are of utmost importance to obtaining accurate urinalysis results. When urinalysis specimen is collected (preferably midstream), date and time of collection should be included in the designated spot on OHIP requisition and/or on the specimen container. Urinalysis analytes are stable for two hours at room temperature and 24-48h refrigerated. Therefore, all specimens sent to LifeLabs must be refrigerated as soon as possible and within two hours of collection, and transported promptly to the testing laboratory under refrigerated conditions.

When date and time of collection are not provided, or when specimen is 24-48h old, the report will alert the healthcare provider to interpret results with caution, as accurate results cannot be guaranteed. Specimens older than 48h will be rejected. For further details regarding this topic, please read the September 2020 issue of Inside Diagnostics, LifeLabs healthcare provider newsletter: [Inside-Diagnostics-September-2020_Final.pdf \(azureedge.net\)](#). Patient collection instructions, as well as specimen handling instructions for urinalysis, are available through our patient service centres or in LifeLabs Test Information Directory: http://tests.lifelabs.com/Laboratory_Test_Information/Homepage.aspx

We are very excited about the new urinalysis platform implementation and the benefits it will deliver to our clients. If you have any questions or concerns, please contact the LifeLabs Clinical Biochemist below or LifeLabs Customer Care Centre at 1-877-849-3637.

We welcome your feedback!

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References:

1. Strasinger SK and Schaub Di Lorenzo M, authors: Urinalysis and Body Fluids. 7th Ed. F.A. Davis Company, Philadelphia, PA, USA, 2021
2. Nicolle LE, Gupta K, Bradley SF, et al: Clinical Practice Guideline for the Management of Asymptomatic Bacteriuria: 2019 Update by the Infectious Diseases Society of America. *Clinical Infectious Diseases*, 2019; 68: e83 – e110.
3. Choosing Wisely Canada: Seven Things Physicians and Residents/Patients Should Question, by Canadian Society for Long Term Care Medicine; February 2021; <https://choosingwiselycanada.org/long-term-care/>. Accessed 26/Aug/2021.
4. BC Guidelines.ca: Urinary Tract Infections in the Primary Care Setting – Investigation. By Guidelines & Protocol Advisory Committee, 2020. <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/urinary-tract-infections>. Accessed 26/Aug/2021.

Table 1. Changes to Chemical Urinalysis Reporting (significant changes indicated in bold):

Analyte	Current Platform (Beckman)	LifeLabs Reporting Units (SI)	NEW Platform (Siemens)	LifeLabs Reporting Units (SI)	Reference Interval	Conversion to "Plus" Reporting System
COLOUR	Yellow	n/a	Yellow	n/a	n/a	n/a
	Straw		Dark Yellow			
	Amber		--			
	Orange		Orange			
	Red		Red			
	--		Pink			
	Green		Green			
	Blue		Blue			
	Colorless		--			
	Brown		Brown			
	Black		Black			
APPEARANCE	Clear	n/a	Clear	n/a	Clear	n/a
	Slightly cloudy		--			
	Cloudy		Cloudy			
	Turbid		Turbid			
GLUCOSE	Negative	mmol/L	Negative	mmol/L	Negative	Negative
	2.8		5.5			Trace
	8.3		14			1+
	28		28			2+
	=OR> 55		=OR> 55			3+
KETONE	Negative	mmol/L	Negative	mmol/L	Negative	Negative
	0.5		--			--
	2.0		1.5			1+
	--		3.9			2+
	=OR> 8.0		7.8			3+
	--		=OR> 15.6			4+
SPECIFIC GRAVITY	<OR= 1.005	n/a	<OR= 1.005	n/a	n/a (replaced with interpretive comment indicating dilute urine)	n/a
	1.006-1.029		1.010			
			1.015			
			1.020			
	=OR> 1.030		1.025			
BLOOD	Negative	mg/L	Negative	RBC/uL	Negative	Negative
	0.3		Trace			Trace
	--		25			1+
	2		80			2+
	=OR> 10		200			3+
pH	5.0	n/a	5.0	n/a	5.0 – 8.0	n/a
	--		5.5			
	6.0		6.0			
	--		6.5			
	7.0		7.0			
	--		7.5			
	8.0		8.0			
	--		8.5			
	=OR> 9.0		=OR> 9.0			
PROTEIN	Negative	g/L	Negative	g/L	Negative	Negative
	0.3		0.3			1+
	1.0		1.0			2+
	--		3.0			3+
	=OR> 5		=OR> 10			4+
NITRITE	Negative	n/a	Negative	n/a	Negative	n/a
	Positive		Positive			
LEUKOCYTES*	Negative	WBC/uL	Negative	WBC/uL	Negative	Negative
	25		15			Trace
	75		70			1+
	250		125			2+
	500		500			3+

Abbreviations: "n/a", not applicable; "--", not available

*Note test name change from "Leukocyte Esterase" to "Leukocytes"