

**DIABETES CARE – THE ALBUMIN TO CREATININE RATIO (ACR)**

Current guidelines for Diabetic Care recommend that diabetic patients who are protein-negative by dipstick should undergo testing for the ratio of urinary Albumin to Creatinine – the AC ratio or ACR. (“Albumin” is now preferred to the previously used name “microalbumin”.)

At MDS Metro, a request for ACR (or Albumin Creatinine Ratio) will be reported as a numeric ratio without the results of the component analytes. The important ranges are:

	Female (mg/mmol)	Male (mg/mmol)
Normal	< 2.8	< 2.0
Equivocal	2.8 - 28	2 - 20
Abnormal	> 28	> 20

If the ACR is equivocal, the test should be repeated. Considerable biological variation can be expected and very dilute urines may be below the analytical limit.

**FREE TESTOSTERONE AND BIOAVAILABLE TESTOSTERONE**

We are discontinuing the direct radioimmunoassay “kit” method for Free Testosterone and instead will provide a set of results that include Total Testosterone, Sex Hormone Binding Globulin, Free Testosterone, and Bioavailable Testosterone (BAT). The latter two parameters will be computed from the mass action equation of Vermeulen<sup>1</sup> that has been shown to be superior to all direct methods<sup>2,3</sup>. The panel has been available through MDS Metro for three years and has become the most common way to evaluate testosterone. This full panel will cost the same as a Total Testosterone or a Free Testosterone. It can be obtained by requesting BAT.

1. Vermeulen A, Verdonck L, Kaufman JM. A critical evaluation of simple methods for the estimation of free testosterone in serum. *J Clin Endocrinol Metab.* 1999;84(10):3666-72.
2. Van Uytendange K, et. al. Validation of 5 routine assays for serum free testosterone with a candidate reference measurement procedure based on ultrafiltration and isotope dilution-gas chromatography-mass spectrometry. *Clin Biochem.* 2005; 38(3): 253-61.
3. Morley, JE, et. al. Evaluation of assays available to measure Free Testosterone. *Metabolism* 2002; 51(5): 554-559.

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## **THYROID PROTOCOL**

Effective August 3<sup>rd</sup>, MDS Metro will fully computerize the most recent MSP Guideline (2004) for the investigation of thyroid disease. This guideline is intended for individuals 19 years and older and in most cases the TSH alone is recommended as the first-line laboratory investigation (instead of TSH or total T4).

Our laboratory has already discontinued offering total T4 that will be replaced by free T4 (fT4) when appropriate. When tests other than TSH are required, the requesting physician must follow the Guideline and provide relevant clinical information on the requisition (*eg* thyroid suppressive therapy, treated hyperthyroidism, suspected pituitary disease, *etc*).

For further information, please refer to the MSP guideline:  
<http://www.hlth.gov.bc.ca/msp/protoguides/gps/thyroid.pdf>.

## **HARD-COPY REPORT FORMAT CHANGES**

We are in the process of gradually standardizing and updating the format of our hard-copy reports. For example, we will begin to introduce internationally recognized prefixes that denote the sample type (e.g. s- for serum, p- for plasma, and u- for urine).

## **NEW METHODS FOR ALDOSTERONE AND RENIN**

We are now converting our manual radioimmunoassay methods for renin and aldosterone to an automated instrument developed by the Nichol's Institute. There will be no noticeable difference in aldosterone assay results. However, plasma renins will be reported in mass units (ng/L) rather than the traditional catalytic rate ( $\text{ng}\cdot\text{L}^{-1}\cdot\text{s}^{-1}$ ). The Aldosterone: Renin Ratio (ARR) normal range of < 30 (abnormal >50) will rise to become normal <100 (abnormal >150).

## **NEW SCREENING DILUTION FOR ANTINUCLEAR ANTIBODY (ANA) TESTING**

The introduction of the human Hep-2 cell line for ANA has provided enhanced sensitivity, but reduced specificity. A screening dilution of 1:40 among an apparently healthy population can result in 20-30% positives, most of which will prove to be of no clinical significance. In order to improve the specificity of this test, while still maintaining excellent sensitivity, MDS Metro will change the screening dilution for ANA from 1:40 to 1:80. For further information on ANA testing, see the MSP Guideline:  
<http://www.hlth.gov.bc.ca/msp/protoguides/gps/ana.pdf> .

## **DIAGNOSIS OF LACTASE DEFICIENCY (LACTOSE INTOLERANCE)**

It has been recognized for some time that the best practical test for the diagnosis of Lactase Deficiency is the Lactose Tolerance Test using breath hydrogen measurements as the marker of sugar malabsorption. This test is now available to the Lower Mainland by contacting the MLS Appointment Desk (604-412-4495) for an appointment. On the Island, appointments are taken in several Patient Service Centres (Royal Oak 250-479-9919, Fort 250-595-1211, CML Nanaimo 250-754-7524, Courtenay 250-334-4745.)

Newcomer AD, McGill DB, Thomas PJ, Hofman AF. Prospective comparison of indirect methods for detecting lactase deficiency. *N Engl J Med.* 1975 Dec 11; 293(24): 1232-6.