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The Aldolase Test measures the level of the enzyme aldolase in the blood, which can indicate muscle damage. Here's a basic outline of the test result, unit, reference range, and test methods: Test Result: This will typically be a numerical value representing the concentration of aldolase in the serum. Unit: The most common unit used for aldolase is Units per Liter (U/L). Reference Range: The normal range for aldolase may vary slightly depending on the laboratory that analyzes the test, but a typical reference range is between 1.0 to 7.5 U/L. It's essential to interpret the result based on the reference range provided by the specific laboratory that conducted the test. Test Methods: The Aldolase Test is performed using a blood sample. Blood is usually drawn from a vein, typically from the inside of the elbow or the back of the hand. In the laboratory, the sample undergoes a procedure using a spectrophotometer, which measures the activity of aldolase by observing how it catalyzes a specific reaction, converting a substrate to a product. The rate of this conversion, often coupled with a color change detected by the spectrophotometer, is directly proportional to the enzyme's activity in the sample. Interpreting Results: Within Normal Range: Suggests there is no significant muscle damage or that a muscle disease is not likely. Above Normal Range: Can indicate muscle damage or a muscle disorder. Conditions like muscular dystrophy, polymyositis, or even liver diseases can elevate aldolase levels. Additional Considerations: It's crucial to interpret aldolase levels in the context of clinical symptoms and other diagnostic findings. Other tests, like the creatine kinase test, are often used in conjunction with the aldolase test to provide a comprehensive picture of muscle health. 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The Aldolase Test measures the concentration of the enzyme aldolase in the blood, offering insight into muscle health and other conditions. The clinical significance of this test revolves around its capacity to detect and monitor muscle damage and certain other disorders. Here's a detailed look into its clinical importance: Indication of Muscle Damage or Inflammation: Muscle Tissue Release: Aldolase is an enzyme predominantly found in muscle tissue. When muscle tissue is damaged or inflamed, aldolase gets released into the bloodstream, leading to elevated levels. Diagnostic Utility for Muscle Disorders: Muscular Dystrophy: This inherited disorder leads to progressive muscle weakness and degeneration. Elevated aldolase levels can indicate active muscle breakdown. Polymyositis & Dermatomyositis: These are inflammatory muscle diseases that can lead to muscle weakness. Elevated aldolase levels can suggest active inflammation and muscle damage. Myositis Ossificans: A condition where bone tissue forms within a muscle, often after an injury. Elevated aldolase can indicate ongoing muscle inflammation or damage. Other Conditions: Liver Diseases: While aldolase is primarily a marker for muscle damage, it is also present in the liver. Conditions like hepatitis or liver injury can result in elevated aldolase levels. Heart Attack (Myocardial Infarction): Damage to heart muscle cells during a heart attack can lead to the release of aldolase into the bloodstream. However, other enzymes, like troponin, are more commonly used as markers for heart attacks. Certain Hemolytic Anemias: Some forms of anemia that involve the rapid destruction of red blood cells can lead to increased aldolase levels. Monitoring Response to Treatment: In patients diagnosed with conditions like polymyositis or dermatomyositis, periodic measurement of aldolase can help monitor the response to treatment. A decreasing aldolase level might suggest a positive response to therapy and reduced muscle inflammation. Differential Diagnosis: Elevated aldolase levels, when combined with findings from other tests (like creatine kinase, AST, ALT), can help distinguish between muscle-related disorders and other conditions. For instance, while both liver disease and muscle injury can elevate aldolase, other liver enzymes might only be significantly elevated in liver diseases. The Aldolase Test is just one piece of the diagnostic puzzle. It's essential to interpret its results in conjunction with clinical symptoms, physical examination, and other laboratory findings. While the test can indicate muscle damage, it doesn't pinpoint the specific location of the damage or its cause. Levels of aldolase can vary with age, being naturally higher in infants and gradually decreasing as one grows older. Here are keynotes on the Aldolase Test: Definition: The Aldolase Test measures the concentration of the enzyme aldolase in the blood. Purpose: Detect and monitor muscle damage or inflammation. Diagnostic utility for muscle disorders like muscular dystrophy, polymyositis, and dermatomyositis. It can also provide insights into liver diseases, certain hemolytic anemias, and myocardial infarction. Sample & Procedure: Blood sample, typically drawn from a vein. Laboratory analysis involves a spectrophotometer to measure aldolase activity based on its catalytic reaction. Units & Reference Range: Common unit: Units per Liter (U/L). Typical reference range: 1.0 to 7.5 U/L (may vary by laboratory). Clinical Significance: Elevated levels can indicate active muscle breakdown or inflammation. Utility in diagnosing and monitoring muscle and liver disorders. Useful in differential diagnosis in conjunction with other tests. Can help monitor treatment response in conditions like polymyositis. Limitations: Results should be interpreted in the context of clinical symptoms and other diagnostic findings. Does not specify the location or specific cause of muscle damage. Aldolase levels vary with age and are naturally higher in infants. Safety: Blood draw is minimally invasive with minor