



# Laboratory Medicine Bulletin

## METHOD CHANGE AFFECTING MULTIPLE LABORATORY TESTS

July 28, 2016

As of the week of July 26 2016, the Providence Health Care laboratories will be changing chemistry analyzers to the Roche platforms. The laboratory tests affected by this transition were previously performed on the Siemens IMMULITE® and include:

| Analyte                          | New Reference Range(s)? | Comment  |
|----------------------------------|-------------------------|--|
| Growth Hormone                   | Y                       | See separate bulletin <a href="#">here</a> .         |
| Thyroglobulin                    | Y                       | See separate bulletin <a href="#">here</a> .         |
| Anti-Thyroglobulin Antibody      | Y                       |  |
| Anti-Thyroid Peroxidase Antibody | Y                       | See following pages for updated reference intervals. |
| ACTH                             | Y                       |  |
| DHEAS                            | Y                       |  |
| Estradiol                        | Y                       |  |
| Progesterone                     | Y                       |  |
| FSH                              | Y                       |  |
| LH                               | Y                       |  |
| Prolactin                        | Y                       |  |
| SHBG                             | Y                       |  |
| Calcitonin                       | N                       |  |

Should you have any questions regarding a specific test, please do not hesitate to contact us.



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## UPDATED REFERENCE INTERVALS

### Anti-Thyroid Peroxidase Antibody (ATPO)

| Age         | ATPO (kIU/L) |
|-------------|--------------|
| 0 to <6 D   | <117         |
| 6 D to <4 M | <47          |
| 4 M to <1 Y | <32          |
| 1 to <7 Y   | <13          |
| 7 to <12 Y  | <18          |
| 12 to <21 Y | <26          |
| ≥21 Y       | <34          |

### Adrenocorticotrophic Hormone (ACTH)

| Age | ACTH (pmol/L) |
|-----|---------------|
| All | <14           |

Reference interval applies to collections between 7 AM and 10 AM, or within the first 3 hours of waking. Assay interference possible in the presence of elevated quantities of ACTH fragments, precursors and synthetic analogues.

### Dehydroepiandrosterone Sulfate (DHEAS)

| Age          | DHEAS (μmol/L) |            |
|--------------|----------------|------------|
|              | Male           | Female     |
| 0 to <7 D    | 2.9 – 16.5     |            |
| 7 to <28 D   | 0.9 – 11.7     |            |
| 28 D to <1 Y | <3.4           |            |
| 1 to <5 Y    | <0.5           |            |
| 5 to <10 Y   | <2.3           |            |
| 10 to <15 Y  | 0.7 – 6.7      | 0.9 – 7.6  |
| 15 to <20 Y  | 1.9 – 13.4     | 1.8 – 10.0 |
| 20 to <25 Y  | 5.7 – 13.4     | 4.0 – 11.0 |
| 25 to <35 Y  | 4.3 – 12.2     | 2.7 – 9.2  |
| 35 to <45 Y  | 2.4 – 11.6     | 1.7 – 9.2  |
| 45 to <55 Y  | 1.2 – 9.0      | 1.0 – 7.0  |
| 55 to <65 Y  | 1.4 – 8.0      | 0.5 – 5.6  |
| 65 to <75 Y  | 0.9 – 6.8      | 0.3 – 6.7  |
| ≥75 Y        | 0.4 – 3.3      | 0.3 – 4.2  |

## UPDATED REFERENCE INTERVALS

### Estradiol

| Age       | Estradiol (pmol/L) |        |
|-----------|--------------------|--------|
|           | Male               | Female |
| 0 to <1   | <90                | <133   |
| 1 to <5   | <90                | <90    |
| 5 to <10  | <90                | <150   |
| 10 to <14 | <125               | <855   |
| 14 to <55 | <150               | *      |
| ≥55       | 95 - 220           | <90    |

\*Adult female estradiol reference ranges: Follicular <850 pmol/L, Mid-Cycle 150-1460 pmol/L, Luteal <1250 pmol/L, Post-Menopausal <90 pmol/L.

