

# Causes and effects of unhealthy blood in the human body



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Explain the causes and effects of unhealthy blood in the human body

The blood is composed by red cells (erythrocytes), white cells (leucocytes) and platelets (thrombocytes), suspended in a pale yellow fluid as known as plasma (Titmuss, 1970 and Pallister and Watson, 2011). In the initial of the 20<sup>th</sup> century, Karl Landsteiner, a scientist in Vienna, “ took red cells suspensions and serum from six men in his laboratory (including himself); by mixing them in different combinations and noting the agglutination patterns, he first described the A, B and 0 blood groups” (Iles and Docherty, 2012 and Daniels and Bromilow, 2014). Because of that, Landsteiner received the Nobel Prize in 1930. According to Ilyas, Akram and Nawaz (2014), in the moment, researchers present approximately 20 different blood groups and 400 antigens have been discovered. But the most respectful among them is ABO blood group antigens discovered by Karl Landsteiner. “ Blood group systems are all related to groups of proteins that have specific psychological function” (Pallister and Watson, 2011). This specific function happened because the molecule cannot be an antigen if it is not recognised by an antibody (Daniels and Bromilow, 2014). Antibodies are formed by a blood protein in result of and counteracting a specific antigen (OMDT2). For instance, ABO antibodies are basically IgM (Knight, 2013). Our body need all this working together in harmony. If some of their components are abnormal, can be dangerous for our body health. The causes of unhealthy blood come over from genetic or environment and can develop diseases as anaemia and in cardiovascular system.

First of all, one important cause of unhealthy blood can drop by genetic influential. All genes coded by proteins actually implicates varies DNA  
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elements affecting transcription and expression (Dodge and Rutter, 2011). A massive amount of genes are pleiotropic which means that they have numerous effects. For example, the effects of the ApoE4 gene in connection with Alzheimer's disease can come over by an ageing, but also cholesterol metabolism. The biological pathways are always affected by genes which are significant for multiple variations. " Genetic effects are crucially dependent on gene expression (which is subject to environmental influences, chance variation and background genetic effects)" (Dodge and Rutter, 2011). This means that if researchers only look at the DNA, they cannot make conclusions. However, it is an extremely important part to make it.

Second prominent cause of unhealthy blood can come over by the environment. A great quantity of cases shows that the environment causes disease (Ahmed et al., 2006). However, many researchers alleged that environmental causes are erroneous because they fail to consider a lot of variability. " Nongenetic effects may involve developmental (perturbations brought about through stochastic effects) rather than specific environmental hazards" (Ahmed et al, 2006). Although, they probably miss the fact that environmental characteristics consist of urban aspects like neighbourhood safety, healthy food availability and social capital (Berke et al., 2007; Clarke et al, 2008). In addition, researchers suggested that environment is not always gruesome. They said that the environment can bring a positive influence in health too (Berke et al., 2007).

However, environment can, at least in some cases, triumph over biology.

Sometimes, without a specific environment the disease cannot manifest.

Dodge and Rutter (2011) affirmed that there are three important reasons for <https://assignbuster.com/causes-and-effects-of-unhealthy-blood-in-the-human-body/>

supposing that genetics x environment can be both relatively similar and fully influential. This three mainly reasons was: “ genetically influenced differential response to the environment constitutes the mechanism thought to give rise to evolutionary change” (for instance, the evolution in pathogenic organism of resistance to antibiotics), “ to suppose that there is no genetics x environment would see to require the assumption and certainly one that is highly implausible” and “ a wide range of human and animal naturalistic and experimental studies have shown huge heterogeneity in response to all manner of environmental features, both physical and psychosocial” (Dodge and Rutter, 2011). However, both genetic and environment can influence, together, the health of blood.

The consequence of an unhealthy blood can be Anaemia. “ Anaemia is functionally defined as an insufficient red cell mass to adequately deliver sufficient oxygen to peripheral tissues to meet physiological needs” (Pallister and Watson, 2011). It can be classified according to mean cell volume and divided into microcytic anaemia (small cells - low cell volume), normocytic anaemia (cells of normal size - normal cell volume) and macrocytic anaemia (large cells - high cell volume) (Iles and Docherty, 2012; Bain et al., 2012; Ahmed et al, 2006). Microcytic anaemia is caused by iron deficiency. While the body's iron stores are depleted, normal haemoglobin levels are controlled. When this happen, haemoglobin levels start to fall and then it can be said that the anaemia is present. Hereditary haemochromatosis is a defective iron absorption which is a hereditary. This can be inherited and it is an autosomal recessive disorder (Iles and Docherty, 2012). In addition, normocytic anaemia is caused by acute haemorrhage, chronic diseases and

bone marrow infiltration. The treatment of the cause is always the best solution. And the macrocytic anaemia can be subcategorized into megaloblastic (deficient in vitamin B12 and in folate) and nonmegaloblastic (normal in pregnancy) (Iles and Docherty, 2012; Murphy and Pamphilon, 2009). Anaemia is a symptom. Further evidence of this is that anaemia is the most common symptoms of leukaemia (Bain et al., 2012).

Another effect of unhealthy blood in the human body is related with the cardiovascular system. It is necessary a fluid component called blood to this system works correctly. When the blood is unhealthy, it can come over in a cardiovascular disease which is a collective term, used to define a lot of component illnesses (Foster, 1992; Iles and Docherty, 2012). It is basically a heart disease of the heart or blood-supply vessels (Foster, 1992; Wintour and Owens, 2006). " Chest pain may occur when the heart muscle, the myocardium, is deprived of oxygen and nutrients due to diseased coronary arteries in angina, myocardial infarction, or a lack of blood reaching the coronary arteries in heart valve disease" (Iles and Docherty, 2012). It is well known that the leading factor in cardiovascular disease is hypertension (Society of Actuaries, 1959 and Li, 2009). Any irregularity in blood can affect this entire system. According to Iles and Docherty (2012) and Foster (1992), irregularities in blood pressure (hypertension) are typically in whole world, but normally do not show symptoms. For best acknowledgment, diseases in heart are subdivided into two groups, congenital (hereditary) and acquired after birth (environmental) (Foster, 1992; Wintour and Owens, 2006). Heart defects in child can be genetic, or may be caused by viral infections (Brown, 1979). However, some individuals have a tendency to increase the

production of one or more distinct types of cholesterol (Foster, 1992). Thus, cardiovascular disease is also a reflection of unhealthy blood in the human body.

In conclusion, genetic and environment can together influence some disease in blood. Foster (1992) affirmed that health is not only function of medical care, but also lifestyle, environment and biology. He also concluded that “since major changes in the gene pool are unlikely in the foreseeable future, large scale improvements to health seem most likely to result from alterations to either, or both, individual personal behaviour and to the environment” (Foster, 1992). As a result of that, some individuals are more genetic predisposed for some disease in blood. Thus, it is important to know about your probability genetic disease but also about in which environment are you in.

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