risks like bruising or infection at the puncture site. Textbooks: “Tietz Textbook of Clinical Chemistry and Molecular Diagnostics” by Carl A. Burtis, Edward R. Ashwood, and David E. Bruns: This comprehensive textbook provides details on numerous clinical tests, including the Aldolase Test, and discusses their principles, methodologies, and interpretations. “Henry's Clinical Diagnosis and Management by Laboratory Methods” by Richard A. McPherson and Matthew R. Pincus: A widely referenced textbook in the field of clinical pathology, it offers insights into the diagnostic utility of various tests. Peer-Reviewed Journals: Research articles in journals like the “Journal of Clinical Pathology,” “Clinical Biochemistry,” or the “American Journal of Clinical Pathology” often feature studies, reviews, and case reports related to enzyme assays, including aldolase. Use databases like PubMed or Google Scholar to search for specific articles or reviews on the Aldolase Test and its clinical applications. Online Resources: Lab Tests Online: Sponsored by the American Association for Clinical Chemistry (AACC), this resource offers detailed information on a wide array of laboratory tests, their indications, interpretations, and clinical utility. Mayo Clinic Laboratories: The Mayo Clinic's laboratory testing reference offers detailed test information, indications, methodologies, and more. MedlinePlus: A service of the U.S. National Library of Medicine, it provides information about various tests and their significance. Professional Associations: American Association for Clinical Chemistry (AACC): Their publications, guidelines, and seminars often provide updated knowledge on clinical laboratory tests. International Federation of Clinical Chemistry and Laboratory Medicine (IFCC): They offer resources, standards, and publications related to clinical chemistry. Courses and Conferences: Consider attending workshops, courses, or conferences organized by professional bodies in clinical pathology or laboratory medicine. These events often present the latest research, innovations, and best practices in the field. Clinical Guidelines: Various professional bodies might publish guidelines or recommendations on the use, interpretation, and significance of enzyme assays, including the Aldolase Test. Check resources from groups like the National Academy of Clinical Biochemistry or equivalent organizations in your country. The aldolase blood test (ALS) checks for muscle disease by measuring the level of aldolase in your blood.Aldolase is a protein that helps the body turn sugar into energy. There is normally a lot of aldolase in your muscles and liver. When there is damage to the cells in your muscles or liver, those cells break open and dump the aldolase into your bloodstream.If you are experiencing muscle weakness or myalgia (muscle pain), your doctor will want to know if your symptoms are due to a problem with your muscles or your nerves. A high amount of aldolase (ALS) in your blood can be a sign of muscle damage. If the problem is in the nervous system, the amount of aldolase in your blood will not change.You may need to stop eating and drinking for about 8 hours before the blood test. Your doctor will let you know if you should stop any of your medicines to keep them from affecting the test results.You might also need to avoid intense exercise for several days before the test. Long-lasting exercise can raise the level of aldolase in your blood and could affect your test results.A lab tech will place a very small needle in a vein in your arm. They will draw about 1 milliliter of blood into a little plastic tube called a vial. The vial will be sent off for testing. You will probably get results within a few days.The normal range for aldolase can be a little higher or lower depending on your age and gender. Generally, the normal range for adults is between 1.0 and 7.5 units per liter.The normal amount of aldolase in the blood is higher in children. For those under age 18, anything under 14.5 units per liter is considered normal.An increased level of aldolase in the blood is sometimes a sign of muscle disease, such as: Duchenne muscular dystrophy.Duchenne muscular dystrophy (DMD) is a genetic disorder, meaning it is the result of a difference in the person's DNA. Symptoms typically start when a child is 2 or 3 years old. The first symptom is often muscle weakness, which can make it hard for the child to walk, run, and jump. Other early signs can include delays in learning to sit, stand, or speak. Duchenne muscular dystrophy eventually causes muscle atrophy as well as heart and lung problems. Some medications can help manage the symptoms of DMD.Limb-girdle muscular dystrophy. Limb-girdle muscular dystrophy is also a genetic disorder that causes weakness and wasting of the muscles around the shoulders and hips. Symptoms can include walking with a waddling gait, difficulty getting up out of a chair, or trouble climbing stairs.The goal of treatment is to help ease symptoms. Treatment options include physical therapy and occupational therapy to strengthen muscles and prevent contractures, which are overly tight muscles that limit your range of motion.Dermatomyositis.Dermatomyositis is an autoimmune disease, which means that the immune system is attacking healthy cells instead of just fighting off invaders like viruses.Signs of dermatomyositis include a red rash around your eyelids, red or purple bumps on your joints, and muscle weakness in your arms and legs. Polymyositis. Polymyositis is another rare autoimmune disease that also causes muscle weakness. Where dermatomyositis affects the muscles of the limbs, polymyositis typically causes weakness in the muscles of the neck, back, shoulders, and hips. It can also cause falls, a dry cough, and difficulty swallowing.Symptoms most often start when you're an adult and come on gradually. Medications can help reduce symptoms. Physical therapy can strengthen your