LifeLabs®

INSIDE Diagnostics ONTARIO

NOVEMBER 2021

THE NEWSLETTER FOR
HEALTHCARE PROVIDERS

CLOSED FOR Christmas and New Year Holidays

Please note that we will be CLOSED on:

December 25, 26, 27, 2021

(some locations will be closed on Dec. 28)

January 1, 2, 3, 2022

Closed at 12:00 Noon:

- December 24
- December 31

Regular Working Hours:

- December 28 - ** limited number of locations open
- December 29
- January 4

**** Please see www.LifeLabs.com or call our Customer Care Cente 1-877-849-3637 for locations and hours**

www.LifeLabs.com

LifeLabs®

COMBINED MOLECULAR TEST FOR SARS-COV-2, FLUA, FLUB, AND RSV OFFERED BY LIFELABS

Respiratory viruses account for most respiratory tract infections. Viral infections can be simple upper respiratory infections or more severe syndromes such as: pneumonia, bronchiolitis, croup, and tracheobronchitis.

The type of disease, symptoms, and severity of illness vary by age and other host factors. For example, RSV infection occurs at all ages from infants to adults but causes upper respiratory infections in adults and more severe lower respiratory infections (eg. bronchiolitis) in children. RSV is most severe in children, especially those less than 6 months of age, where pneumonia is a common presentation.

Adults, especially those who are immunocompromised, can also experience severe respiratory viral infections. For example, pneumonia caused by influenza is a leading cause of morbidity and mortality in elderly patients. Rapid diagnosis of viral respiratory pathogens can reduce morbidity and mortality in patients.

Clinically it is difficult to differentiate SARS-CoV-2 infections from other respiratory infections.

We are pleased to inform you that LifeLabs is now offering molecular PCR testing for the combined detection of SARS-CoV-2, Flu A, Flu B, and RSV for our community patients. This new OHIP-covered test will assist in differentiating some of the possible viral causes of respiratory tract infection and flu-like symptoms.

INDICATIONS FOR ORDERING COMBINED COVID AND RESPIRATORY VIRUS TEST

The combined COVID and respiratory virus test will only be available to patients experiencing COVID or flu-like symptoms. Therefore, this test cannot be accepted for the purposes of travel. If a patient inquires about COVID testing for travelling, they can be directed to our FlyClear page www.lifelabs.com/flyclear/predeparture/.

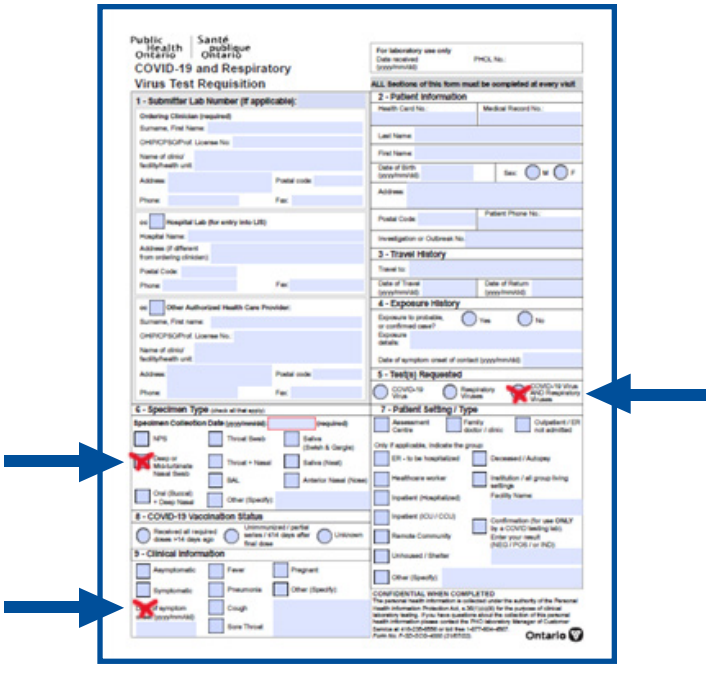
At this time, LifeLabs can only perform this testing on samples collected by health care providers. The test is not currently available for collection at LifeLabs' patient service centres.

