LIVING IN GRACE FOUNDATION
thriving not just surviving

EATING DISORDERS COMMON LAB TESTS AND WHAT THEY MEAN

Tests and their Meanings

Complete Blood Count (CBC)

White Blood Cells (WBC), Red Blood Cells (RBC), Hematocrit (HCT), Mean Corpuscular Volume (MCV), Hemoglobin (HGB), Platelets, and Vitamins

Hemoglobin (HGB): hemoglobin, a protein found in red blood cells, is the name of hemoglobin. It's responsible for transporting oxygen throughout the body. Your body will not make enough red blood cells if it does not have enough vitamins and minerals. This can lead to anemia and low hemoglobin levels. Normal hemoglobin levels depend on gender and age.

Hematocrit (HCT) is the proportion of blood that contains red blood cells. It is often expressed in percentages. Inadequate intake of vitamins/minerals like iron, vitamin B12, and folate can lead to low hematocrit levels. It can also be caused by malnutrition or restriction. Dehydration can cause high levels. Normal hematocrit levels depend on gender and age.

MCV reflects the size of the RBCs

Platelets show blood clotting abilities.

Serum iron (Fe): This is the amount iron found in your serum, which is the liquid left over after red blood cells and other clotting factors have been removed. If you have eaten too much iron or not enough, your serum iron level can be very high. A person with an eating disorder may have low serum iron. Iron is essential for the body as it transports oxygen from the lungs into the body. You may feel tired, weak, short-tempered, or lightheaded if you don't get enough iron.

Serum ferritin: This is the measurement of how much iron your body has. A low serum ferritin level is common in people with eating disorders who are not getting enough iron-rich food.

Zinc: is an important mineral that aids in many bodily functions such as the support of the immune system and growth as well as wound healing. In the case of a restriction on zinc-rich foods or inadequate intake, a low serum zinc level may occur.

Vitamin B12: Vitamin B12 is an essential vitamin that the body needs to maintain nerve function, make DNA and produce blood cells. Inadequate intake of vitamin B12-rich foods or malnutrition can lead to low levels. Vegetarians and vegans are at greatest risk of vitamin B12 deficiency. A low level of vitamin B12 can cause permanent nerve damage.

Folate: Folate is a B Vitamin that is necessary for cell growth, red blood cell production, and DNA replication. Inadequate folate intake or malnutrition can lead to low folate levels. Low folate levels can also occur in cases of B12 deficiency.

Vitamin D: This is vital in helping to absorb calcium and maintain bone health. Low levels of vitamin D can be caused by a lack of vitamin D, particularly in the context of strict restrictions and lack of sunlight exposure.

Metabolic Panel(Albumin, total protein, calcium, sodium, potassium, bicarbonate, chloride, BUN)

To assess your metabolism and how energy is being used by your body to function, a complete metabolic panel is necessary.

These results can be used to determine electrolyte balance and the health of your liver and kidneys, as well as acid-base balance and your sugar and protein levels.

In the context of eating disorders, these lab results are often monitored.

Here is a list of the most important metabolic lab results and how to interpret them in relation to an eating disorder.

Glucose is another name for the sugar found in your blood. To keep the body functioning properly, glucose is used as the main energy source. If you don't eat enough or aren't properly nourished, your blood sugar may drop to dangerous levels. Low blood sugar can cause confusion because the brain depends on glucose for its primary energy source. This can cause dizziness, seizures, and loss of consciousness.

Albumin: A protein found in the blood, albumin. This lab is often drawn to check for protein status. The half-life of albumin is 2 weeks. This means it is not an indicator of recent protein intakes. Infection, trauma, kidney disease, and dehydration can all cause a decrease in albumin levels. An eating disorder can lead to low albumin levels due to malnutrition or chronic low protein intakes.

Prealbumin: another protein found in the blood, is also known. Prealbumin has a shorter half-life than albumin (only 2 to 3 days), so it provides a better indication of recent protein intakes as well as protein loss. It can become low in times of stress, infection or trauma. A low prealbumin level can indicate an eating disorder. This could be due to low protein intake, inadequate zinc, malnutrition, or a lack thereof.

BUN: The blood urea nitrogen test is used to assess kidney function. Low levels may indicate dehydration. Low levels could indicate malnutrition, or excessive water intake. People with eating disorders may drink a lot of water to increase their weight (also known as "fluid loading").

Creatinine: This is a waste product that the body produces when it breaks down muscle tissue. This waste product is removed by the kidneys. If your kidneys don't function properly, if there is a lot of protein in your diet, or if you exercise a lot, high creatinine levels could

occur. Low creatinine levels can be caused by malnutrition, extreme weight loss, and low muscle mass. Creatinine levels are affected by gender and age.

