

### **Short Communcation**

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## Why Venous Blood Donation Useful to Organism?

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#### **Abstract**

**Purpose:** In the scientific literature, the question of the degree of utility or usefulness of conventional venous blood donation is being studied. Our group of physicists joined the exploration of this issue. This article can be the certain contribution in understanding of this effect.

**Methods:** Participation in scientific conferences, discussions with leading Russian cardiologists, retrieval of information search in the literature.

**Results:** There are sufficiently many medical articles and communications in the press about the great benefit of blood donation. It acknowledges that, generally speaking, the blood donation leads to two large positive effects: with the aid of the donated blood the doctors save the lives of people, and donors with the period obtain bonus- the considerable strengthening of their health. The latter is confirmed with the statistic studies.

Conclusions: The problem of donation is not yet understandable. Further study of this question is required.

Key words: The benefit of donating blood; New Theory of CVD; Arteriovenous anastomoses; AVA; Heart failure

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#### Introduction

Before beginning of discussion of the issue of donation, let us pay attention to the New Theory of Cardiovascular Diseases (CVD), developed by us [1-19]. Developing this theory, our group of researchers showed that the presence of large arteriovenous anastomoses (AVA) in the human vascular system and their suboptimal functioning can lead to many diseases: arrhythmia, heart failure, diabetes, stasis and liver fibrosis, arteriosclerosis of vessels, certain types of cancer, systemic inflammation, diseases of the pelvic organs and others.

#### Results

Let us emphasize, this article does not discuss medical issues in the presence of congenital abnormalities or after an injury or traumas. The need to open or discover AVA, apparently caused due to the sharp lifts of systemic arterial pressure (BP) during times of stress, with the large physical or psychological loads. After a part of the blood flows into the veins, BP decreases. The opening\closing of large AVA leads to a jump in blood pressure- it is the syndrome of "Ermoshkina-Lukyanchenko" [2]. It can be assumed that large AVA in a healthy

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person should be tightly closed, because the energy of the heart-pump should be used sparingly. Obviously, with prolonged open AVA, the myocardium performs additional useless work.

Another fact: Due to the decrease in the volume of arterial blood, there is an imbalance in the volumes of arterial and venous blood in the direction of an increase in the volume of venous blood. The increase in pressure in the venous system can lead to pulsations of the liver, overflowing of blood and further to pulsations the post of venous blood in the hollow veins. These pulsations during heart attacks can be observed on the cervical veins. Throbbing volume of venous blood exerts a mechanical effect on the right atrium, generates a mechanical wave traveling along the myocardium, which leads to mechanically induced arrhythmias, including paroxysmal atrial and ventricular tachycardias. The fluctuations of the column of venous blood correspond to the resonant frequencies of the cardiovascular system, therefore, the heart rate with tachycardia is quite stable, and the heart rate does not depend on the phase of respiratory movements. This type of myocardial arousal suggests that the sinus node for the period of a tachycardia attack is in a passive mode and is waiting for the first opportunity to take control of the triggering of cardiomyocyte excitation. In addition to the mechanical triggering of arrhythmia due to open AVA, there is an even more important supposed scientific discovery. After a while after the opening of the AVA lumen, pressure increases not only in the hollow veins, but also in some groups of small veins and venules. Thus, from the point of confluence of AVA to the veins, the overpressure spreads not only upwards through the hollow vein to the right atrium and cervical veins, but also downwards, spreading, as the venous valves become damaged, lower and lower, to the smallest veins.

There is evidence that AVA can exist between the mesenteric artery and portal vein [20]. At the initial stage of hemostasis there are edemas, while the biochemical and mechanical properties of venous blood change, it becomes dense and dirty in the stagnation zones, its fluidity decreases. But since an ordinary, physically inactive person, day after day, the pressure gradient between some arterioles and venules remains critically small, this leads to a lack of perfusion of individual organs, to microscopic blockages of capillary circulation scattered through the tissues, to ischemia, to oxidative stress.