ORDERING AND SAMPLE REQUIREMENTS

If you require molecular testing for respiratory viruses for your patient, please send us an appropriately-collected nasopharyngeal swab in the proper collection device, and fill in the Virus Test requisition from Public Health Ontario (please see below).

Samples other than Nasopharyngeal swabs collected by health care providers, cannot be accepted for testing for respiratory viruses (e.g., saliva, anterior nasal, or buccal swabs are not accepted for testing for respiratory viruses at LifeLabs).

Please indicate that Nasopharyngeal swab is collected, choose the combo test COVID+Flu and indicate that the patient is symptomatic to accept the sample for testing.


Public Health Ontario | Santé publique Ontario

COVID-19 and Respiratory Virus Test Requisition

ALL Sections of this form must be completed at every visit

1 - Submitter Lab Number (if applicable):

2 - Patient Information

3 - Travel History

4 - Exposure History

5 - Test(s) Requested

6 - Specimen Type

7 - Patient Setting / Type

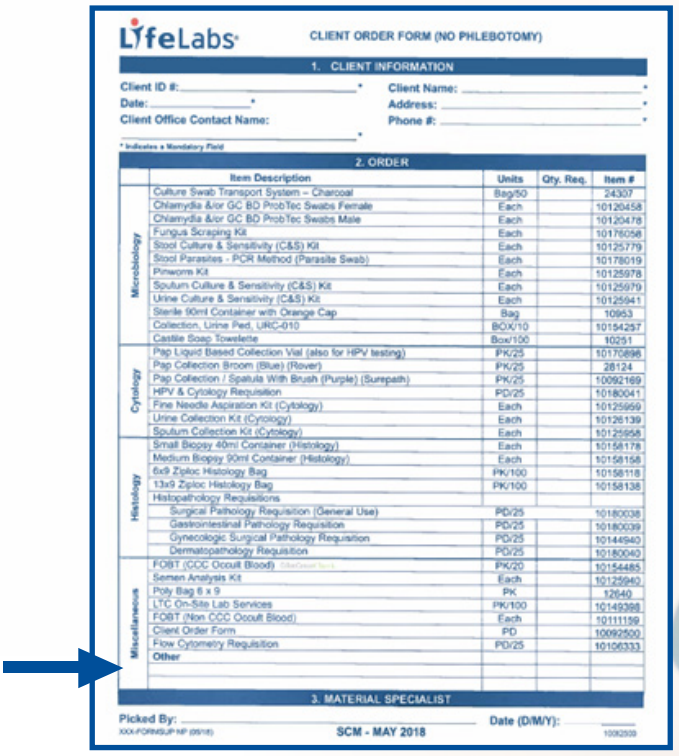
8 - COVID-19 vaccination status

9 - Clinical information

CONFIDENTIAL WHEN COMPLETED

Ontario

To order the respiratory viral collection swabs, please fill in the Client order form for Lifelabs. Add Copan respiratory viral swabs under Other:



LifeLabs

CLIENT ORDER FORM (NO PHLEBOTOMY)

1. CLIENT INFORMATION

Client ID #:_____* Client Name: _____*
Date: _____* Address: _____*
Client Office Contact Name: Phone #: _____*
_____*
* Indicates a Mandatory Field