muscles and improve your flexibility. Speech therapy can also help with swallowing difficulties associated with this condition. PurposeProcessRisksPreparationResultsYour body converts a form of sugar called glucose into energy. This process requires a number of different steps. One important component in the process is an enzyme known as aldolase.Aldolase can be found throughout the body, but concentrations are highest in skeletal muscle and the liver.Although there's not a direct correlation, high aldolase levels in the blood can occur if there's damage to your muscle or liver.The aldolase test is a blood test, so you will be required to give a blood sample. The sample is usually taken by a technician.To take this sample, they insert a needle into a vein of your arm or hand and collect the blood in a tube. The sample is then sent to a lab for analysis and the results reported to your doctor, who will review them with you.You may experience some discomfort, such as pain at the test site, when the blood sample is drawn. There may also be some brief, mild pain or throbbing at the site after the test.In general, the risks of a blood test are minimal. Potential risks include:difficulty obtaining a sample, resulting in multiple needle sticksexcessive bleeding at the needle sitefainting as a result of blood lossaccumulation of blood under the skin, known as a hematomaan infection where the skin is broken by the needleIt's important to note that exercise can affect aldolase test results. Let your doctor know about your regular exercise program. You might be told to limit exercise for several days before the test, as exercise can cause you to have temporarily high aldolase results.Your doctor may also ask you to stop taking medications that may alter test results. Be sure to tell your doctor about all medications you are taking. This includes both prescription and over-the-counter (OTC) drugs.The specific ranges for an abnormal test may vary slightly by laboratory, and there are slight differences between normal levels for men and women.In general, normal results can range from 1.0 to 7.5 units per liter (U/L) for people 17 years old and up. Normal results for people up to 16 years old can reach 14.5 U/L.Higher or abnormal levels may be due to health conditions, including:Aldolase testing for conditions that cause high aldolase levels (hyperaldolasemia) isn't straightforward. Conditions or diseases causing muscle mass to decrease can result in hyperaldolasemia. At first, muscle destruction causes higher aldolase levels. However, aldolase levels actually decline as the amount of muscle in the body decreases.Let your doctor know if you've recently engaged in strenuous activity, which can cause you to have temporarily high or misleading results.Less than 2.0 to 3.0 U/L is considered a low level of aldolase. Low levels of aldolase can be seen in people with:fructose intolerancemuscle-wasting diseaselate stage muscular dystrophy Database: Entry: No such data was found. DBGET integrated database retrieval system The aldolase blood test (ALS) checks for muscle disease by measuring the level of aldolase in your blood.Aldolase is a protein that helps the body turn sugar into energy. There is normally a lot of aldolase in your muscles and liver. When there is damage to the cells in your muscles or liver, those cells break open and dump the aldolase into your bloodstream.If you are experiencing muscle weakness or myalgia (muscle pain), your doctor will want to know if your symptoms are due to a problem with your muscles or your nerves. A high amount of aldolase (ALS) in your blood can be a sign of muscle damage. If the problem is in the nervous system, the amount of aldolase in your blood will not change.You may need to stop eating and drinking for about 8 hours before the blood test. 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Therefore, rheumatologists may sometimes request the test in addition to creatine kinase.CollectOne 5 mL gold (SST) top tube.Transport1 mL serum at 2-8°C. (Min: 0.5 mL)RemarksAllow to clot completely at room temperature AND separate serum from cells within 2 hours of collection and refrigerate.StabilityAfter separation from cells: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 6 monthsUnacceptable ConditionsHemolyzed samples. Plasma or whole blood samples.The previous muscular injection may increase the aldolase level.Drugs that are hepatotoxic may increase the level.The phenothiazine may decrease the aldolase level.Adult = 1.0 to 7.5 U /LNewborn = 4 X adult levelValues are double in early childhood and then fall to a normal level slowly by the 18 to 20 years of age.Children 10 to 24 months = 3.4 to 11.8 U/Lchild 25 months to 16 years = 1.2 to 8.8 U/LAdult = 22 to 59 mU/L at 37 °CChild = Approximately 2 times the adult value.Newborn = Approximately 4 times the adult value.Cell destruction like Acute myocardial infarction (5 to 8 times of the normal).Burns.Acute Hepatitis (Viral or toxic). It is raised in the early stage of viral or toxic hepatitis.Inflammatory diseases of muscles (Myopathy).Raised in skeletal muscle disease or injury.Raised in Muscular dystrophy.Carcinoma of the prostate (about 6 times of the normal).Myelocytic leukemia (about 6 times of the normal).Megaloblastic and hemolytic anemia (about 10 to 13 times of the normal).In neoplastic diseases like carcinomatous metastasis to liver, lung, breast, genitourinary system, melanoma, and CNS tumors.Neurogenic muscle atrophy.Cirrhosis (or maybe slightly increased).Obstructive jaundice (or maybe slightly increased).Hereditary fructose intolerance.Loss of muscle massPossible References Used⚠ Disclaimer:The content on LabTestsGuide.com is for informational and educational purposes only. We do not guarantee the accuracy, completeness, or timeliness of the information provided. Always consult qualified healthcare professionals for medical advice, diagnosis, or treatment. LabTestsGuide.com is