In fact, in critical cases blood slowed down their movement or stops and throught arteriola, and throught venules. Swelling, leakage occurs arise the blood through the thin walls of blood vessels. This pathology may eventually lead to the micro thrombosis of small vessels, and then to thrombosis of larger vessels, mainly the veins.

We emphasize that official medicine considers the opposite (that is, it rearranges the consequences and cause): first thrombosis, emboli, or some "obstacles" for the outflow of venous blood, and then an increase in venous pressure. This blatant mistake led to a long (in 200 years!) Stagnation in medicine, to an incorrect explanation, for example, of the controversial "syndrome X" and "heart failure" (especially with a practically healthy heart), but none of the representatives of official medicine is in a hurry to check accept the New Theory. Already almost 7 years this question is hanging in the air. In a person who leads a healthy lifestyles, significant blockages and stagnation of blood do not occur: the venous blood from the legs and from the pelvic area is pumped up by the muscles of the legs and muscles of the lower half of the body, due to the movements of the down-up respiratory diaphragm. Therefore, to maintain health, you need proper nutrition and daily exercise: swimming, gymnastics, special breathing and health practices, running, walking and others. We note here that stagnant blood during the night rest in a horizontal position in young and healthy people is again involved in the bloodstream, and in the elderly for 7-8 hours does not have time, because the volume of stagnant thick blood is very large, and the heart is weaker. Let me remind you that in the horizontal position of the body the venous blood in all organs has a pressure approximately equal and close to zero.

This position of the body facilitates easy extraction of blood from stagnant zones only due to the work of the heart and moderate respiratory movements. This assumption partially explains why in the morning people have high blood pressure and the densest blood, why often in the morning hours there are events with fatal outcomes.

Recommendations from the perspective of the New Theory:

1. In order to be active and healthy, it is necessary to lead a healthy lifestyle, avoid overeating, do not abuse alcohol and tobacco, sleep for 8 hours and if works in an office get up from your computer every 40 minutes.

- 2. It is necessary to accustom yourself to properly respond to various nervous and psychological disturbances and disorders. The authors of the new theory suggested that the long experience of life dissatisfaction elements can lead to growth and the discovery of AVA. Practically always, the flow of blood from the arteries into the veins occurs imperceptible for people. Apparently, in a mentally depressed person who leads a sedentary lifestyle, ABA after opening can be completely or incompletely closed with more delays in time. People say: "All diseases from the nerves," we can correct: "All diseases from the nerves, since the psychological long-term stresses lead to the open of AVA". Apparently, in theories about the causes of hypertension and stress theory, for example, in the works of G.F. Lang [21] and Hans Selye [22] lacked the major parts or links, namely, the "invisible" AVA and the blockages of capillary circulation caused by them.
- 3. Is it possible to be cured radically by contemporary tablets, for example, from the chronic heart insufficiency? Usually no, since the regions of hemostasis and pathology of organs, and hearts including with the years gradually can only increase. But treatment must be directed toward the restoration of the proper functioning of large AVA. So far the only effective treatment can be "lifestyle change" and "special training", in which the areas of stagnation of venous blood are reduced and the correct work of AVA is restored. In the future it is possible with the installations of artificial electronic more sensitive AVA.
- 4. Another option, somehow it is necessary to periodically retrieve portions of blood and/or increase the fluidity of stagnant blood from the peripheral zones of the human body, where these liquids are for a long time in a state close to stasis. Such areas include the area below the nape, back, pelvis, legs. After stagnant blood with a passive lifestyle slowly turns into small or large clots, the cells are prone to necrosis, and the tissue fibrosis. In fact, stagnation creates conditions for the emergence of cancerous tumors. In addition, the "thrombus" detached from the walls of the veins leads to the threat of instant death due to blockage of one of the main arteries of small or large circles of blood circulation.

