

<b>DATE:</b>	1 April 2024
<b>TO:</b>	All Zones: All Healthcare Professionals
<b>FROM:</b>	Clinical Biochemistry, Alberta Precision Laboratories (APL)
<b>RE:</b>	<b>Updates to Bioavailable Testosterone and Free Testosterone</b>

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### Key Message

- Effective Thursday April 4, 2024, Bioavailable Testosterone (BAT) will be available to order on all patients provincially and will be added to the University of Alberta Hospital (UAH) Special Chemistry Laboratory test menu.
- BAT and Free Testosterone (FT) should only be ordered as second line tests to confirm low Total Testosterone results or when the carrier protein, sex hormone binding globulin (SHBG), is altered. These scenarios are most common in diagnosis of hypogonadism in males.
- Several other laboratory changes will be made to FT and BAT (see Appendix for more details).
- APL is currently reviewing provincial data to improve test utilization by developing a testosterone reflex algorithm within the next year.

### Background

- FT and BAT results are calculated using Total Testosterone, SHBG, and Albumin.
- BAT was historically only available as a patient pay test or subject to biochemist approval. These criteria are now being removed.
- BAT is currently performed at the Diagnostic and Scientific Centre (DSC) in Calgary. Addition of BAT to the UAH Special Chemistry menu will improve access across the province.
- FT is still available at UAH and DSC.
- Reporting changes at UAH are being made to align with DSC and standardize testing.

### Action Required

- Testosterone, Bioavailable, Calculated (Connect Care ID: LAB839) is now available to order on all patients.
- Be aware that FT and BAT at UAH will be reported as a panel that will list all the components and their results.
- Refer to the Test Directory for information on sample collection and reference intervals.

### Questions/Concerns

- Dr. Josh Raizman, Clinical Biochemist APL, [josh.raizman@aplabs.ca](mailto:josh.raizman@aplabs.ca), 780-718-2402
- Dr. Dennis Orton, Clinical Biochemist APL, [dennis.orton@aplabs.ca](mailto:dennis.orton@aplabs.ca), 403-770-3219

### Approved by

- Dr. Kareena Schnabl, Section Chief, Clinical Biochemistry, APL
- Dr. Allison Venner, Associate Section Chief, Clinical Biochemistry, APL
- Dr. Michael Mengel, Medical Director, North Sector, APL
- Dr. Paul Klonowski, Associate Medical Director, South Sector, APL



## Appendix

What's being changed at UAH and DSC	Current state	New state
Ordering and reporting name in Epic	<ul style="list-style-type: none"><li>• Testosterone, Free</li><li>• Testosterone, Bioavailable</li></ul>	<ul style="list-style-type: none"><li>• Testosterone, Free, Calculated</li><li>• Testosterone, Bioavailable, Calculated</li></ul>
BAT testing criteria	<ul style="list-style-type: none"><li>• Patient-pay or biochemist approval</li></ul>	<ul style="list-style-type: none"><li>• Removal of patient pay and biochemist approval when clinically indicated</li><li>• Addition of Testosterone, Bioavailable orderable (LAB839) to the UAH Special Chemistry test menu</li></ul>
Result reporting at UAH	<ul style="list-style-type: none"><li>• The calculation components* are not reported to chart</li></ul>	<ul style="list-style-type: none"><li>• All calculation components* are reported to chart as a panel</li></ul>
Testosterone, Bioavailable, Measured REF orderable (LAB9991)	<ul style="list-style-type: none"><li>• Referred out of province if approved by the biochemist when clinically indicated</li></ul>	<ul style="list-style-type: none"><li>• Test code is being deactivated.</li><li>• All testing now routes to UAH or DSC for Testosterone, Bioavailable, Calculated (LAB839)</li></ul>

\*The following components are used for calculation of FT and BAT: Total Testosterone, Sex Hormone Binding Globulin (SBHG), and Albumin.

*Effective September 1, 2023, APL has become the sole provider of all public lab services in Alberta. As a result, community lab services formally provided by DynaLIFE Medical Labs will become the responsibility of Alberta Precision Labs (APL). This change impacts all zones.*