Inside Diagnostics Ontario

The Diagnostic Newsletter for Healthcare Providers

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DECEMBER 2018

LifeLabs®

Lifelabs 2018 Holiday Hours

Please be advised of LifeLabs ON Patient Collection Centers (PSC) Holiday Hours:

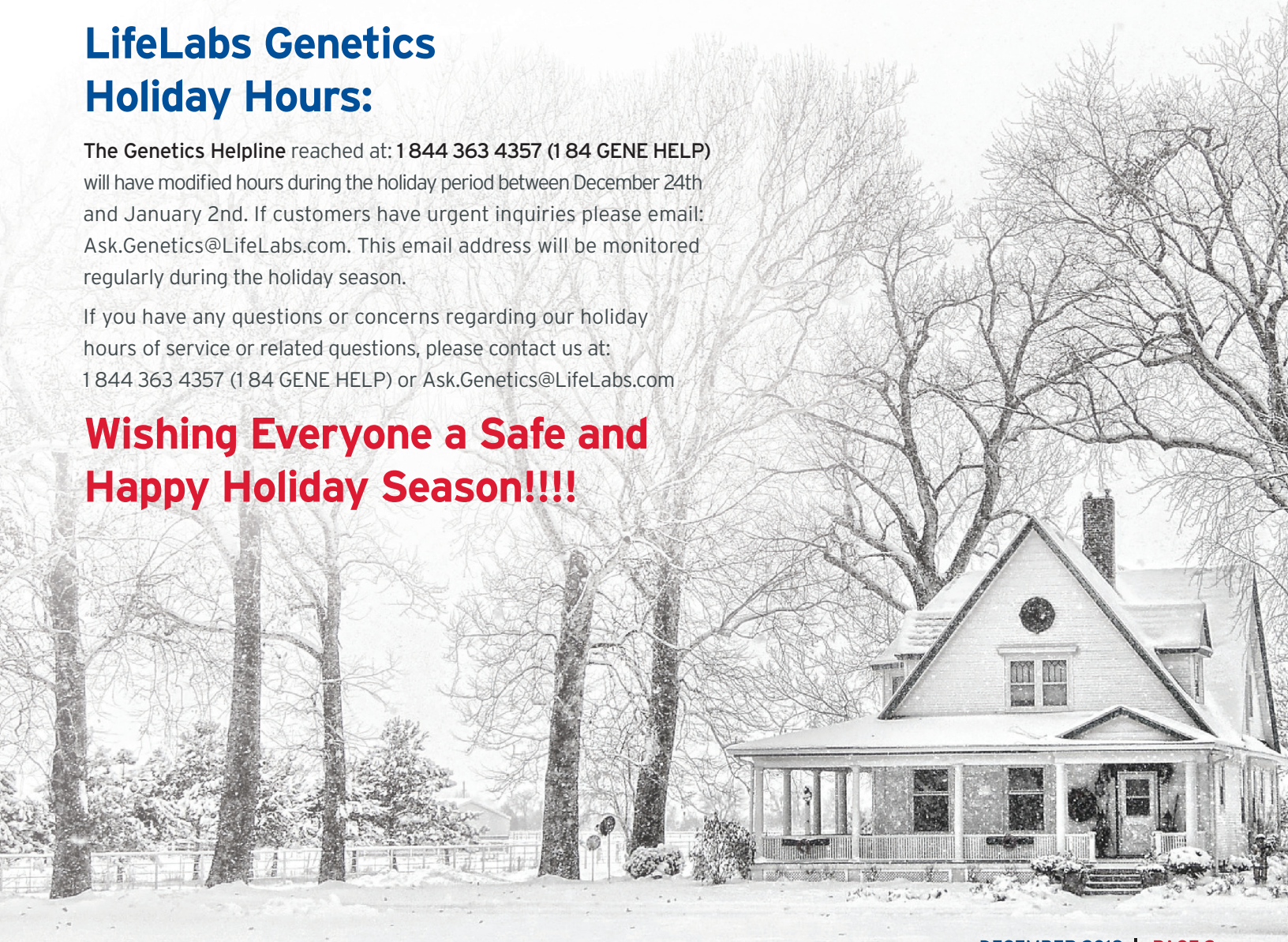
SUNDAY DECEMBER 23RD	MONDAY DECEMBER 24TH	TUESDAY DECEMBER 25TH	WEDNSDAY DECEMBER 26TH	THURSDAY DECEMBER 27TH	FRIDAY DECEMBER 28TH	SATURDAY DECEMBER 29TH
	All Locations Closing at Noon	All Locations Closed	All Locations Closed	All Locations Open - Regular Hours of Service	All Locations Open - Regular Hours of Service	All Locations Open - Regular Hours of Service
SUNDAY DECEMBER 30TH	**MONDAY DECEMBER 31ST**	**TUESDAY JANUARY 1ST**	**WEDNSDAY JANUARY 2ND**	**THURSDAY JANUARY 3RD**	**FRIDAY JANUARY 4TH**	**SATURDAY JANUARY 5TH**
All Locations Open - Regular Hours of Service	All Locations Closing at Noon	All Locations Closed	All locations open – back to Regular Hours of Service			