2. ORDER

	Item Description	Units	Qty. Req.	Item #
Microbiology	Culture Swab Transport System – Charcoal	Bag/50		24307
	Chlamydia &/or GC BD ProbTec Swabs Female	Each		10120458
	Chlamydia &/or GC BD ProbTec Swabs Male	Each		10120478
	Fungus Scraping Kit	Each		10176058
	Stool Culture & Sensitivity (C&S) Kit	Each		10125779
	Stool Parasites - PCR Method (Parasite Swab)	Each		10178019
	Pinworm Kit	Each		10125978
	Sputum Culture & Sensitivity (C&S) Kit	Each		10125979
	Urine Culture & Sensitivity (C&S) Kit	Each		10125941
	Sterile 90ml Container with Orange Cap	Bag		10953
	Collection, Urine Pad, URC-010	BOX/10		10154257
	Castile Soap Towelette	Box/100		10251
Cytology	Pap Liquid Based Collection Vial (also for HPV testing)	PK/25		10170898
	Pap Collection Broom (Blue) (Rover)	PK/25		28124
	Pap Collection / Spatula With Brush (Purple) (Surepath)	PK/25		10092169
	HPV & Cytology Requisition	PD/25		10180041
	Fine Needle Aspiration Kit (Cytology)	Each		10125999
	Urine Collection Kit (Cytology)	Each		10126139
	Sputum Collection Kit (Cytology)	Each		10125958
Histology	Small Biopsy 40ml Container (Histology)	Each		10158178
	Medium Biopsy 90ml Container (Histology)	Each		10158158
	6x9 Ziploc Histology Bag	PK/100		10158118
	13x9 Ziploc Histology Bag	PK/100		10158138
	Histopathology Requisitions			
	Surgical Pathology Requisition (General Use)	PD/25		10180038
	Gastrointestinal Pathology Requisition	PD/25		10180039
	Gynecologic Surgical Pathology Requisition	PD/25		10144940
	Dermatopathology Requisition	PD/25		10180040
Miscellaneous	FOBT (CCC Occult Blood)	PK/20		10154485
	Semen Analysis Kit	Each		10125940
	Poly Bag 6 x 9	PK		12640
	LTC On-Site Lab Services	PK/100		10149398
	FOBT (Non CCC Occult Blood)	Each		10111159
	Client Order Form	PD		10092500
	Flow Cytometry Requisition	PD/25		10106333
	Other			

3. MATERIAL SPECIALIST

Picked By: _____ Date (D/M/Y): _____

XXX-FORMSUP NP (05/18) SCM - MAY 2018 1002500

If you have any questions, please contact 1-877-849-3637, or refer to our Notifications & Alerts page on our website.

Huda Almohri, *MD FRCPC*
Deputy Ontario Medical Director,
Discipline Head, Microbiology

UPGRADE TO URINALYSIS TESTING PLATFORM

As part of ongoing efforts to provide high-quality results our customers can trust, LifeLabs has upgraded 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 are 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) is 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 was 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 is no longer reported, as the presence of bacteria in urine commonly indicates specimen contamination, and it is not recommended among the clinically significant parameters in urine.[2-4]

WHEN WAS THE NEW INSTRUMENTATION IMPLEMENTED?

Implementation of the new platform took place gradually across Ontario testing sites, during October and November 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.

LifeLabs®

- 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 refer to 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!

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
	--		--			
	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			
	=OR> 1.030		1.015			
			1.020			
			1.025			
			=OR> 1.030			
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		25			Trace
	75		75			1+
	250		250			2+
	500		500			3+

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

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

Kika Veljkovic, *PhD, FCACB*
Clinical Biochemist and Discipline Head,
High Volume Chemistry
LIfeLabs, Ontario

LifeLabs®

HELICOBACTER PYLORI STOOL ANTIGEN TEST

Helicobacter pylori (H. pylori) is a bacteria that grows in the inner lining of the stomach.[1] It has been associated with gastric and duodenal ulcers, gastric cancer, gastric mucosa associated lymphoid tissue lymphomas and dyspepsia.[2,3]

H. pylori infection affects 50% of the world's population.[4] The prevalence in ON for 50 to 80 year old age bracket is 29.4% for men and 14.9% for women.[5]

Certain groups of people continue to have a higher predilection for this infection, such as First Nations communities, those in lower socioeconomic groups, and immigrants from countries such as Japan, Korea and China where there is a high incidence of *H. pylori* infection.[1]

The Toronto Consensus for the Treatment of *Helicobacter pylori* Infection in Adults strongly recommends a treatment of 14 days in patients with *H. pylori* infection.[6] It is therefore imperative to diagnose these infections so that patients can receive timely treatment.

