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Morphology of Small Circulatory Arteries in Experimental Metabolism

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Abstract: This of the article purpose metabolism in the processes to the lungs going arteries and arteries wall structure importance lighting, low mobility as a result come outgoing hypodynamia and metabolic syndrome in lungs Study of morphological and morphometric changes in arteries and correction.

Keywords: Small blood rotation circle lung arteries, metabolism, tunica adventitia, tunica media, tunica intima, Jerusalem artichoke Danikafarm, lungs artery hypertension, hypoxia.

Introduction: We know that blood rotation our system our every an organ and our fabrics one whole as together It is necessary food substances transports, harvests was excess products remove sends and alien from substances protection does. Metabolism (Greek: metabole - change) in cells happened to be fermentative reactions complex. In metabolism organic life activity for necessary was substances and energy harvest These processes done in increasing heart and blood vein system activity important.

In the lungs various pathological processes development breath to take organs, blood vessels, alveoli, interstitium, pleura damage with past possible. Lungs arteries damage, small blood rotation within the scope blood in the veins changes many companion diseases with passing pathological become is considered. Small blood rotation within hemodynamics violation early determination today's on the day again big interest wake up It is known that the lungs gas exchange process provider system own inside In this system main place of the lungs external arteries and member inside arteries organization does . Small blood rotation within come outgoing in pathologies arteries structural change important place to hold in literature Modern in literature lungs arteries endothelial floor various in pathologies change many These arteries collagen, elastic fibers and binder of the tissue other of fibers change as a result pathological processes develops. These with one in line blood in the veins to age looking at also changes develops. The above in consideration take lungs member inside arteries morphological structure to study own before us goal we did.

Arteries morphology: arteries to the function according to also noticeable in morphology to differences has. Function when which organ blood with to provide in mind is being held. Usually, everyone arteries wall floors one arteries category and they of the wall thickness level with All arteries wall three from the layer consists of :

- **Tunic Adventitia (Externa)** - arteries and of the veins strong external coating. It is a binder from tissues, as well as collagen and elastic from fibers consists of. This fibers arteries blood currents under the influence on the walls harvest to be pressure because of expansion prevent to take for extension possible.
- **Tunica Media** - artery and of the veins of the walls middle The floor is smooth. muscle and elastic from fibers consists of. This layer in the arteries to the veins than thicker will be.
- **Tunica Intima** - artery and of the veins internal layer. In arteries this layer elastic tissues with covered elastic membrane and smooth from endothelium consists of.

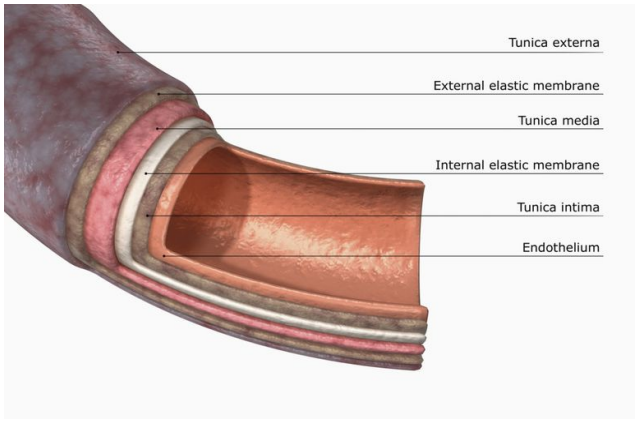

Figure 1: Arteries wall floors

Lungs artery morphology: heart right from the ventricle beginner vein carbonate to anhydride saturated of blood to the lungs to go provides. Its length 5 - 6 cm, width and 3 -3.5 cm will be. Lungs artery aorta arc below, IV-V chest vertebrae opposite right and left lung artery to networks is divided.

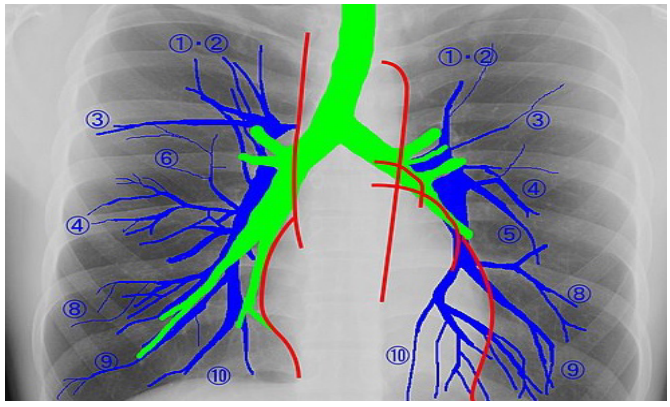

Figure 2: Lungs artery of the tree colored topography

Practical experience: Adult white laboratory rats weighing 180-200 grams are used as the study material. Experiments and animal euthanasia by decapitation are carried out in accordance with the “European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes” (Strasbourg, 1985). White rats taken for the experiment are divided into 4 groups. Each group consists of 15 rats.

The first group is the control group, which consists of healthy rats without clinical signs of somatic and infectious diseases. The rats in the control group are constantly fed a traditional diet with free access to food and water.

In our second group, we call the experimental hypodynamia and metabolic syndrome model. Special cage pens are used to create the hypodynamia model. In this case, the area of the cages is kept at least 150 cm^2. Healthy rats, devoid of signs of infectious and somatic diseases, are placed in special cages and fed a diet rich in fat and carbohydrates. The diet of the rats consists of 60% laboratory food, 20% sheep fat, 20% fructose. Instead of drinking water, a 20% fructose solution is given. After 60 and 90 days of the experiment, the rats are euthanized.