LifeLabs Genetics Holiday Hours:

The Genetics Helpline reached at: **1 844 363 4357 (1 84 GENE HELP)** will have modified hours during the holiday period between December 24th and January 2nd. If customers have urgent inquiries please email: Ask.Genetics@LifeLabs.com. This email address will be monitored regularly during the holiday season.

If you have any questions or concerns regarding our holiday hours of service or related questions, please contact us at: 1 844 363 4357 (1 84 GENE HELP) or Ask.Genetics@LifeLabs.com

Wishing Everyone a Safe and Happy Holiday Season!!!!



Lifelabs is Introducing New Hematology Instrumentation And Parameters – Sysmex Xn Series

It is anticipated that by November 2018 all LifeLabs laboratory locations will go-live with new Sysmex XN series hematology instrumentation. These new instruments offer a variety of new parameters that are useful in monitoring hematopoietic activity.

Ret-He and IRF: Both parameters provide acomprehensive picture of reticulocyte development and maturation.

- **Ret-He:** "Reticulocyte hemoglobin" provides a direct measurement of cellular iron that is available for hemoglobinization of the red cell. This parameter is a valuable tool for monitoring iron deficiency. A low reticulocyte hemoglobin content is an indication of poor iron supply relative to demand.
- **IRF:** "Immature reticulocyte fraction" can be used as a tool to monitor erythropoietic activity in the bone marrow. IRF levels rise as the bone marrow produces more reticulocytes. It's most useful as an aid in the diagnosis and management of anemia and also the monitoring of erythropoietic stimulating agents.

IPF: "Immature platelet fraction" is a reflection of bone marrow platelet production. In a patient with thrombocytopenia, raised IPF levels are an indication of increased peripheral platelet destruction making this parameter particularly useful for supporting a diagnosis of ITP or TTP, and for distinguishing peripheral platelet destruction from bone marrow suppression. It can also be used as a tool for evaluating thrombopoietic activity in patients recovering from chemotherapy.

NRBC: "Nucleated red blood cells" are seen in the peripheral blood of normal infants up until the 5th day of life. NRBCs in the peripheral blood beyond the neonatal period are generally considered abnormal and are often seen in conditions causing hematopoietic distress.

IG: "Immature granulocytes" include metamyelocytes, myelocytes, and promyelocytes. IGs are typically not detected in the peripheral blood of healthy individuals. Elevated IG levels are often found in patients with bacterial infections, acute inflammatory disorders, steroid use, trauma, pregnancy, and some bone marrow disorders.

As the new instrumentation is implemented throughout the province, these new parameters will automatically be provided on the CBC report along with their corresponding normal reference ranges.

Miranda Wozniak MD FRCPC
Deputy Ontario Medical Director
Discipline Head, Hematology

Potassium – Challenges with High Results

As community laboratories serve large geographical regions, and samples are not collected at the laboratory site, pre-analytical sample handling is an important consideration for potassium.

The most common challenges encountered for potassium, along with ways LifeLabs addresses these challenges, are discussed below:

1. The time between specimen collection and centrifugation should be as short as possible for potassium testing, as release from red blood cells can significantly increase potassium results.

While it is ideal to centrifuge samples within 2 hours, consistent increases may not be observed until 4 to 6 hours. Lifelabs in Ontario accepts specimens that have been centrifuged within 6 hours of collection for potassium testing.