It can be that the well-known procedures for the prevention, treatment of diseases, prolongation of life were directed: arabian hidzhama, medieval medical phlebotomy, vacuum massage cupping, plasmapheresis, use 10% saline bandages, hirudotherapy, cauterization. This is the result of the search for humanity for many millennia. I believe that these methods were found by trial and error. This article confirms the need for such procedures for purification. The only question is how to make the organism better by more civilized and effective methods.

Many generations of doctors have tried to understand what exactly happens in people under the influence of stress. Where are these keys that triggers and a person begins to quickly lose health, working capacity, ageing? Why do prolonged stress leads to hypertension, heart failure and many other diseases? Apparently, the New Theory of CVD had answered this question- it is the pathological work of the "invisible" anastomoses AVA. And now let us return to the title of the article: "Why venous blood donation is useful for the organism?"

Confirmation of this fact, unexpected for official medicine, is contained in a large number of primary sources [23-28]. We believe that it is possible to trust the conclusions of doctors, since the real statistics from the different countries are resulted. And all this, despite the fact that the fence of venous blood from donors is not made from a stagnant zone, i.e. not from the optimal zone for the donor, but from the forearm. The area of the forearm is optimal for the recipient, because, apparently, it is in the vessels of the hands i.e. purest blood as the hands are above the heart, they are more often in motion, less prone to swell and stagnate.

So, according to many sources [23-28] regular donation leads to the following health effects of donors.

- 1. There is a stimulation of a new blood flow to all organs.
- 2. There is a decrease in the frequency of heart attacks.
- 3. New blood cells regenerate.
- 4. Prevention of liver disease occurs.
- 5. Prevention and reduction of the risk of chronic diseases.
- 6. A balanced level of iron is maintained.
- 7. Reduces oxidative stress in the vessels.

- 8. There is a decrease in the risk of CVD due to an improvement in blood fluidity.
- 9. Reduces the risk of cancer of the rectum, liver, intestines, lungs, etc.
- 10. There is a decrease in cholesterol.
- 11. The process of wound healing is accelerated.
- 12. There is a decrease in excess weight.
- 13. There is a prevention of premature aging of the body.
- 14. Stress is relieved, an excellent mood is stimulated.

The question arises, what would be the effectiveness of a blood transfusion for a donor if the blood sampling was not from the forearm, but from the areas of blood stagnation: from the legs or from the pelvic region? Apparently, such experiments have not yet been conducted. It can be assumed that the efficiency would be significantly much higher.

And now let's compare the list of positive effects from donation with a preliminary list of possible diseases due to open AVA (see the "references" for this article). In general, the list of preventive health effects for the donor is complementary to the list of diseases previously proven by the New Theory of CVD, if AVAs does not work properly!

This coincidence gives confidence that the New Theory of CVD is correct, and it can be considered a proven, centuries-old experience and statistics of donation. It remains only to confirm its universality in special experiments.

One more question. What is the position of the top management on medicine and health in relation to the New Theory of CVD? Answer: interest for 7 years is missing completely, although they know about Theory, the initiatives are only from the authors of the New Theory. And what is the position on donor ship from top management? It turns out that the position of top management in different countries on the usefulness of donation is very cautious, if not frightening, there are no strict articles in medical journals. It is not surprising: "invisible" large arteriovenous anastomoses for them, apparently, do not exist or they are ignored, tk. the existence and pathological effects of AVA do not fit into any of the well-known, but controversial "theories". In addition, as before, at the beginning of 2018, all CVDs (more than 150 of them) remain for official medicine diseases with unknown mechanisms. We offer co-operation.

#### **Conclusions**

- 1. Regular blood donation is a procedure that is useful for the health of the donor.
- 2. According to the New Theory, most CVD are caused by malfunctioning arteriovenous anastomoses (AVA), which when in the open state block the capillary circulation in some organs.
- 3. The new theory of CVD justifies the positive effect of venous blood donation procedures for donor.
- 4. It is necessary to conduct a series of experiments with the extraction of portions of blood from venous plethora, from the legs and from the pelvic area. We believe that the health effect for the donor, according to the New Theory of CVD, will be higher.

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