not liable for any decisions made based on the information on this site. ASCPAmerican Society for Clinical Pathology (USA) AMTAmerican Medical Technologists (USA) AIMSAustralian Institute of Medical and Clinical Scientists CSMLSCanadian Society for Medical Laboratory Science IBMSInstitute of Biomedical Science (UK) HAADHealth Authority - Abu Dhabi MOH DHA Comprehensive question bank with Answer Key and Mock Test Performance analytics and get Mock Test Certificate Mobile-friendly interface for on-the-go studying Timed mock exams that simulate real test conditions Get Free Access Now Editorial StaffLab Tests Guide FounderThe website covers a wide range of lab tests, including blood tests, urine tests, stool tests, and imaging tests such as X-rays and CT scans. It also provides information about different health conditions and diseases, as well as tips for maintaining good health.It's important to note that while labtestsguide.com may provide valuable information about lab tests and their interpretation, it's always best to consult with a healthcare professional if you have any concerns or questions about your lab results. We can provide personalized guidance and advice based on your individual health status and medical history. Your query returned 1 entry. Printable version EC 4.1.2.13 Accepted name: fructose-bisphosphate aldolase Reaction: D-fructose 1,6-bisphosphate = glycerone phosphate + D-glyceraldehyde 3-phosphate For diagram of the pentose phosphate pathway (later stages), click here and for mechanism, click here; for diagrams of the Calvin cycle, click here and glycolysis, click here Glossary: glycerone phosphate = dihydroxyacetone phosphate = 3-hydroxy-2-oxopropyl phosphate Other name(s): aldolase; fructose-1,6-bisphosphate triosephosphate-lyase; fructose diphosphate aldolase; diphosphofructose aldolase; fructose 1,6-diphosphate aldolase; ketose 1-phosphate aldolase; phosphofructoaldolase; zymohexase; fructoaldolase; fructose 1-phosphate aldolase; fructose 1-monophosphate aldolase; 1,6-diphosphofructose aldolase; SMALDO; D-fructose-1,6-bisphosphate D-glyceraldehyde-3-phosphate-lyase Systematic name: D-fructose-1,6-bisphosphate D-glyceraldehyde-3-phosphate-lyase (glycerone-phosphate-forming) Comments: Also acts on (3S,4R)-ketose 1-phosphates. The yeast and bacterial enzymes are zinc proteins. The enzymes increase electron-attraction by the carbonyl group, some (Class I) forming a protonated imine with it, others (Class II), mainly of microbial origin, polarizing it with a metal ion, e.g. zinc. Links to other databases: BRENDA, EXPASY, Gene, GTD, KEGG, MetaCyc, PDB, CAS registry number: 9024-52-6 References: 1. Horecker, B.L., Tsolas, O. and Lai, C.Y. Aldolases. In: Boyer, P.D. (Ed.), The Enzymes, 3rd edn, vol. 7, Academic Press, New York, 1972, pp. 213–258. 2. Alefounder, P.R., Baldwin, S.A., Perham, R.N., Short, N.J. Cloning, sequence analysis and over-expression of the gene for the class II fructose 1,6-bisphosphate aldolase of Escherichia coli. Biochem. J. 257 (1989) 529–534. [PMID: 2649077] [EC 4.1.2.13 created 1965, modified 1999 (EC 4.1.2.7 created 1961, incorporated 1972)] Data © 2001–2025 IUBMB Web site © 2005–2025 Andrew McDonald Turnaround time is defined as the usual number of days from the date of pickup of a specimen for testing to when the result is released to the ordering provider. In some cases, additional time should be allowed for additional confirmatory or additional reflex tests. Testing schedules may vary. Evaluate muscle wasting process. High levels are found in progressive Duchenne muscular dystrophy (MD). Elevations occur in carriers of MD, in limb-girdle dystrophy and other dystrophies, in dermatomyositis, polymyositis, and trichinosis, but not in neurogenic atrophies (eg, multiple sclerosis or in myasthenia gravis). As muscle mass diminishes, aldolase decreases. Serum aldolase elevation is not specific for muscle disease since it is present in many tissues (see Additional Information). In the progressive dystrophies, aldolase levels may be 10 to 15 times normal when muscle mass is relatively intact, as in early stages of the disease. When advanced muscle wasting is present, values decline. In the inflammatory myopathies (eg, dermatomyositis) serum aldolase (as well as CK) levels may be applied to monitoring the response to steroid therapy. They are of particular value in guiding tapering of steroid administration.1 No elevation is found in muscular dystrophy secondary to alteration of the nerves or nerve centers.Aldolase is present as a tetramer composed of two of three known subunits designated A, B, and C. Of the four isoenzymes, AAAA is predominant in skeletal muscle, BBBB predominates in liver, and CCCC in brain and other tissue. A hybrid isoenzyme, AAAC is present in tissues but at a lower concentration.2 The enzymatic method determines total enzyme activity and thus is not specific for muscle aldolase.Elevated aldolase levels may be found with hepatitis, other liver diseases, myocardial infarction, hemorrhagic pancreatitis, gangrene, delirium tremens, and in some cases of neoplasia. In cases of acute viral hepatitis, increase in serum aldolase tends to parallel ALT (SGPT) levels and is usually up to 20 times the average of normal. Normal results are usually obtained in portal cirrhosis and obstructive jaundice. A small fraction of cases of measles in young adults has been reported to have significant elevations of serum CK and aldolase.3,4 Serum aldolase and CK may be elevated in the serum of patients who have taken L-tryptophan and develop eosinophilia-myalgia syndrome.5 0.2 mL (Note: This volume does not allow for repeat testing.) Red-top tube or gel-barrier tube for serum; or plasma may be used from blue-top (sodium citrate) tube, gray-top (sodium fluoride) tube, lavender-top (EDTA) tube, or green-top (heparin) tube Separate serum or plasma immediately after coagulation (30 minutes). Note: Not removing refrigerated specimens