- If the specimen was centrifuged within 2 hours of collection, the potassium results are considered accurate, and the results are released.
- If the time to centrifugation is 2 to 6 hours or unknown, the following comment is added: "Interpret electrolyte results with caution. Potassium may be elevated due to a delay in separating serum from red cells."
- If a specimen is not centrifuged within 6 hours, potassium results are considered unreliable and are not reported.

It is interesting to note that high potassium results due to a delay in centrifugation are not always associated with hemolysis!

Since 2017, LifeLabs has placed 25 new centrifuges in physician office collection sites as an effort to improve specimen quality, and it is hoped that a similar number will be available in future years.

2. Hemolysis is another challenge with potassium results due to the associated "leakage" of intracellular potassium into the serum.

This may be related to the phlebotomy procedure or to specimen handling.

In the past, there was a high number of client calls to LifeLabs asking if a high potassium result was due to sample hemolysis.

- When hemolysis is detected in a specimen tested for potassium, LifeLabs provides information about the degree of hemolysis on the reports for elevated results (> 5.2 mmol/L).
- As of September 2018, patient reports will also indicate absence of hemolysis when it is "not detected" for potassium results > 5.2 mmol/L.

3. The actual measurement of potassium is rarely a cause of questionable potassium results.

Potassium testing is highly automated in all laboratories, and at LifeLabs there are multiple checks in place to ensure accurate and precise results on a daily basis. As shown in blind provincial quality assurance challenges, laboratories across Ontario obtain potassium results within ± 0.2 mmol/L for concentrations < 3.0 mmol/L, and within ± 6% for concentrations ≥ 3.0 mmol/L. Therefore, it is unlikely that repeating the testing on the same sample will get a significantly different result. However, LifeLabs appreciates all calls, and will always check the result if the specimen is still available (usually within 3 days of collection).

4. An important consideration in interpreting results is the expected day-to-day biological variation of an analyte as this determines the amount of change needed before a significant difference is observed.

The expected variation around a patient's homeostatic set point over several repeat samples is approximately ± 18% for potassium (95% confidence interval) due to natural day-to-day variations. Thus, potassium needs to change by >14% within a particular patient before a potential significant difference can be considered.

5. Critical potassium results are challenging for physicians, patients and laboratories.

The majority of samples arrive at Lifelabs at the end of the day, and then may take several hours to process. Thus, unfortunately, critical values are usually reported late in the evening, when contacting the physicians can be difficult. The same is true when the physician, or LifeLabs, has to then contact the patient and direct them to the hospital for immediate follow-up.

LifeLabs often receives inquiries about the accuracy of potassium results when a follow-up hospital result is normal. In this case, and after eliminating the rare analytical errors and pre-analytical errors mentioned above, identifying the pre-analytical cause remains elusive. Physicians and patients are both understandably frustrated and there is no clear answer to this issue which has been around for a long time, and spares no laboratory.

LifeLabs has initiated a national quality focus group that has been monitoring the monthly rate of elevated potassium results over the last two years. It is working on various initiatives to identify the most common causes of pseudohpyerkalemia and reduce its rate whenever possible. Our customer service representatives are often invited to do site visits to review site-specific sample collection and transportation processes. They can provide centrifuges when requested or just chat about how we can help or improve things!

POINTS TO REMEMBER:

1. Samples should be spun in a timely fashion. To minimize the chance of a high potassium result due to a delay in centrifugation, it is suggested that patients requiring potassium testing be sent to a LifeLabs collection center whenever possible.
2. LifeLabs is currently distributing updated Specimen Collection Client Information packages, which include information about proper phlebotomy techniques and pre-analytical specimen handling, and information about importance of providing date and time of specimen collection.
3. Please contact our Customer Care Centre at 1-877-849-3637 if you encounter potassium challenges on an on-going basis.

Christine Collier PhD FCACB
Clinical Biochemist

The Importance Of Providing Collection Date And Time On The Requisition

Many pre-analytical factors can adversely affect the quality of test results. When samples are collected by a third party and sent to LifeLabs for analysis, it is important for the laboratory to know when the sample was collected *(see Figure 1)*.

When the sample is not handled according to LifeLabs Test Information Directory, sample stability may be compromised and lead to inaccurate test results.