Calcium: Calcium is an important mineral and electrolyte found in the blood. Calcium is important for the structure and strength of bones and teeth. Long-term use of diuretics and purging can cause a drop in serum calcium. This can lead to a decrease in heart rhythms and bone calcium (which can cause osteoporosis). Ionized calcium: Ionized calcium is different to serum calcium. This indicator is better than serum calcium for calcium status (how much calcium is in the body). High levels of ionized calcium may be due to excessive vitamin D intake. Low levels of calcium could be caused by malnutrition, vitamin D deficiency, or malabsorption.

Sodium: Sodium is an important mineral and electrolyte found in the blood. The situation may dictate whether sodium levels are high or low for patients with eating disorders. Your sodium levels can rise if you are severely dehydrated or malnourished. Your sodium may be lower if you're water-loading to make your weight appear higher. If you take diuretics, sodium can be very low.

Phosphorous: The body's most important mineral or electrolyte is phosphorous. It may be reduced in the early stages of treatment for an eating disorder. This is known as "refeeding Syndrome". It is a condition where electrolytes are imbalanced after a period without nutrition. Due to fluid shifts, phosphorus can drop dangerously low. Low levels of phosphorus can cause abnormal heart rhythms. During refeeding, your treatment team will be very attentive to this mineral.

Potassium: The level of potassium in patients with eating disorders can vary depending on their situation. If you are malnourished or dehydrated, your potassium levels will be higher. Refeeding syndrome can lead to low potassium. A low potassium level can cause cardiac arrest.

Magnesium: Magnesium can be low during laxative use, purging or refeeding syndrome.

Chloride: Depending on the circumstances, your level of chloride may be either high or low for eating disorder patients. Your chloride may be very high if you are extremely dehydrated. Your chloride may be high if you are water loading to make weight appear higher, purging or malnourished.

Amylase: monitors pancreas health

Liver Panel (LFTs) or liver function tests - Alkaline Phosphate (ALP), ALT/SGP, and AST

Elevated liver enzymes can indicate liver disease or inflammation. It is often seen in anorexia when the body is breaking down muscle and fat cells for fuel. The liver is the organ responsible for breaking it down and can cause damage.

Lipid Profile (LDL, HDL, Cholesterol)

The lipid panel shows the amount of different types of fats present in our blood. While fats are essential for proper body function, a healthy balance must be maintained. Eating disorders can lead to lipid changes.

A lipid panel includes the following tests.

Total cholesterol: This is the amount of fat found in your blood. It is essential for cell membrane formation, hormone production, and the creation of substances that can absorb nutrients. High levels of cholesterol can be linked to genetics and diet. This increases the risk of developing cardiovascular disease. High cholesterol levels are common in eating disorders. High cholesterol levels can be caused by a dysfunctional liver or a malnutrition-related inability to regulate hormones. A high level of cholesterol can be caused by an eating disorder. If this is the case, a low-fat diet is not necessary.

HDL cholesterol: This is the cholesterol that lowers your risk of developing heart disease.

LDL cholesterol: This is the type that can increase your risk of developing heart disease.

Triglycerides is another type fat found in the blood. This type of fat is used by the body as an energy source. A higher risk of developing heart disease has been associated with high levels.

Thyroid Panel - Thyroid Stimulating Hormone (TSH), T3 and T4

In some eating disorders, the thyroid can become affected. Hypothyroidism (or low) can be a result of malnutrition and starvation.

Full Vital Signs

Blood pressure: This is the measurement of blood pressure. It's the pressure that the heart exerts to move blood around the body. If you don't eat enough or drink enough, your blood pressure may drop. This can lead to dizziness, lightheadedness, fainting, and blood pressure dropping too low when you stand up or sit down. Rehydration and nutrition are the best ways to bring blood pressure back to a normal level. Low blood pressure is defined as a blood pressure below 90 mm Hg systolic and 60 mmHg diastolic.

Temperature: If the body doesn't have enough fat to keep it warm or insulated, it can become hypothermic or cold. If you don't eat enough food, this can lead to hypothermia. Hypothermia can manifest as feeling cold all the while, needing to wear multiple layers of clothing or developing a layer called "lanugo" that is soft and fine. This hair helps keep your body warm even when you don't have enough fat.

EKG: Electrocardiogram (or ECG) is an acronym that stands for electrocardiogram. It measures the electrical rhythm and signals of your heart. This test records the strength and timing of your heartbeats. Because eating habits and heart rate can affect strength and speed, this test is vital for those with eating disorders. Your heart is like a muscle. If you don't eat enough to keep your muscles strong, it will weaken. The heart will begin to beat less frequently as the body attempts to conserve energy. Low heart rate or abnormal heart rhythms can result. These abnormal rhythms and slow heart rates can be detected by an EKG. Bradycardia, also known as low heart rate or bradycardia, is a heartbeat that beats less than 60 beats per hour. Proper nutrition can help to reduce low heart rate.

Physical Exam

The physical exam can include such things as orthostatic BP, checking for laguna (fine hairs that the body covers itself in to keep warm), self harm marks, and a variety of other in-person tests.