DIAGNOSTIC TESTING FOR H. PYLORI

Although **Urea Breath Test (UBT)** has a high diagnostic accuracy for the detection of H. pylori infection[4], the sample collection for this test could not be performed at LifeLabs patient service locations during the COVID-19 pandemic because of infection prevention and control implications. **LifeLabs will resume UBT in early 2021.**

The *H. pylori* **stool antigen test** is an accurate and reliable alternative test to UBT. This test has a high sensitivity and specificity. A systematic review of the stool antigen test in untreated patients with *H. pylori* infection demonstrated an overall sensitivity of 91%, specificity of 93%, and positive and negative predictive values of 92% and 87%, respectively.[7] Chisolm et al reported a 94% sensitivity and 100% specificity in pretreatment dyspeptic adults in England.[8]

LIFELABS ONTARIO HAS RECENTLY STARTED TO OFFER A STOOL ANTIGEN TEST FOR H. PYLORI DETECTION.

Key Features:

- The test is an Enzyme Immuno Assay (EIA) that detects *H. pylori* antigens in stool.
- Non invasive, easy sample collection,
- Can be used both for diagnosis and assessing effectiveness of therapy.
- Results are qualitative (detected, not detected, indeterminate) and they must be interpreted in context of other clinical information,
- Proton Pump Inhibitors (PPIs), Bismuth preparations, antibiotics suppress *H. pylori* and can lead to false Negative results. (However, a positive result should be considered accurate).
- Performance characteristics of the test have not been established in asymptomatic populations

Ordering and Cost:

- The *H.pylori Stool* Antigen Test can be ordered by writing 'H.pylori Stool' in the 'Other Tests' section of the standard Ontario MOH requisition. The patient must obtain a collection container and provide a stool sample at any of LifeLabs' Patient Service Centers.
- Samples without a signed requisition by a physician or health care provider will not be accepted.
- This test is uninsured and it costs $180.00 CAD/ test.

Sample Collection:

- Collect stool in a sterile leak proof container and transport at 2-8°C within 96 hours of collection or frozen.
- Stool samples in Cary Blair media are acceptable
- Preferred Specimen(s): Minimum volume of 0.5ml / 0.5 grams of stool or 20 mm diameter of solid stool

- Reasons for sample rejection: stool in formalin or alcohol based fixative, concentrated stool specimens, swabs, insufficient quantity.

Turnaround Time, Results Reporting and Interpretation:

- Results of the test will be available to the ordering physician within 8 days of the specimen drop off.
- The results of this test are reported as *H. pylori* antigen detected, not detected, or indeterminate. The presence of *H. pylori* is indicated as a positive result (antigen detected). A negative result (antigen not detected) typically indicates the absence of *H. pylori,* or possibly an antigenic level below the immunoassay detection limit.
- **Important Consideration for result interpretation:** If your patient has initiated ulcer therapy during the two-week period leading up to specimen collection, a false-negative result is possible. If that occurs, the patient should wait for two weeks after treatment is completed to have the test redone on a new specimen. If an indeterminate result is reported, retesting with a new specimen will be required.