Samples that arrive in the laboratory without the recorded time and date of collection lead to questioning of the result accuracy and a delay in reporting. **In the event the time and date of collection is unknown, LifeLabs will report the potentially affected result(s) with the following interpretive comment:**

> **"Interpret results with caution and in relation to clinical presentation. Results may be affected because acceptable stability conditions may have been exceeded."**

This will ensure that the health care provider is informed that the result accuracy cannot be confirmed by LifeLabs due to unknown date and/or time of specimen collection.

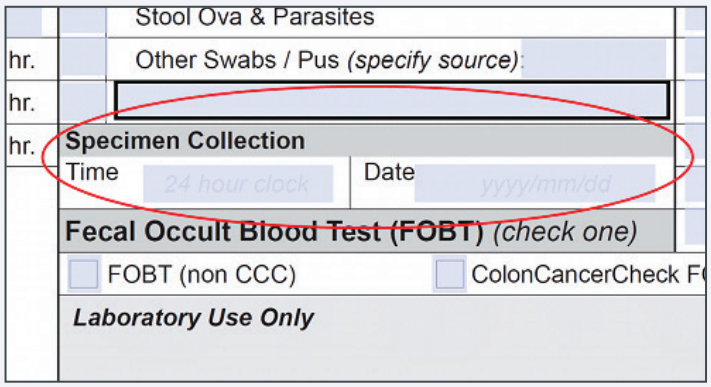


Figure 1.
Portion of OHIP requisition with specimen collection time and date field indicated.

POINT TO REMEMBER:

To ensure accurate results, all specimens, including those collected by a third party, require date and time of collection entered on the requisition *(see Figure 1)*

For further information on specimen handling please visit LifeLabs Test Information Directory: http://tests.lifelabs.com/Laboratory_Test_Information/Homepage.aspx

LifeLabs is dedicated to providing timely quality results to our patients and with your help we can continue to do this!

Please contact the LifeLabs Customer Care Centre 1-877-849-3637 for all enquiries.
We welcome your feedback!

Kika Veljkovic PhD FCACB
Clinical Biochemist

Crystal MacDonald BHSc MLT
Chemistry Operations Manager

Lifelabs Launches The RMA FST™ IgG Food Sensitivity Test To Healthcare Providers In Ontario

In affiliation with Rocky Mountain Analytical (RMA), LifeLabs launches the RMA FST™ IgG Food Sensitivity Test to Ontario Healthcare Providers (HCP) adding to LifeLabs' test offerings.

RMA FST allows HCPs to better assess symptoms that are commonly associated with food sensitivities before having to explore more invasive test options.

RMA offers three different panels; **Enhanced FST, Vegetarian FST, and Basic FST,** providing HCPs with customized options based on their patient's current symptoms and diet.

HCPs can now order RMA FST through a LifeLabs requisition, and patients are able to pay and have their sample collected at any Ontario LifeLabs PSC.

For more information about RMA FST, please visit www.lifelabs.com/foodsensitivitytest

Website Wanderings!

Mayo Clinic Laboratories has an extremely useful and functional website that is an impressive resource for Laboratory Medicine (**https://www.mayomedicallaboratories.com/test-catalog/index.html**).

The site is kept up-to-date, and in fact, often provides leading edge information.

Particularly helpful are the flow diagrams summarizing result interpretation and recommended testing algorithms **(see UTILIZATION MANAGEMENT/ALGORITHMS)**.

Mayo Clinic has always been committed to education, so the **HOT TOPICS, COMMUNIQUÉS, A TEST IN FOCUS and the RESOURCE CENTER** are good places to find concise information.

All of these features make this site a first choice site to answer specific questions related to laboratory testing

Connecting You To Your Health: 2017/2018 Community Report!

LifeLabs is thrilled to share with you 2017/2018 Community Report: Connecting You to Your Health.

This Report shares stories that are meant to be celebrated as well as the impact LifeLabs is making in the lives of Canadians.

In this Report, you will find stories about improving patient care through digital health, transforming the patient experience, personalizing health care, innovating for a healthier environment, and connecting to our communities.

We hope you enjoy reading these stories.
Find the report online at: http://community-report.lifelabs.com/

Corporate Communications Office

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

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