After the third group was called the hypodynamia and metabolic syndrome model, starting from the 60 th day of the experiment, the rats were removed from the experiment, removed from the panel cage and placed in a regular cage. The diet was started with a proper diet, that is, protein, fat, carbohydrates 24%: 6%: 44% (feed "Delta Fids"; Biopro, RF). Also, as an antioxidant and correction of metabolic disorders, Topinambur Danikafarm (0.4) tablets were dissolved in water 2 times a day and administered per os through a subclavian catheter.

Rats in the control and experimental groups were kept under identical vivarium conditions.

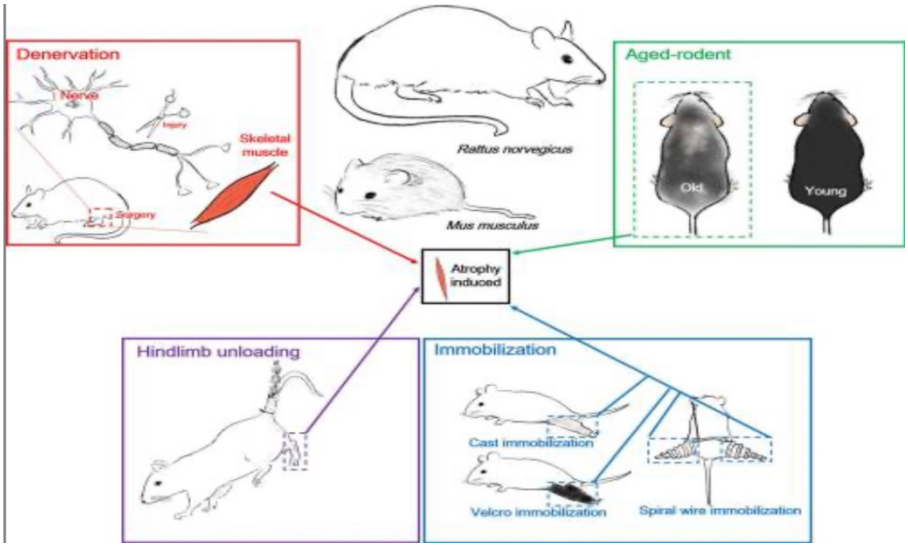

Figure 3. In rats held hypodynamia experience

Results and Discussions: Metabolism processes disorders, especially lipids, carbohydrates and proteins correctly processing in giving problems, lung located to the arteries negative impact to show These processes are possible. and they related to problems to the arteries impact so that they to narrow or elasticity no'to the point of being take arrival possible.

Metabolic diseases and in the lungs to the arteries effect:

Dyslipidemia (fat exchange disorder): Dyslipidemia, i.e. in the blood changes in fat (lipid) levels atherosclerosis If lipids, especially cholesterol, are and triglycerides high if they are artery on the walls gather and clog arteries narrowing This condition is possible in the lungs. also affects the arteries does.

They are in the lungs. oxygen exchange for responsible was arteries narrows, this and the lungs enough oxygen prevent does and lungs hypertension (pulmonary artery high pressure) causing release possible. Lung in the artery damaged veins through of blood leakage It becomes difficult, this is in the lungs. high pressure and hypoxia (oxygen deficiency) condition creates.

Obesity: Obesity metabolism other to the violations, that including dyslipidemia and insulin resistance take Obesity is coming. arteries to narrow and lungs hypertension to develop contribution addition possible.

Obesity cardiovascular to the system, that's it including the lungs additional load take This condition is caused by inflammation of the lung. blood flow to worsen and lungs in the artery pressure increase possible.

Lungs Artery Hypertension (PAH): Metabolism disorders in the lungs to the arteries how impact to show about when speaking, lungs artery hypertension brought release possible highlight need. Lungs artery hypertension, pulmonary blood in the veins high pressure in the lungs arteries narrowing and contraction as a result to the surface comes . Lungs hypertension and heart and to the lungs too much outside high pressure gives, this and heart shortage or lungs enough oxygen prevent does.

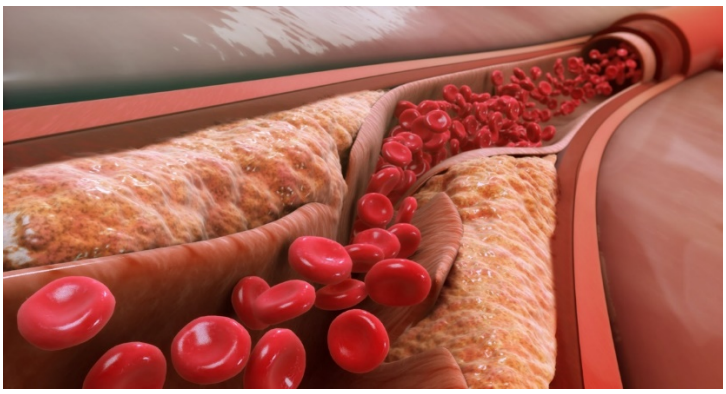

Figure 4: Atherosclerosis

Conclusion: Overall metabolism process lung artery to the activity directly impact shows and organism energy supply for necessary the conditions creates. In medicine metabolism processes lungs to the artery the impact study important, little mobility as a result metabolism processes weakening blood veins physiological and morphological in the structure to changes take This field is coming . good study, prevention to take and treatment measures find through one row metabolism with related was blood vein diseases, especially very wide widespread and 18 million per year human to death indirectly reason happening atherosclerosis prevent to take help gives.

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