For more information, please contact our Customer Care Centre at: 1-877-849-3637

REFERENCES:

1. Canadian Cancer Society. What you need to know about H. Pylori? – retrieved on July 19,2021 from https://www.cancer.ca/en/prevention-and-screening/reduce-cancer-risk/make-informed-decisions/get-vaccinated/what-you-need-to-know-about-h-pylori/?region=on
2. Dunn, B. E., Cohen, H., & Blaser, M. J. (1997). Helicobacter pylori. *Clinical Microbiological reviews* 10(4). 720–741.
3. Chey, W. D., Leontadis, G. I., Howden, C. W., & Moss, S. F. (2017). ACG Clinical Guideline: Treatment of Helicobacter pylori Infection. *Am J Gastroenterol* 112. 212–238.
4. Mounsey, A., Leonard, E. A. (2019). Noninvasive Diagnostic Tests for Helicobacter pylori Infection *American Family Physician*. 100(1).16-19.
5. Naja , F., Kreiger, N., & Sullivan, T. Helicobacter pylori infection in Ontario: Prevalence and risk factors. *Can J Gastroenterol*. 21 (8). 501-506.
6. Fallone , C.A., Chiba , N., Veldhuyzen van Zanten , S., Fischbach, L., Gisbert, J.P., Hunt , R.H., Jones , N.L., Render, C., Leontiadis , G,I., Moayyedi, P., Marshall, J.K. (2016). The Toronto Consensus for the Treatment of Helicobacter pylori Infection in Adults. *Gastroenterology*. 151(1). 51-69.
7. Gisbert JP, Parajares JM. (2004). Stool antigen test for the diagnosis of Helicobacter pylori infection: a systemic review. *Helicobacter* 9. 347-368.
8. Chisolm S.A., Watson,C. L., Teare, E.L., Saverymuttu, S., Owen, R.J. (2004). Noninvasive diagnosis of Helicobacter pylori infection in adult dyspeptic patients by stool antigen detection: does the rapid immunochromatography test provide a reliable alternative to conventional ELISA kits? *J Med Microbiol*. 53(7). 623-627.

Yasmeen Marbaniang Vincent, *MBBS, MD*
Medical Microbiologist,
LIfeLabs ON

Nader Boctor, *MBBCh MSc DipM*
Product Manager, Business Development

GROWTH HORMONE SUPPRESSION TEST NOW AVAILABLE AT LIFELABS

We are pleased to let you know that Growth hormone (GH) suppression test is now available at LifeLabs, as an aid in the diagnosis of growth hormone excess.

CLINICAL UTILITY FOR GROWTH HORMONE SUPPRESSION TEST:

Biochemical diagnosis of GH excess starts with the measurement of IGF-1. This is the recommended first line test and may be used to rule out acromegaly.

For elevated or equivocal measurements of IGF-1, a growth hormone suppression test is recommended for confirmation of diagnosis.

- A nadir serum GH level <1 ug/L within 2 hours after 75g oral glucose usually excludes the diagnosis of GH excess.[1]
- The measurement of a single random GH is not recommended due to the pulsatile nature of GH secretion.

What this means for you?

Following the Endocrine Society clinical practice guidelines[1], LifeLabs now offers the growth hormone suppression test which replaces the previously offered timed collections of growth hormone, and includes the following:

- measurement of GH and glucose in a fasting serum sample,
- followed by the administration of a 75 g glucose drink.
- subsequently, GH and glucose measurements are made on the two additional serum samples collected 1 hour and 2 hours post glucose drink ingestion.

Result Reporting:

The result report includes the required measurements along with an interpretive guide for glucose (for the diagnosis of diabetes as outlined by Diabetes Canada guidelines[2]) and an interpretive statement for growth hormone (based on the Endocrine Society Guidelines for acromegaly[1]). The latter indicates the following: "Hyperglycemia due to a 75 g dose of glucose suppresses growth hormone to <1 ug/L within 2 hours of glucose administration. Lack of GH suppression is consistent with a diagnosis of GH excess."

No reference intervals will be provided for the growth hormone test results due to its pulsatile nature. A random growth hormone is still available to order if required.

Ordering:

Heath Care Providers can order the GH suppression test as a single test, which replaces the previously offered timed collection of growth hormone.

Please see Test Information Directory for further details on ordering and reporting of GH suppression test: https://tests.lifelabs.com/Chemistry/G/GROWTH_HORMONE_SUPPRESSION_TEST.aspx?s=1

This new offer does not impact the currently available IGF-1 and random growth hormone tests.

