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Do cbc test detect hiv

Docus AI Doctor generates health reports that are validated by top doctors from the US and Europe, allowing users to make informed decisions about their health. Users have the freedom to share and adapt this material for commercial or non-commercial purposes, as long as they follow the license terms and give proper credit. The licensor's freedoms cannot be revoked if the user adheres to the license conditions. The Complete Blood Count (CBC) is a widely used blood test that assesses overall health and diagnoses various diseases and conditions, including infections, anemia, and blood cancers. A CBC can also be called a Full Blood Count / Panel or Hemogram. Depending on the reason for the test, healthcare providers may require further testing if some results fall outside normal ranges. A CBC is a simple and quick test that doesn't require fasting or preparation, involving a nurse or technician taking a small blood sample from a vein in the arm. The test is usually done to assess overall health during routine check-ups, diagnose diseases, monitor conditions, or track changes caused by medical treatments. Signs suggesting the need for a CBC include fatigue, fever, weakness, dizziness, and signs of inflammation or infection. A complete blood count with differential (CBC with diff) includes values such as Red Blood Cell count, Mean Corpuscular Volume, and Mean Corpuscular Hemoglobin, which provide information about red blood cells and their average size and hemoglobin content. Given article text here in RBCMean Corpuscular Hemoglobin Concentration (MCHC) indicates the concentration of hemoglobin in RBCRed Blood Cell Distribution Width (RDW) indicates how much RBC vary in sizeHemoglobin (Hb or Hgb) measures the total amount of this protein found in blood sample and which is found in RBC and necessary to carry oxygen.Hematocrit (Hct) measures concentration of RBC in blood.Platelet count (PLT) measures amount of cell fragments that are fundamental in blood clotting.White Blood Cell count (WBC) indicates total number of leukocytes (WBC) in sample.Differential Count indicates number of each of 5 types of WBC, which are:Neutrophils, mainly involved in fighting bacteria by phagocytosis.Lymphocytes fight viruses and bacteria; can be B-cells which produce antibodies or T-cells which directly fight pathogens. Lymphocytes responsible for our immune system memory which allows us to fight infections better the second time we encounter same pathogen.Monocytes remove dead cells and kill pathogens through phagocytosis.Eosinophils mainly involved in allergic reactions and fighting parasites.Basophils involved in allergic and inflammatory responses.Normal CBC Values and reference ranges and interpretation of abnormal results Normal range of values varies between different labs because reference values established based on average results from large population.Factors like age, gender, ethnicity also influence reference ranges.Single value outside normal range does not mean something wrong; results should be looked as whole and interpreted based on information known about patient.Important to check same-subject variation of blood test value and not just single result by itself.In sections below where I indicate possible meaning of higher or lower than normal values, I will only include some but not all of the possible reasons.Normal RBC count range Normal red blood cell count ranges are: 4.7-6.1 x 10^12/L for adult males4.2-5.4 x 10^12/L for adult females Meaning of abnormal RBC values An RBC count greater than normal may be caused physiologically by training or living at high altitudes.Among many factors or conditions that may cause abnormally high value there are chronic hypoxia and polycythemia vera.A low RBC count may be caused physiologically by pregnancy.Among many factors and conditions that may cause low red blood cell count results are blood loss, hemolysis, anemia and blood cancers.Normal MCV range Normal mean corpuscular volume ranges are: 80-95 fL for adults and children Meaning of abnormal MCV values High MCV may be caused by liver disease, folic acid (Vit. B9) deficiency and pernicious anemia (due to Vit B12 deficiency).Low MCV may be caused by iron deficiency anemia or thalassemia.Normal MCH range Normal mean corpuscular hemoglobin ranges are: 27-31 pg for adults and children Meaning of abnormal MCH values High MCH levels may be caused by macrocytic anemia.Low MCH levels may be caused by microcytic anemia Anemia Overview ---------- Anemia is a condition characterized by abnormally low levels of hemoglobin in the blood. Hemoglobin is a protein that carries oxygen to various parts of the body. A normal mean corpuscular hemoglobin concentration (MCHC) range for adults and children is 32-36 g/dL. ### RDW Range The red blood cell distribution width (RDW) measures the variation in size of red blood cells. An abnormal RDW value may be caused by iron deficiency anemia, B6 or B12 deficiency anemia, or blood loss. ### Hemoglobin Range Normal hemoglobin levels for adult males are 14-18 g/dL, while for females, it is 12-16 g/dL. High hemoglobin levels may be caused by living at high altitudes or dehydration, while low hemoglobin levels may be caused by pregnancy, nutritional deficiencies, anemia, hemorrhage, or certain medical conditions. ### Hematocrit Range The hematocrit measures the proportion of red blood cells in the blood. A normal range for adult males is 42-52%, while for females, it is 37-47%. High hematocrit levels may be caused by dehydration, burns, or polycythemia vera, while low levels may be caused by anemia, kidney disease, or certain cancers. ### Platelet Count Range A normal platelet count range is 150-400 x 10^9/L for adults and children. Increased platelet levels (thrombocytosis) may be caused by iron-deficiency anemia, post-splenectomy