### Progesterone

| Progesterone (nmol/L) |      |           |        |
|-----------------------|------|-----------|--------|
| Age                   | Male | Age       | Female |
| 0 to <1               | <2   | 0 to <1   | <31    |
| 1 to <14              | <2   | 1 to <8   | <2     |
| 14 to <19             | <4   | 8 to <13  | <3     |
| ≥19                   | <1   | 13 to <15 | <21    |
|                       |      | ≥15       | *      |

\*Adult female progesterone reference ranges: Follicular <3 nmol/L, Mid-Cycle <38 nmol/L, Luteal <76 nmol/L, Post-Menopausal <1 nmol/L. To confirm ovulation >10 nmol/L. Adequate luteal phase >20 nmol/L.

## UPDATED REFERENCE INTERVALS

### Follicle-Stimulating Hormone (FSH)

| Age          | FSH (IU/L) |            |
|--------------|------------|------------|
|              | Male       | Female     |
| <28 D        | --         | --         |
| 28 D to <6 M | 0.2 – 4.1  | 0.2 – 14.2 |
| 6 M to <3 Y  | 0.3 – 2.2  | 1.4 – 8.0  |
| 3 to <5Y     | 0.3 – 2.3  | 0.6 – 5.0  |
| 5 to <7 Y    | 0.3 – 2.0  | 0.5 – 3.2  |
| 7 to <10 Y   | 0.3 – 2.6  | 0.4 – 4.4  |
| 10 to <13 Y  | 0.5 – 4.9  | 0.7 – 8.3  |
| 13 to <16 Y  | 1.1 – 7.4  | 1.0 – 9.1  |
| 16 to <18 Y  | 0.9 – 7.8  | 0.4 – 9.9  |
| ≥18 Y        | 1.5 – 12.4 | *          |

\*Adult female FSH reference ranges: Follicular 3.5-12.5 IU/L, Mid-Cycle 4.7-21.5 IU/L, Luteal 1.7-7.7 IU/L, Post-Menopausal (age >55) 25.8-134.8 IU/L.

### Luteinizing Hormone (LH)

| Age         | LH (IU/L) |        |
|-------------|-----------|--------|
|             | Male      | Female |
| 0 to <7 Y   | --        | --     |
| 7 to <10 Y  | ≤0.7      | ≤0.7   |
| 10 to <13 Y | ≤3.4      | ≤6.8   |
| 13 to <16 Y | ≤5.6      | ≤23.0  |
| 16 to <18 Y | 1.1 – 9.0 | ≤26.4  |
| ≥18 Y       | 1.7 – 8.6 | *      |

\*Adult female LH reference ranges: Follicular 2.4-12.6 IU/L, Mid-Cycle 14.0-95.6 IU/L, Luteal 1.0-11.4 IU/L, Post-Menopausal (age >55) 7.7-58.5 IU/L.

## UPDATED REFERENCE INTERVALS

### Prolactin

| Age  | Prolactin ( $\mu\text{g/L}$ ) |        |
|------|-------------------------------|--------|
|      | Male                          | Female |
| >1 Y | <15                           | <23    |

### Sex Hormone-binding Globulin (SHBG)

| Age         | SHBG (nmol/L) |          |
|-------------|---------------|----------|
|             | Male          | Female   |
| 0 to <1 M   | 13 - 85       | 14 - 60  |
| 1 M to <1 Y | 70 - 250      | 60 - 215 |
| 1 to <4 Y   | 50 - 180      | 60 - 190 |
| 4 to <7 Y   | 45 - 175      | 55 - 170 |
| 7 to <10 Y  | 28 - 190      | 35 - 170 |
| 10 to <13 Y | 23 - 160      | 17 - 155 |
| 13 to <16 Y | 13 - 140      | 11 - 120 |
| 16 to <18 Y | 10 - 60       | 19 - 145 |
| 18 to <50 Y | 18 - 54       | 32 - 128 |
| $\geq 50$ Y | 21 - 77       | 27 - 128 |