from the clot results in aldolase levels 12% to 46% higher. TemperaturePeriodRoom temperature1 dayRefrigerated7 daysFrozen15 daysFreeze/thaw cyclesStable x3 • 0 to 30 days: Not established• 31 days to 1 year: 5.0−11.7 units/L• >1 year: 3.3−10.3 units/L Hemolysis (red cells contain aldolase); gross lipemia Order Code Order Code Name Order Loinc Result Code Result Code Name UofM Result LOINC 002030 Aldolase 1761-6 002030 Aldolase U/L 1761-6 Order Code002030 Order Code NameAldolase Order Loinc1761-6 Result Code002030 Result Code NameAldolase UofMU/L Result LOINC1761-6 The purpose of aldolase testing is to diagnose and monitor certain conditions that damage the skeletal muscles and organs. Aldolase testing may reveal muscle or organ damage that has occurred due to injury or a condition that affects the muscles or organs. As a diagnostic test, aldolase testing is used with other muscle enzyme tests to help diagnose muscle diseases like muscular dystrophy, polymyositis, and dermatomyositis. Aldolase testing can also help doctors understand the cause of certain muscle disorders. Many disorders of the muscles originate in the nervous system and cause muscle weakness or pain. Measuring aldolase can help doctors learn whether the source of these muscle problems originates in the nervous system or in the tissues of the muscles themselves. . Aldolase testing may also be used to monitor patients who are being treated for muscle diseases. Aldolase levels can provide information about how well a patient is responding to treatment and whether their condition is improving or worsening. What does the test measure? Aldolase is a type of protein, called an enzyme, that is found throughout the body, with the greatest amounts being in the skeletal muscles, liver and brain. Aldolase helps in the process of turning sugars like glucose and fructose into energy. When cells in the muscles or liver are damaged, large amounts of aldolase are released into the bloodstream. Aldolase may be higher than normal in many disorders, ranging from infectious diseases to cancer. However, because there are more specific tests for diagnosing many of these diseases, aldolase is only measured in certain conditions.. When should I get aldolase testing? Aldolase testing may be used to diagnose myopathies, which are diseases and disorders of the muscles. These include: Muscular dystrophy Inflammatory muscle disorders like polymyositis and dermatomyositis Rhabdomyolysis, a process in which the breakdown of muscle tissue Muscle pain and weakness due to infectious diseases Muscle problems caused by medications Symptoms associated with myopathy include: Muscle weakness Cramps Stiffness Spasms Muscle pain, called myalgia Aldolase testing may also be used to monitor patients with previously diagnosed muscle disease. Monitoring enables doctors to see if the disease is getting better or worse. When used to diagnose muscle or liver damage, additional enzyme tests are usually ordered at the same time to assess tissue damage. Aldolase testing requires that a blood sample be provided. Typically, a doctor orders the test and a blood sample for analysis is drawn in a medical setting. Can I take the test at home? At this time, no commercial tests for aldolase are available for home use. How much does the test cost? The cost of aldolase testing depends on where you have the test taken, whether other tests are performed at the same time, and whether you have health care coverage. The costs of testing may include an office visit, a fee for the blood draw, and a lab fee for analyzing your blood sample. These costs are often covered by insurance when the test is ordered by your physician. However, you may wish to check with your insurance provider to learn if you may be responsible for a deductible or copay. Aldolase testing requires a blood sample. Typically, a small sample of blood will be withdrawn at a doctor's office, lab, or other medical setting. Before the test You will likely be instructed not to eat or drink anything for 6 to 12 hours before giving your blood sample for aldolase testing. Patients may also be told to avoid vigorous exercise before the test. In some cases, your doctor may tell you to temporarily stop taking certain medications that could interfere with the test results. During the test During an aldolase test, a health care provider will extract a sample of blood, usually from a vein in your arm. First, an elastic band is tied around your upper arm to increase blood in the veins, and the puncture site is cleaned with an antiseptic. A small amount of blood is withdrawn using a needle attached to a collection tube. You may feel a brief stinging sensation when the needle is inserted. It usually takes less than a minute to obtain a blood sample. After the test Once your blood sample has been taken, a bandage or cotton swab is used to prevent further bleeding. This usually needs to be kept in place for at least an hour. You may return to your normal activities, including driving, after the test. Follow your doctor's instructions for resuming exercise and medications. If you notice any lasting pain, bleeding, or signs of infection at the site where the blood was drawn, you should contact your doctor. Aldolase test results are usually available within a few business days. Your doctor or a member of the doctor's staff may contact you to share results over the phone or to schedule an appointment to discuss them. You may also be able to access your test results through an online patient portal. Interpreting test results Reference ranges for aldolase levels, which define the cutoffs for normal and abnormal results, can vary by laboratory. It's important to look closely at your test report, as results may also be provided in different units, such as international units per milliliter (IU/mL) or microkatals per litre (mckat/L). The table below lists reference ranges given in the National Library of Medicine's A.D.A.M. Medical