Normal Labs & Eating Disorders; A Clinical Conundrum

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The clinical concern causing wrinkles across my forehead are often greeted by a puzzled smile flashing across a gaunt faces exclaiming: “I am okay! My labs are normal!” With a Grinchy feeling in my stomach, I take ȧ deep breath and explain why normal labs are “normal” and not an indicator of health or recovery. Eating disorders (EDs) are a group of mental illnesses resulting in significant medical comorbidities. The diagnostic and recovery criteria for any eating disorder does not include laboratory abnormalities. Abnormal laboratory values provide diagnostic “hints” to a physician that aid in the diagnosis of an ED or the diagnosis of a comorbid complication of an ED. These results, however, are often normal. In a recent study, 60% of patients admitted to an eating disorders treatment center with BMIs between 17-20 had normal laboratory evaluations. Less than half of patients with BMIs less than 14.5 (severe anorexia) had abnormal laboratory results. Indeed, the diagnosis of an ED is based on psychopathology related to body image, food, and mental distress. The use of laboratory data without a multidisciplinary evaluation result in delayed diagnosis and treatment of eating disorders.

Despite the high incidence of normal lab results in ED Patients, there is significant value in obtaining labs. Baseline labs are obtained upon the initial treatment and diagnosis of an ED to rule out underlying disease processes. Thyroid disorders, autoimmune diseases, malignancies, and gastrointestinal illnesses may present as an ED. Malnourished patients may have thyroid abnormalities that will self-correct with weight restoration.

In other instances, slight elevations or low lab values may be overlooked by physicians who do not suspect an underlying ED. For instance, low white and red cell blood counts are common in malnourished patients. If the value is not significantly low, a physician may be inclined to wait and repeat the value in 3-6 months. This is reasonable if a patient doesn’t have an ED. A “low normal” glucose value can also be overlooked but can be a clue that a malnourished ED patient is suffering from postprandial hypoglycemia secondary to low liver glycogen and glucose stores. Abnormal electrolytes may indicate laxative or diuretic abuse. Current ED research is investigating potential laboratory tests for hormones that may be pathognomonic for EDs such as Leptin and neuropeptide values.

The establishment of a patient’s baseline laboratory values is imperative during the weight restoration and recovery process. Clinically, labs may be monitored from baseline values to indicate persistent laxative or diuretic abuse, dehydration, or fluid loading. Most significantly, labs monitor for refeeding syndrome which is potentially life threatening and can occur in up to 62 % of weight restoring ED patients. After a thorough history, more specific laboratory tests may be ordered for individual patients. These labs may test specific underling diseases like PCOS, vitamin deficiencies, and hormone deficiencies.

Normal laboratory results can give false reassurance if one assumes normal laboratory values rule out disease.

A patient in the emergency room with an open wound or fracture may also have normal labs despite clearly not being “okay”. Likewise, the normal laboratory values of an ED masquerade underlying muscle wasting, bone reabsorption, low cardiac output, dental disease, cognitive impairment, and gastrointestinal tract damage smoldering beneath the surface of all EDs. Any patient that has restricted for longer than six months has an increased fracture risk. ED studies show that patients with ED have an increased risk of overall mortality from all causes over the general population. These risks are not objectively found on laboratory tests. These impairments and risks may improve with recovery but have the potential for life-long, life altering consequences.

Laboratory tests are adjunctive tools in the treatment of Eds; they are not diagnostic and therefore are not an indicator of recovery. Laboratory results give insight into a patient’s clinical risk and status. Normal labs aid in recovery as they allow us to push nutrition without compromising the patient’s well-being, they allow the treatment of underling ailments and provide concrete evidence of organ function or dysfunction. The wrinkles on my forehead see a patient fighting for recovery. The metabolic balance on the lab report before us is proof of the resiliency of the human body and our capacity to heal.

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BASELINE LABS TO OBTAIN FOR EATING DISORDERS

LAB TEST	RESULTS	INTERPRETATION
CBC	LOW RBC, WBC	Bone marrow suppression
	Low H/H	Bone marrow suppression, GI bleed
Comprehensive Metabolic Panel		
	Low Glucose (low normal)	Malnutrition, low liver glycogen stores, at risk for nocturnal hypoglycemia and coma
	High CO	purging
	Low K+	Purging, laxative use
	Low PO4	Refeeding syndrome
	High PO4	Bulimia, laxative use
	High AST/ALT	Refeeding, severe malnutrition
	Low MG	Refeeding syndrome
	High MG	Laxative abuse
	Elevated BUN	Dehydration, laxative use, diuretic use
TFTs	Low T4/T3	Sick euthyroid
	NML TSH	Sick euthyroid
	Elevated reverse T3	Sick Euthyroid
ESR	Elevated	Underlying Disease State
Ferritin	Low	malnutrition
	High	Acute Phase Reactant

EKG FINDINGS IN EATING DISORDERS

These findings are a result of decreased cardiac mass from malnutrition. It is beneficial to obtain supine and standing EKGS.

-Low amp QRS and p waves
-Bradycardia
- Right axis deviation
-Nonspecific ST segment and T wave abnormalities
-PROLONGED QTc abnormalities

-U waves: Hypokalemia, Low magnesium