

DATE:	March 22, 2021
TO:	Edmonton Zone and North Zone– Physicians, Nurses, Directors, and Managers
FROM:	Alberta Precision Laboratories (APL) and DynaLIFE Medical Labs
RE:	Provincial standardization of Reference Intervals, Comments and Available Tests: Creatine kinase, Ferritin, urine Osmolality, Total Testosterone, and the Iron and TIBC panel

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Key Messages:

- Effective **April 10th, 2021**, provincially standardized reference intervals (RIs) and comments for several tests will be implemented at APL and DynaLIFE laboratories in Edmonton Zone and North Zone sites to coincide with the launch of Connect Care Wave 3.
- In addition, AM Testosterone and PM Testosterone orderables will be discontinued, leaving a single Total Testosterone orderable (Testosterone, Total; previously “Testosterone, Total, Random”).

Test (abbreviation , units)	Current RIs			New Provincially Standardized RIs	New Result Comment									
	Age	Gender	RI											
Creatine Kinase (CK, U/L)	0 to <2y	All	40-230	<table border="1"> <thead> <tr> <th>Age</th> <th>Gender</th> <th>RI</th> </tr> </thead> <tbody> <tr> <td>All</td> <td>M, U, X</td> <td>30-350</td> </tr> <tr> <td></td> <td>F</td> <td>30-200</td> </tr> </tbody> </table>	Age	Gender	RI	All	M, U, X	30-350		F	30-200	None
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		F	30-200											
	2 to <10y	All	40-220											
	10 to <18y	M	40-200											
F		30-160												
U, X		30-200												
≥18y	M, U, X	<250												
	F	<200												
Ferritin (µg/L)	0 to <6m	All	50- 500	Currently using Provincial RIs	Ferritin concentration should be interpreted within the context of the patient (eg. Inflammation, acute illness) and values less than 30-45 µg/L are associated with iron deficiency.									
	6m to <16y	All	15- 100											
	≥16y	M	30- 500											
		F	20- 300											
		U, X	20- 500											



<p>Osmolality, urine (mmol/kg)</p>	<table border="1"> <thead> <tr> <th>Age</th> <th>Gender</th> <th>RI</th> </tr> </thead> <tbody> <tr> <td>0 to <8d</td> <td>All</td> <td>75-300</td> </tr> <tr> <td>≥8d</td> <td>All</td> <td>250-900</td> </tr> </tbody> </table>	Age	Gender	RI	0 to <8d	All	75-300	≥8d	All	250-900	<table border="1"> <thead> <tr> <th>Age</th> <th>Gender</th> <th>RI</th> </tr> </thead> <tbody> <tr> <td>All</td> <td>All</td> <td>50-1400</td> </tr> </tbody> </table>	Age	Gender	RI	All	All	50-1400	<table border="1"> <thead> <tr> <th>Age</th> <th>Gender</th> <th>RI</th> </tr> </thead> <tbody> <tr> <td>0 to <6m</td> <td>M</td> <td><19.0</td> </tr> <tr> <td>0 to <6m</td> <td>F</td> <td><2.0</td> </tr> <tr> <td>6m to <11y</td> <td>All</td> <td><0.2*</td> </tr> <tr> <td>11 to <15y</td> <td>M</td> <td><20.0*</td> </tr> <tr> <td>15 to <18y</td> <td>M</td> <td>4.0-27.0*</td> </tr> <tr> <td>11 to <18y</td> <td>F</td> <td><1.8*</td> </tr> <tr> <td>≥18y</td> <td>M</td> <td>8.0-35.0**</td> </tr> <tr> <td>≥18y</td> <td>F</td> <td><2.0</td> </tr> <tr> <td>All</td> <td>U, X</td> <td>None***</td> </tr> </tbody> </table>	Age	Gender	RI	0 to <6m	M	<19.0	0 to <6m	F	<2.0	6m to <11y	All	<0.2*	11 to <15y	M	<20.0*	15 to <18y	M	4.0-27.0*	11 to <18y	F	<1.8*	≥18y	M	8.0-35.0**	≥18y	F	<2.0	All	U, X	None***	<p>None</p>
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Iron Saturation Index	Age	Gender	RI	Age	Gender	RI
	0 to <18y	All	0.16-0.60	0 to <18y	All	0.10-0.50
	≥18y	All	0.15-0.50	≥18y	M	0.12-0.60
					F	0.10-0.55
					U, X	0.10-0.60

d = days; m = months; y = years; M = Male; F = Female; U = Unknown Sex; X = Gender X

Why this is important:

- All sites currently live with Connect Care (i.e. Waves 1 and 2) will adopt the new provincially standardized RIs and comments.
- There are no changes to the testing methods in use, but the RI and comment changes will provide more robust and accurate guidance for result interpretation that is reflective of the Alberta population, and will support ongoing provincial laboratory standardization efforts.
- Consolidating total testosterone testing to a single orderable is supported by provincial data and endorsed by the Division of Endocrinology in Edmonton and Calgary.

Action Required:

- Be aware that all sites currently live with Connect Care will have new RIs and/or comments for CK, Ferritin, urine Osmolality, Total Testosterone, and the Iron and TIBC panel (Iron, TIBC, Iron Saturation Index).
- Note that AM and PM Testosterone orderables will no longer be available, leaving a single Total Testosterone orderable option (Testosterone, Total).

Inquiries and feedback may be directed to:

- Dr. Albert Tsui, Clinical Biochemist, APL, 587-782-2674 or albert.tsui@aplabs.ca
- Dr. Josh Raizman, Clinical Biochemist, APL, 780-718-2402 or josh.raizman@aplabs.ca
- DynaLIFE Clinical Chemists, 780-451-3702 ext. 3572 or clinical.chemists@dynalife.ca

This bulletin has been reviewed and approved by:

- Dr. Mathew Estey, Director of Chemistry, DynaLIFE Medical Labs
- Dr. Michael Mengel, Medical Director, North Sector, APL
- Dr. Kareena Schnabl, Section Chief, Clinical Biochemistry, North Sector, APL