Encyclopedia and by the American Board of Internal Medicine: Measurement National Library of Medicine A.D.A.M. Medical Encyclopedia Reference Range American Board of Internal Medicine Reference Range Aldolase 0.02 to 0.13 mckat/L 0.8 to 3.0 IU/mL A higher than normal level of aldolase may be related to a number of health conditions, including: Muscle diseases, such as muscular dystrophy, polymyositis, and dermatomyositis Muscle damage Hepatitis, which is inflammation of the liver Heart attack Cancers, including liver, pancreatic or prostate cancer Are test results accurate? Common situations can interfere with aldolase test accuracy, creating false positive results which suggest a disorder is present when it is not. The following factors may interfere with accurate aldolase levels: Strenuous activity prior to testing Eating and drinking prior to testing The use of statins, which are cholesterol-lowering drugs The use of steroids, which are drugs similar to hormones that are given to reduce inflammation and calm the immune system Because these factors may interfere with accurate results, it is important to carefully follow your doctor's instructions on how to prepare for aldolase testing. Do I need follow-up tests? Follow-up after aldolase testing varies greatly based on the purpose of testing and the results of other tests that are often ordered simultaneously. When muscle damage or a muscle disease is suspected, aldolase testing is usually ordered with other tests, such as creatine kinase (CK) and lactate dehydrogenase (LD). When aldolase testing is ordered to check for liver damage, it is often ordered with other tests, such as alanine aminotransferase (ALT) and aspartate aminotransferase (AST). Questions for your doctor about test results Is my aldolase level within the normal range? Do my aldolase testing results help you diagnose or rule out any health disorders? Will you order follow-up tests, and if so, what are they? Accepted Name fructose-bisphosphate aldolase Alternative Name(s) aldolase D-fructose-1,6-bisphosphate D-glyceraldehyde-3-phosphate-lyase fructose-1,6-bisphosphate triosephosphate-lyase Reaction catalysed beta-D-fructose 1,6-bisphosphate = D-glyceraldehyde 3-phosphate + dihydroxyacetone phosphate Comment(s) Also acts on (3S,4R)-ketose 1-phosphates. The enzymes increase electron-attraction by the carbonyl group, some (Class I) forming a protonated imine with it, others (Class II), mainly of microbial origin, polarizing it with a metal ion, e.g. zinc. Formerly EC 4.1.2.7. Cross-references BRENDA4.1.2.13 EC2PDB4.1.2.13 ExplorEnz4.1.2.13 KEGG Ligand Database for Enzyme Nomenclature4.1.2.13 IUBMB Enzyme Nomenclature4.1.2.13 MEDLINEFind literature relating to 4.1.2.13 MetaCyc4.1.2.13 Rhea expert-curated reactions4.1.2.13 UniProtKB/Swiss-Prot Q4KMC8, ALDCA_DANREQ8JH70, ALDCB_DANREP86980, ALDOA_GADMO P04075, ALDOA_HUMANP05064, ALDOA_MOUSEA5A6I5, ALDOA_PANTR Q5NVR5, ALDOA_PONABP00883, ALDOA_RABITP05065, ALDOA_RAT B5DGM7, ALDOA_SALSAP86979, ALDOA_THUALQ3T0S5, ALDOB_BOVIN P07341, ALDOB_CHICKQ8JH71, ALDOB_DANREP05062, ALDOB_HUMAN Q91Y97, ALDOB_MOUSEQ5RFA6, ALDOB_PONABP79226, ALDOB_RABIT P00884, ALDOB_RATP52210, ALDOB_SHEEPP53447, ALDOB_SPAAU P53448, ALDOC_CARAUP53449, ALDOC_CHICKP09972, ALDOC_HUMAN Q9GKW3, ALDOC_MACFAP05063, ALDOC_MOUSEQ5R1X4, ALDOC_PANTR P09117, ALDOC_RATQ9YG90, ALF1_AERPEP54216, ALF1_CAEEL P27995, ALF1_CERSPQ9PKH8, ALF1_CHLMUQ9Z8Q7, ALF1_CHLPN O84217, ALF1_CHLTRQ97TN4, ALF1_CLOABA6LXU8, ALF1_CLOB8 Q59100, ALF1_CUPNHP0A992, ALF1_ECOL6P0A991, ALF1_ECOLI Q8RGH3, ALF1_FUSNNB0R3Y0, ALF1_HALS3Q9HRI2, ALF1_HALSA P53445, ALF1_LETCAQ8ELI2, ALF1_OCEIHQ96UH7, ALF1_PARBA P46256, ALF1_PEAB2RLG9, ALF1_PORG3P60053, ALF1_PORGI Q9V2I6, ALF1_PYRABP58314, ALF1_PYRFUO57840, ALF1_PYRHO A7X6Y6, ALF1_STAA1A6U4Y6, ALF1_STAA2Q2FDQ4, ALF1_STAA3 Q2FV17, ALF1_STAA8A5IW31, ALF1_STAA9Q2YWF3, ALF1_STAAB Q5HCU6, ALF1_STAACA6QK93, ALF1_STAAEP67472, ALF1_STAAM P99117, ALF1_STAANQ6GDJ7, ALF1_STAARQ6G670, ALF1_STAAS A8Z3K5, ALF1_STAATQ8NUM5, ALF1_STAAWQ07159, ALF1_STACT Q5HL21, ALF1_STAEQQ8CMY5, ALF1_STAESQ4L9B6, ALF1_STAHJ P74309, ALF1_SYNY3Q8J308, ALF1_THEKOP58315, ALF1_THETK Q8I8I2, ALF1_TOXGOQ73QV3, ALF1_TREDEQ8PHB5, ALF1_XANAC Q8P5Z7, ALF1_XANCPQ9PF52, ALF1_XYLFAQ87AI0, ALF1_XYLFT P46563, ALF2_CAEELP29271, ALF2_CERSPQ59101, ALF2_CUPNH P53446, ALF2_LETCAQ8J0N6, ALF2_PARBAP46257, ALF2_PEA P49577, ALF2_PLABAP50923, ALF2_RHOCAQ5HE75, ALF2_STAAC P67477, ALF2_STAAMP99075, ALF2_STAANQ6GEV0, ALF2_STAAR Q6G7I5, ALF2_STAASP67478, ALF2_STAAWQ5HM97, ALF2_STAEQ Q8CNI3, ALF2_STAESQ55664, ALF2_SYNY3P17784, ALFC1_ORYSJ Q01516, ALFC1_PEAQ10A30, ALFC2_ORYSJQ01517, ALFC2_PEA Q5N725, ALFC3_ORYSJF4KGQ0, ALFC4_ARATHO65581, ALFC5_ARATH Q9SJQ9, ALFC6_ARATHP22197, ALFC7_ARATHQ9LF98, ALFC8_ARATH Q42690, ALFC_CHLREP84722, ALFC_PINSTP16096, ALFC_SPIOL Q9SJU4, ALFP1_ARATHQ944G9, ALFP2_ARATHQ9ZU52, ALFP3_ARATH Q40677, ALFP_ORYSJP83155, ALF_ANASLQ9HGY9, ALF_ASPOR P13243, ALF_BACSUO51401, ALF_BORBUP57526, ALF_BUCAI Q8K9B2, ALF_BUCAPQ89AB6, ALF_BUCBPQ0PAS0, ALF_CAMJE A1VYV7, ALF_CAMJJQ9URB4, ALF_CANALO65735, ALF_CICAR P0CJ44, ALF_COCIMP19537, ALF_CORGLQ86A67, ALF_DICDI P07764, ALF_DROMEQ9GP32, ALF_ECHMUP0AB72, ALF_ECO57 P0AB71, ALF_ECOLIO52402, ALF_EDWI9Q8SSM8, ALF_ENCCU P94453, ALF_GEOSEA8B2U2, ALF_GIAICP44429, ALF_HAEIN D4GYE0, ALF_HALVDQ9ZMQ6, ALF_HELPJP56109, ALF_HELPY Q9C2U0, ALF_KLULAP91759, ALF_LYMSTP08440, ALF_MAIZE P67476, ALF_MYCBOP47269, ALF_MYCGEO69600, ALF_MYCLE P75089, ALF_MYCPNP9WQA2, ALF_MYCTOP9WQA3, ALF_MYCTU P53444, ALF_NEUCRQ9XDP3, ALF_NOSCOQ8YNK2, ALF_NOSS1 Q7KQL9, ALF_PLAF7P14223, ALF_PLAFAQ27744, ALF_PLAFK Q9I5Y1, ALF_PSEAEP58336, ALF_RHIMEP53442, ALF_SCHMA P36580, ALF_SCHPOP0AB73, ALF_SHIFLP56888, ALF_SINMW P29356, ALF_SPIOLQ9X8R6, ALF_STRCOQ9ZEM7, ALF_STRGB P68905, ALF_STRP1P0CZ58, ALF_STRP3Q5XA12, ALF_STRP6 P68906, ALF_STRP8P0A4S1, ALF_STRPNP0CZ59, ALF_STRPQ P0A4S2, ALF_STRR6O87796, ALF_STUSTQ703I2, ALF_THECA O83668, ALF_TREPAP07752, ALF_TRYBBQ9PPP3, ALF_UREPA Q56815, ALF_XANFLP14540, ALF_YEASTQ58980, DKFP_METJA A0RV30, FBPAP_CENSYA8A9E4, FBPAP_IGNH4Q57747, FBPAP_METJA A4YIZ5, FBPAP_METS5D9PUH5, FBPAP_METTMQ2RG86, FBPAP_MOOTA B1YAL1, FBPAP_PYRNVF9VMT6, FBPAP_SULTOQ8NKR9, FBPAP_THEKO B6YTP6, FBPAP_THEONQ72K02, FBPAP_THET2 View entry in original ENZYME format View entry in raw text format (no links) All ENZYME / UniProtKB/Swiss-Prot entries corresponding to 4.1.2.