

# Allergy: a new approach to etiopathogenesis and treatment

## Summary

Allergy is considered to be a multifactorial disease with no known trigger. The hypothesis of allergy: in genetically predisposed individuals, long-term negative factors (chronic stress) cause excessive pupil constriction via the cortico-nuclear pathways, which is manifested by significant activation of the parasympathetic nervous system. Constricted pupils (reduced luminous flux) trigger pathological biochemical processes in the body through the optic-vegetative system, which leads to a deterioration in the physical and psychological conditions of patients.

It is proposed to include in the protocol for the treatment of allergies (and all somatic and mental illnesses) the medical dilation of the pupils to relieve the negative effects of an over-activated parasympathetic nervous system on the body.

**Keywords:** allergy, pupil, optic-vegetative system, parasympathetic nervous system, mydriatic

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## Introduction

Allergy is a hyperreaction of the immune system to stimuli, a multifactorial disease with a hereditary predisposition.<sup>1-5</sup> However, the trigger of the disease is unknown, so treatment is symptomatic (a number of drugs- glucocorticosteroids, monoclonal antibodies-have serious side effects); allergy is characterized by chronicity, recurrence, and often resistance to anti-allergic drugs, and there are idiopathic (non-immunological) forms of the disease.<sup>6-14</sup>

Immune system irritants can include: food, pollen, dust mites, insect bites, medications, chemicals, infections, smoking, cold, heat, physical and psycho-emotional overload.<sup>2,4,15,16</sup>

Allergies affect 40% of the world's population and this number is constantly growing.<sup>17,14</sup> Allergic diseases are among the three disorders that need to be controlled in the 21st century.<sup>5</sup>

In our opinion, the main reason for the rise in allergic diseases is chronic stress.

What can be a trigger of the allergic process?

We think it's excessively constricted pupils.

It is known that «all diseases come from the nerves». The above-mentioned negative factors cause chronic stress in genetically predisposed individuals, which causes excessive pupil constriction via the cortico-nuclear pathways.

Narrowed pupils (reduced light flux) trigger pathological biochemical processes in the body through the optic-vegetative system, which leads to a deterioration in the physical and psychological conditions of patients.

Where there is a «weak link» in the body (which is genetically programmed), it «breaks» (i.e., the pathological process is realized). In case of allergies, the target organs can be the skin, eyes, nose, lungs, etc.

Indeed, everything in the human body is interconnected. The eye is an important part of the optic-vegetative system: eye - hypothalamus - pituitary gland. Due to the stimulating effect of light, the body's

endocrine glands produce hormones: pituitary, adrenal, thyroid, sex, and others. That is, the eyes provide not only vision, but also the harmonious development of all organs and systems of the body.

If the body - through the cerebral cortex, hypothalamus, reticular formation - acts on the size of the pupil, then, according to the principle of «direct feedback,» the size of the pupil also affects the entire body.

When the pupil is dilated, the mood is high, the person is active physically and intellectually; when the pupil is constricted, the mood, physical and intellectual activity are reduced.<sup>18-20</sup>

Thus, in case of allergy due to chronic stress, excessive pupil constriction occurs, and the parasympathetic nervous system is significantly activated. This is manifested in symptoms such as lacrimation, rhinorrhea, itching, urticaria, cough, bronchospasm, laryngospasm, nausea, vomiting, diarrhea, etc. There are also changes in the psyche: patients are indecisive, anxious, depressed.<sup>3,12-14,21-24</sup>

Summarizing the above, we can say that the allergic process (and its idiopathic forms) is triggered by excessively constricted pupils.

The following facts support this hypothesis.

- A cause-and-effect relationship between ocular allergy and senile cataracts, keratoconus, and dry eye disease has been identified.<sup>25-28</sup> We have substantiated that these diseases (cataract, keratoconus, dry eye) occur in genetically predisposed eyes with excessively constricted pupils.<sup>29-31</sup>
- It has been proven that global warming causes an increase in all diseases, including allergic diseases.<sup>32</sup> We have substantiated that the trigger for the multisystemic impact of heat on human health is excessively constricted pupils.<sup>33</sup>
- It has been established that allergies often affect the psychoemotional state of patients (anxiety, depression, inattention, hyperactivity, etc).<sup>3,14,22</sup> We have shown that the trigger for depression and other mental illnesses is excessively constricted pupils.<sup>18-20</sup>
- It has been shown that allergy sufferers often have such comorbidities as hypertension, diabetes mellitus, and

obesity.<sup>3,4,9,12,14,15,33</sup> We have substantiated that the trigger for these diseases is excessively constricted pupils.<sup>34</sup>

What do we offer?

Moderately dilate the pupils in patients with allergies.

This can be done in the following ways:

- 1) Midriatic eye drops. Pharmacologists need to develop a new class of these drugs that moderately dilate the pupil, act for a long time and, preferably, have a minimal effect on accommodation. It is advisable to carry out such therapy under the control of biomarkers of the activity of the parasympathetic and sympathetic nervous systems.
- 2) Activation of the sympathetic nervous system: sports, limited use of gadgets, communication with family and friends, adequate sleep, positive emotions, etc. People who believe in God and do good deeds have a better prognosis.

In case of pollinosis, the use of mydriatic agents can be seasonal, in combination with the wearing of sunglasses (which also moderately dilate the pupils).

I would like to say something about anaphylactic shock (characterized by excessive pupil constriction and extreme excitation of the parasympathetic nervous system).

Unsurprisingly, it is treated with immediate intramuscular or intravenous injections of epinephrine (a sympathomimetic that dilates the pupil).<sup>7,9</sup> However, the dose of epinephrine administered is not always sufficient to achieve mydriasis (refractory anaphylaxis).<sup>23</sup>

Therefore, we suggest that in case of anaphylaxis, in conjunction with the existing treatment protocol, immediately drop mydriatic in the eyes to dilate the patient's pupils, activate the sympathetic nervous system and relieve the negative effects of the parasympathetic nervous system on the body.<sup>35</sup>

In our opinion, this pathogenetic treatment minimizes the need for the use of glucocorticosteroids and other potent drugs.

Thus, we believe that allergic diseases are encoded in pupil size. The pupil is the most important structural element of the body. Thus, the trigger for allergies can be excessively constricted pupils and treatment should begin with their medication dilation.

## Conclusions

The trigger of allergy may be excessively constricted (due to chronic stress) pupils, which is manifested by significant activation of the parasympathetic nervous system with deterioration of the physical and psychological conditions of patients.

It is proposed to include in the protocol for the treatment of allergies (and all somatic and mental illnesses) the medical dilation of the pupils to relieve the negative effects of an over-activated parasympathetic nervous system on the body.

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## Conflict of interests

The authors declare that there are no conflicts of interest.

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