We welcome your feedback!

REFERENCES:

1. Katznelson, Laurence, Edward R. Laws Jr, Shlomo Melmed, Mark E. Molitch, Mohammad Hassan Murad, Andrea Utz, and John AH Wass. "Acromegaly: an endocrine society clinical practice guideline." *The Journal of Clinical Endocrinology & Metabolism* 99, no. 11 (2014): 3933-3951.
2. Punthakee, Zubin, Ronald Goldenberg, and Pamela Katz. "Definition, classification and diagnosis of diabetes, prediabetes and metabolic syndrome." *Canadian journal of diabetes* 42 (2018): S10-S15.

Uvaraj Uddayasankar, *PhD FCACB*
Clinical Biochemist,
LifeLabs, ON

LifeLabs®

For more information, please visit our site at **www.LifeLabs.com**

Dr. Timothy Feltis
Ontario Medical Director
416 - 675 - 4530 ext.42801
tim.feltis@lifelabs.com

Dr. Huda Almohri
Deputy Ontario Medical Director, Discipline Head, Microbiology
416 - 675 - 4530 ext. 42105
huda.almohri@lifelabs.com

Dr. Mona Kamel
Discipline Head, Cytopathology
416-675-4530 Ext. 42753
mona.kamel@lifelabs.com

Dr. Terry Colgan
Discipline Head, Histopathology
416-675-4530 Ext. 42980
Terry.Colgan@lifelabs.com

Dr. Abdel Belhaj
Medical Microbiologist
416 - 675 - 4530 ext. 42344
abdel.belhaj@lifelabs.com

Dr. Uvaraj Uddayasankar
Clinical Biochemist
416 - 675 - 4530 ext. 4221 1
Uvaraj.Uddayasankar@lifelabs.com

Dr. Mohamed Abouelhassan
Clinical Biochemist
416 - 675 - 4530 ext. 42216
Mohamed.Abouelhassan@lifelabs.com

Dr. Afaf Erfaei
Hematopathologist
416 - 675 - 4530 ext. 4294
afaf.erfaei@lifelabs.com

Dr. Theano Karakosta
Mass Spectrometry Specialist
416 - 675 - 4530 ext. 42029
theano.karakosta@lifelabs.com

Dr. Danijela Konforte
Discipline Head, Special Chemistry
416 - 675 - 4530 ext. 42207
danijela.konforte@lifelabs.com

Dr. Daniela Leto
Medical Microbiologist
416 - 675 - 4510 ext. 32310
daniela.leto@lifelabs.com

Dr. Tracy Morrison
Clinical Biochemist
416 - 675 - 4530 ext. 42975
tracy.morrison@lifelabs.com

Dr. Dorothy Truong
Clinical Biochemist
416 - 675 - 4530 ext. 42208
dorothy.truong@lifelabs.com

Dr. Nicole White-Al Habeeb
Clinical Biochemist
416 - 675 - 4530 ext. 42099
Nicole.White-AlHabeeb@lifelabs.com

Dr. Krystyna Ostrowska
Medical Microbiologist
416 - 675 - 4530 ext. 42892
krystyna.ostrowska@lifelabs.com

Dr. Difei Sun
Mass Spectrometry Specialist
416 - 675 - 4530 ext. 42296
difei.sun@lifelabs.com

Dr. Kika Veljkovic
Discipline Head, High Volume Chemistry
416 - 675 - 4530 ext. 42832
kika.veljkovic@lifelabs.com

Dr. Miranda Wozniak
Deputy Ontario Medical Director, Discipline Head, Hematology
416 - 675 - 4530 ext. 42040
miranda.wozniak@lifelabs.com

Dr. Yasmeen M Vincent
Medical Microbiologist
416 - 675 - 4530 Ext. 42813
yasmeen.vincent@LifeLabs.com