- All ENZYME / UniProtKB/Swiss-Prot entries corresponding to 4.1.-.- All ENZYME / UniProtKB/Swiss-Prot entries corresponding to 4.-.-.- The aldolase blood test (ALS) checks for muscle disease by measuring the level of aldolase in your blood.Aldolase is a protein that helps the body turn sugar into energy. There is normally a lot of aldolase in your muscles and liver. When there is damage to the cells in your muscles or liver, those cells break open and dump the aldolase into your bloodstream.If you are experiencing muscle weakness or myalgia (muscle pain), your doctor will want to know if your symptoms are due to a problem with your muscles or your nerves. A high amount of aldolase (ALS) in your blood can be a sign of muscle damage. If the problem is in the nervous system, the amount of aldolase in your blood will not change.You may need to stop eating and drinking for about 8 hours before the blood test. Your doctor will let you know if you should stop any of your medicines to keep them from affecting the test results.You might also need to avoid intense exercise for several days before the test. Long-lasting exercise can raise the level of aldolase in your blood and could affect your test results.A lab tech will place a very small needle in a vein in your arm. They will draw about 1 milliliter of blood into a little plastic tube called a vial. The vial will be sent off for testing. You will probably get results within a few days.The normal range for aldolase can be a little higher or lower depending on your age and gender. Generally, the normal range for adults is between 1.0 and 7.5 units per liter.The normal amount of aldolase in the blood is higher in children. For those under age 18, anything under 14.5 units per liter is considered normal.An increased level of aldolase in the blood is sometimes a sign of muscle disease, such as: Duchenne muscular dystrophy.Duchenne muscular dystrophy (DMD) is a genetic disorder, meaning it is the result of a difference in the person's DNA. Symptoms typically start when a child is 2 or 3 years old. The first symptom is often muscle weakness, which can make it hard for the child to walk, run, and jump. Other early signs can include delays in learning to sit, stand, or speak. Duchenne muscular dystrophy eventually causes muscle atrophy as well as heart and lung problems. Some medications can help manage the symptoms of DMD.Limb-girdle muscular dystrophy. Limb-girdle muscular dystrophy is also a genetic disorder that causes weakness and wasting of the muscles around the shoulders and hips. Symptoms can include walking with a waddling gait, difficulty getting up out of a chair, or trouble climbing stairs.The goal of treatment is to help ease symptoms. Treatment options include physical therapy and occupational therapy to strengthen muscles and prevent contractures, which are overly tight muscles that limit your range of motion.Dermatomyositis.Dermatomyositis is an autoimmune disease, which means that the immune system is attacking healthy cells instead of just fighting off invaders like viruses.Signs of dermatomyositis include a red rash around your eyelids, red or purple bumps on your joints, and muscle weakness in your arms and legs. Polymyositis. Polymyositis is another rare autoimmune disease that also causes muscle weakness. Where dermatomyositis affects the muscles of the limbs, polymyositis typically causes weakness in the muscles of the neck, back, shoulders, and hips. It can also cause falls, a dry cough, and difficulty swallowing.Symptoms most often start when you're an adult and come on gradually. Medications can help reduce symptoms. Physical therapy can strengthen your muscles and improve your flexibility. Speech therapy can also help with swallowing difficulties associated with this condition. Panteghini M. Serum enzymes. In: Rifai N, Chiu RWK, Young I, Burnham Carey-Ann D, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. St Louis, MO: Elsevier; 2023:chap 32.Vleugels RA, Jorizzo JL. Dermatomyositis. In: Bolognia JL, Schaffer JV, Cerroni L, eds. Dermatology. 5th ed. Philadelphia, PA: Elsevier; 2025:chap 42.Page 2Borg K, Ensrud E. Myopathies. In: Frontera WR, Silver JK, Rizzo TD Jr, eds. 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Editorial team. The Aldolase Test is a diagnostic blood test that measures the levels of the enzyme aldolase in your blood. Aldolase is essential for breaking down sugars to produce energy, particularly in muscle tissues. This test is often used to evaluate muscle health and detect conditions such as muscular dystrophy, polymyositis, or other muscular and liver disorders. By understanding your aldolase levels, healthcare providers can pinpoint the cause of muscle weakness, pain, or other related symptoms. What Is the Aldolase Test? The Aldolase Test measures the amount of aldolase enzyme in your blood. Elevated or reduced levels of this enzyme can indicate underlying health conditions affecting your muscles or liver. Aldolase plays a critical role in glycolysis, the process by which cells convert glucose into energy. Since this enzyme is found in high concentrations in muscles and the liver, its levels are particularly useful in diagnosing: Muscle disorders like muscular dystrophy and myositis. Liver diseases such as hepatitis or cirrhosis. Hemolytic anemia and other conditions involving red blood cells. Test Results Interpretation Aldolase levels are reported in units per liter (U/L). Hereâ€™s how to interpret your results: Normal Aldolase Levels: Adults: 1.0 to 7.5 U/L. Children: 1.4 to 