

activated in response to cytokines. As a result large amounts of NO are produced which have net effects on the tissues as a part of immune defense against pathogens. The main function of eNOS derived NO is dilation of blood vessels, regulation of platelet and leukocyte interactions with the arterial wall. Decreased expression of the eNOS leads to elevated blood pressure and causes endothelial dysfunction. The nNOS - derived NO is an important neurotransmitter that is involved in memory formation, regulation of CNS blood flow, pain signal transmission, and functional regulations of organs with nitregic intervention. The absence of insulin effects in diabetes decreases eNOS and nNOS expression. Disturbances in NO bioavailability due to defective genes encoding constitutive forms of NOS, decreased expression of these enzymes or deficiency of cofactors and substrates are implicated in pathogenesis of atherosclerotic lesion progression, hypertension, and diabetes mellitus.

### **TOP 5 PARASITES IN AFRICA**

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Parasitic infection is one of the ten top major public health problems in developing African countries. Children being major victims, therefore analysis of distribution, effective prevention and control of parasitic infections require the identification of local risk factors, particularly among high risk groups. The aim of the study. To analyze prevalence of parasitic diseases in Africa. Results: Parasites live everywhere, but they particularly thrive in warm, moist climates. So that is why they are most common in Africa. Some nations in these areas are too poor to take measures that could prevent parasitic infections—such as building water and sewage treatment plants, controlling mosquitoes, or providing adequate medical care. In Africa first place takes malaria – this invasion resulted in the death of 665000 people in 2010, predominantly young African children. Second place takes Leishmaniasis – estimated 500000 new cases of visceral leishmaniasis annually (90% in Ethiopia and Sudan). Due to bad hygienic conditions third place takes *Entamoeba histolytica* – up to 100000 people die annually from amoebiasis. Place № 4 takes African trypanosomiasis – only in 2009 the number of reported cases fell below 10000 for the first time in 50 years. Commonly the total number of cases was estimated to be 50000 to 70000. Last place we gave to *Ascaris lumbricoides* causes ascariasis, estimated to infect great percentage of African people, but it often does little damage. Conclusion. In Africa due to suitable climate and other conditions the most dangerous is malaria and visceral leishmaniasis, not so great are problems with amoebiasis and African sleeping sickness. Despite on great level of *Ascaris* invasion, this parasite cannot cause such harmful effect.

### **EFFECT OF EXPERIMENTAL HYPERSPLENISM ON THE ERYTHROPOIESIS**

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Growth of the anemic conditions in clinical practice need to be improved in diagnosis, prevention and treatment of this disease. So one of the manifestations of the "hypersplenism" syndrome is an anemic development. According to various studies "hypersplenism" and regeneration of bone tissue accompanied by increasing of serotonin levels. Explanation of the mechanisms of anemia in the given pathologies are different and are not determined at present time. The aim of our study was to establish inhibition during experimental erythrocytosis. Materials and methods. Blood samples were taken from the tail vein. The content of erythrocytes, reticulocytes and hemoglobin levels were determined by standard unified methods. The obtained results. Serotonin content research in the blood of animals with a decrease of the depletion function of the spleen showed its significant increase in the blood of animals with erythrocytosis with  $35,22 \pm 0,16$  nmol/l to  $41,14 \pm 1,12$  nmol/l. This hyperserotoninemia developed in patients with hypersplenism. Reduction of blood serotonin was observed in animals after removal of the spleen to  $33,81 \pm 0,38$  nmol/l. Research on animal blood vein ligation spleen showed a decrease in the number of red blood cells with  $7.05 + 2.08$  10<sup>12</sup>/l to  $5.58 + 1.03$  10<sup>12</sup>/l decrease in hemoglobin 140,21g/l to 123.59 g/l and level of reticulocytes  $219.21 + 6.31$  to  $58.21 + 3.36$ , which indicated a suppression of erythropoiesis. Erythropoiesis was also suppressed after injection of the erythromass. Thus, we consider, that increase of serotonin levels in the studied animals with experimental hypersplenism causes inhibition of erythropoiesis, that gives base to consider serotonin as an inhibitor of erythropoiesis.

### **ENVIRONMENTAL EVALUATION OF WATER CLEANING WITH BASALTIC TUFF**

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Relevance: The global environmental crisis requires an urgent solution of problems of natural and waste waters from pollutants of various kinds. This indicates the relevance of a comprehensive investigation on the study of natural mineral basalt tuff in the process of removing pollutants of various kinds from water. Objective: