

BIOLAB MEDICAL UNIT

Newsletter, October 2008

New laboratory opens

Biolab has opened a new purpose built laboratory in West London which is now undertaking some of our routine work and a considerable amount of method development work. The laboratory has been equipped to the highest standards, incorporating the latest technology in laboratory instrumentation and equipment. This new facility is solely for our analytical work; our head office, patient facilities and all contacts remain at Weymouth Street. Samples are collected and prepared at Weymouth Street and transported to the new laboratory for analysis. The phased move of methods to the new laboratory avoids any disruption to our work.

We are developing a number of new and improved tests which we hope will be of benefit to your patients.



Increase in test prices

Our test prices will increase by around 10% as of 1st October 2008 due to significant increases in the cost of supplies and services. Biolab test prices were last increased in 2004 and we are pleased to have been able to absorb increasing costs up to this point. We continue to strive to offer you and your patients the best possible tests and excellent service at affordable prices.

The London Clinic, to whom we refer most our routine pathology requests, are also increasing their prices by around 6% on 1st October.

Regular Biolab users will receive an updated Biolab laboratory guide with this newsletter and our web site will be updated with the new prices over the weekend of 27th/28th September 2008. If you have not received a laboratory guide and would like a copy please contact us, or it can be downloaded from our web site at www.biolab.co.uk/datashet.html (or search for *lab guide* from our home page).

New & Updated Tests

Breath hydrogen measurements for small intestinal bacterial overgrowth

We have recently introduced a new breath hydrogen (and methane) measurement system for the identification of small intestinal bacterial overgrowth, adopting the internationally recognised "Rome" protocol. We report breath hydrogen and methane levels at 20 minute intervals for 3 hours. Patients should fast for 12 hours prior to the test and only drink water. The test is available by appointment only and the test fee is £77.

A variation on this test can also be used for diagnosing lactose intolerance (hourly measurements following lactose ingestion) - test fee £44.

A test datasheet and sample report can be downloaded from our web site (www.biolab.co.uk/gut.html), or search for *breath* from our home page).

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Vitamin D profiles

Biolab now offers a chromatographic vitamin D assay which separates and quantifies vitamin D3 (cholecalciferol) and vitamin D2 (ergocalciferol), the vitamins of most interest in the assessment of vitamin D status in humans. While many commercial, antibody-based vitamin D assays do not distinguish between these two forms of the vitamin, variations in the cross-reactivity of the antibodies has led to some confusion over the results, especially in subjects who may be receiving either vitamin D3 or vitamin D2 supplementation.

A test datasheet and sample report can be downloaded from our web site (www.biolab.co.uk/vitamins.html), or search for *vitamin D* from our home page).

Samples (clotted blood or serum - gold top Vacutainer tube) can be submitted by post and should reach Biolab within 24 hours of collection. The test fee is £40.

Iodine

Iodine is required in small amounts by humans, the current RDA being 150 micrograms per day; the only known function of iodine in man is as a component of the secretions of the thyroid gland, principally tri-iodothyronine and thyroxine. Iodine is one of the halogen series of elements (along with fluorine, chlorine and bromine); it was formerly used as an antiseptic, but is now regarded as too toxic for that purpose. Tissue saturation of bio-available iodine partly depends on iodine intake, but also intake of the other halogens which compete with iodine for absorption and cellular uptake.

80 - 90% of the total serum iodine is incorporated into thyroxine, which is largely protein bound; the remainder of the serum iodine in the form of iodide is filtered freely at the glomerulus and passes into the formed urine.

Tissue de-saturation of iodine can be assessed from the increment in iodine excretion (mg/24 hours) over two sequential 24 hour urine collections and the dose of administered iodine (mg); the "fractional retention" of iodine is calculated.

We now measure urine iodine levels at Biolab (test fee £23), further details are available on request, or can be found on our web site (www.biolab.co.uk/minerals.html) - or search for *iodine*. The preferred sample is a 24 hour urine collection (or a well mixed aliquot with an accurately measured total volume).

Copies of all Biolab documentation, and up to date news and information, can be found on our web site at www.biolab.co.uk

Phosphate

We have recently introduced a new method for measuring serum phosphate levels. Phosphate is the major intracellular anion and its metabolism is closely linked to that of calcium. Indications include muscle weakness, bone pain, suspected bone disease, renal disease (including nephrolithiasis), increased alcohol consumption, and poor vitamin D status.

Mild hypophosphataemia is relatively common, but a serum low phosphate can have a profound effect on all organ systems.

A low serum phosphate can have many causes including: poor diet, malabsorption, redistribution between the intracellular and extracellular fluids (phosphate moves into cells with glucose) as occurs with athletics and body-building, as well as insulin therapy, hepatic disease, increased excretion (for example diuretic therapy), hypomagnesaemia and ethanol abuse.

The test fee is £21 and we require a clotted blood sample (gold top tube) that should reach the laboratory within 24 hours of collection.

Superoxide Dismutase

Superoxide dismutase is an intracellular enzyme that catalyses the dismutation of $O_2^{\bullet-}$ to H_2O_2 , thus helping to protect the cell from oxidative damage. Essential dietary cofactors are zinc and copper.

The activity of superoxide dismutase in an erythrocyte lysate can be determined from its inhibition of the formation of $O_2^{\bullet-}$ generated by xanthine oxidase. The assay is standardised with 5 solutions of known SOD activity and the % inhibition of the reaction by samples is used to derive a SOD activity, which is reported per gram of haemoglobin.

Low values suggest intracellular deficiencies of zinc and copper, high values are indicative of oxidative stress.

A lithium heparin blood sample is required (green top Vacutainer tube) and the test fee is £23. The test datasheet can be downloaded from our web site at: www.biolab.co.uk/datashet.html

Biolab Workshop audio recordings

Audio recordings of Biolab workshop lectures and presentations dating back to 1997, covering most areas of our work, are now available on CD with copies of hand-outs on CD-ROM, for minimal charge to doctors and other practitioners interested in our work. For a list of these recordings please E-mail christine@biolab.co.uk, or give us a call.

Suggestions

As always we welcome your comments and feedback on any aspects of our work, and suggestions for new tests that are not routinely available at other laboratories.

Thank you for your continued support.