8.1 U/L (slightly higher due to active growth and muscle activity). High Aldolase Levels: Muscle damage from conditions like muscular dystrophy or polymyositis. Liver damage, including hepatitis or cirrhosis. Hemolytic anemia or other blood-related disorders. Low Aldolase Levels: May indicate a rare metabolic disorder. Usually less clinically significant than elevated levels. Normal Range The normal range for aldolase levels in adults is 1.0 to 7.5 U/L. However, slight variations can occur depending on laboratory standards, age, and individual health conditions. Elevated levels require further investigation to identify the underlying cause. Uses of the Aldolase Test The Aldolase Test is widely used in medical diagnostics for: Evaluating Muscle Disorders: Diagnosing conditions like muscular dystrophy, dermatomyositis, or polymyositis. Monitoring Liver Health: Detecting liver inflammation or damage. Investigating Unexplained Muscle Pain or Weakness: Assessing potential causes. Diagnosing Hemolytic Anemia: Identifying conditions affecting red blood cells. Assessing Treatment Effectiveness: Monitoring progress in managing muscle or liver diseases. How to Prepare for the Aldolase Test To ensure accurate results, follow these preparation guidelines: Fasting: Some healthcare providers may recommend fasting for 8-12 hours before the test. Medication Disclosure: Inform your doctor about any medications or supplements youâ€™re taking, as certain drugs can affect enzyme levels. Avoid Strenuous Activity: Refrain from intense exercise 24-48 hours before the test to prevent temporary elevation of aldolase levels. Hydration: Stay adequately hydrated to ensure proper blood flow. Procedure of the Aldolase Test The Aldolase Test involves a simple blood draw. Hereâ€™s what to expect: Preparation: A healthcare provider cleans the puncture site with antiseptic. Blood Draw: A needle is inserted into a vein, and a blood sample is collected into a vial. Completion: The needle is removed, and the puncture site is bandaged. Analysis: The blood sample is sent to a laboratory, where aldolase levels are measured. Results are typically available within 1-2 days. Factors Affecting Results Several factors can influence aldolase levels, leading to inaccurate results. These include: Medications: Certain drugs, like statins or corticosteroids, can elevate aldolase levels. Exercise: Intense physical activity before the test may cause temporary increases. Chronic Conditions: Conditions like diabetes or thyroid disorders can impact results. Recent Infections: Viral or bacterial infections may elevate enzyme levels temporarily. Managing Abnormal Aldolase Test Results Abnormal aldolase levels require further investigation to identify the underlying cause. Common next steps include: Additional Testing: Such as muscle biopsies, liver function tests, or imaging studies. Specialist Referrals: Consulting a neurologist for muscle disorders or a hepatologist for liver diseases. Lifestyle Adjustments: Managing exercise routines or dietary habits. Medical Treatment: Addressing underlying conditions like infections, inflammation, or metabolic disorders. Benefits of the Aldolase Test The Aldolase Test offers several advantages in medical diagnostics: Early Detection: Helps identify muscle or liver issues before symptoms worsen. Non-Invasive: Requires only a blood sample. Versatility: Useful for diagnosing and monitoring multiple conditions. Cost-Effective: More affordable compared to advanced imaging techniques. Guides Treatment Plans: Provides valuable information for targeted interventions. FAQs About the Aldolase Test What is the Aldolase Test, and why is it performed? The Aldolase Test measures the levels of the aldolase enzyme in your blood to evaluate muscle and liver health. It is often used to diagnose muscle disorders like muscular dystrophy or liver conditions such as hepatitis. Do I need to fast before the Aldolase Test? Fasting is not always required but may be recommended by your doctor. Avoiding intense physical activity before the test is also important. What does a high aldolase level mean? High aldolase levels can indicate muscle damage, liver disease, or conditions affecting red blood cells. Further tests are needed to determine the exact cause. Are there any risks associated with the Aldolase Test? The test involves a standard blood draw, with minimal risks such as slight bruising or discomfort at the puncture site. How long does it take to get results? Results are usually available within 1-2 days. Your doctor will discuss the findings and their implications. Can exercise affect my aldolase levels? Yes, strenuous exercise can temporarily elevate aldolase levels. Avoid intense physical activity 24-48 hours before the test. What should I do if my aldolase levels are abnormal? Consult your doctor for further evaluation. Additional tests may be needed to identify the underlying cause and guide treatment. Is the Aldolase Test covered by insurance? Most insurance plans cover the Aldolase Test when medically necessary. Check with your provider for specific coverage details. Can medications affect aldolase levels? Yes, certain medications like statins or steroids can influence aldolase levels. Inform your doctor about any drugs you are taking. What are the alternatives to the Aldolase Test? Other tests, such as creatine kinase (CK) or liver function tests, may be used to assess muscle and liver health if aldolase testing is inconclusive. Conclusion The Aldolase Test is a valuable diagnostic tool for assessing muscle and liver health. By measuring aldolase levels, this test helps detect and monitor conditions like muscular dystrophy, polymyositis, and liver diseases. Early diagnosis and appropriate interventions can significantly improve outcomes. Always consult your healthcare provider for personalized advice and follow-up based on your test results.

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