syndrome, or polycythemia vera, while decreased platelet levels (thrombocytopenia) may be caused by chemotherapy, infections, hemorrhage, or certain medical conditions. ### White Blood Cell Count Range A normal white blood cell count range is 5-10 x 10^9/L for adults and children. Increased white blood cell counts (leukocytosis) may be caused by trauma, stress, infections, or leukemia, while decreased counts (leukopenia) may be caused by bone marrow failure, autoimmune diseases, or certain medications. ### Neutrophils Count Range A normal neutrophils count range is not explicitly stated, but increased levels (neutrophilia) may indicate an acute bacterial infection, stress, or leukemia. Decreased neutrophil counts (neutropenia) may be caused by dietary deficiencies, viral infections, aplastic anemia, or certain medications. ### Lymphocytes Count Range A normal lymphocytes count range is not explicitly stated, but increased levels (lymphocytosis) may indicate a viral or bacterial infection, leukemia, or myeloma. Decreased lymphocyte counts (lymphocytopenia) may be caused by sepsis, HIV, steroid therapy, radiation therapy, or lupus. ### Monocytes Count Range A normal monocytes count range is not explicitly stated, but increased levels (monocytosis) may indicate chronic inflammation, viral infections, or parasitic infections. Decreased monocyte counts (monocytopenia) may be caused by aplastic anemia, leukemia, or certain medications. Eosinophil and Basophils Count: Meaning and Abnormal Values Eosinophils are a type of white blood cell that plays a crucial role in the body's immune response. A laboratory test measures the level of eosinophils, known as an eosinophil count or blood smear, to help diagnose various conditions. **Normal Range** The normal range for eosinophils is 0.5-1% or 0.025-0.1 x 10^9/L. Eosinophilia refers to an increase in the level of eosinophils in the blood, which may be caused by allergic reactions, parasitic infections, autoimmune diseases, or leukemia. On the other hand, eosinopenia is a decrease in eosinophil levels, which can be caused by high stress levels, steroid use, or Cushing's syndrome. **Basophils Count** Basophils are another type of white blood cell that also plays a role in the immune response. A normal range for basophils is 0.5-1% or 0.025-0.1 x 10^9/L. An increase in basophil levels, known as basophilia, may be caused by leukemia or myeloproliferative diseases. Conversely, a decrease in basophil levels can be caused by stress or acute allergic reactions. **Complete Blood Count (CBC) Test** The complete blood count test is a common laboratory test that measures the quantity of various cells in the blood, including eosinophils and basophils. The test provides valuable information about the different parameters related to each type of blood cell. During the CBC test, a small sample of blood is drawn from a vein using a needle and syringe. The blood is then sent to a laboratory for analysis, where the results are interpreted by medical professionals. It's essential to receive the results in a timely manner, as delayed delivery can lead to inaccurate results. A healthcare professional interprets the results from lab tests to determine a person's condition. The Complete Blood Count (CBC), also known as a full blood exam, is used to examine various components in a patient's blood. These include White Blood Cell (WBC) count and differential, Red Blood Cell (RBC) count, Hemoglobin (Hb), Mean Corpuscular Volume (MCV), and more. Each of these components provides information about different aspects of the blood cells, such as their size, color, function, and maturity. The CBC is typically analyzed in a medical laboratory using automated machines that can display results quickly. However, when results require further review or visual inspection, manual analysis may be done by a trained technician. The normal ranges for these values can vary slightly depending on the reference range and machine used. Laboratories usually provide typical values and ranges for each component in a CBC chart. These include WBC count (4,300-10,800 cells/cmm), RBC count (4.2-5.9 million cells/cmm), Hemoglobin (13.8-17.2 g/dL for men, 12.1-15.1 g/dL for women), and others. The CBC is a crucial diagnostic tool that helps doctors understand various health conditions by examining the different components of the blood. The normal range for various blood cells and their components are as follows: - RBC count: 4,300 - 10,800 cells per cmm - Hbg (men): 13.8 - 17.2 g/dL; (women): 12.1 - 15.1 g/dL - Hematocrit (men): 45%-52% ; (women): 37%-48% - MCV: 80 - 100 femtoliters - MCH: 27 - 32 picograms - MCHC: 32 - 36% - RDW: 11 - 15 - Platelet count: 150,000 - 400,000 per cmm - MPV: 6 - 12 femtoliters Thrombin plays a crucial role in the complete blood count (CBC) test. Blood is composed of two main components: plasma and cellular elements. The CBC serves various purposes, including routine health exams and general screening by doctors. It may also be ordered to diagnose infections or anemia. Abnormal bleeding patterns can also be evaluated through this test. An elevated white blood cell count or abnormal differential may indicate infection or inflammation. A high or low white blood cell count can also signify underlying conditions such as leukemia or lymphoma. A low red blood cell or hemoglobin count typically indicates anemia, which is a sign of an underlying disease rather than the disease itself. Anemia can be caused by various factors including blood loss, bone marrow problems, nutritional deficiencies, genetic disorders, or kidney failure. The complete blood count may also reveal thrombocytopenia, characterized by a low platelet count. This condition can result from bone marrow issues, certain medications, excessive alcohol consumption, or other factors such as advanced liver disease or cancers like leukemia.