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### Divergence Dysfunctions Without Tropia. Change in approach

Divergence is the ability to turn two eyes outwards to look at distance object. Insufficiency (DI) and excess (DE) are main conditions in the optometry practice of the divergence dysfunctions (DD). Both dysfunctions are relatively rear. However its impact on vision system, and particularly the binocular perception, is palpable. In our practice we can divide all patients on two groups. First group is patients without any complaints, when conditions were disclosed by chance during routine examination (for example, incoherence in phoria for distance and fusional reserves, or significantly higher phoria figures for distance compare to near). Previous examinations in other clinics did not found these issues, because divergence was not evaluated due to lack of time or absence of necessary equipment or skills. Even if patient had asthenopic complaints it was suggested as symptoms of inappropriate correction or computer vision syndrome.

Second group is patients with main complaint on double vision for far distance. In this point we obtain difference with the concerns articles. In our practice, a great number of patients from the second group with DI were younger (start from 20) and main their feature was obstacle during driving. Our treatment encompassed for the first group - correction of an ametropia (if was necessary) and a vision therapy at home with prisms. For the second group we used a prismatic correction and a prismatic vision therapy at home. When we offered vision treatment in office they reheated it, because of lack of time or place where they live (villages or far from clinic). Treatment Thereby, we offered treatment "at home", which was acceptable. We provided our patients with prismatic lenses 3, 5, 8PD, which can be manufacture easily, diameter 50, as the the most convenient for manipulations.

**Result:** Moreover, our patients was supported by video resources, how used their optical equipment. Patients had to find any clear object at far (5 meters and father), then put the prism lens straight before an eye. After that patient had straggle double vision. After several months, patients increase power of the training prism, and after cope with 8PD, they applied combination of two lenses: 3+8 and eventually 5+8. In 3 - 6 months patients could decries their prismatic spectacles, and started again from 3 PD. Total treatment may take from 12 to 36 months. In the first group, as usual was problem

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with complacency, as patients did not any complaints, in the second group - before achievement of single vision patients were much more seriously and regularly, unfortunately, after disappearing of double vision compliance became poor. Just after regression (turn back double vision) they returned to appropriate treatment.

## Conclusions:

1. It will be useful to divide divergence dysfunctions on “latent” and “manifest”. Latent DD in diagnose will be signal for other colleagues exam and control divergence.
2. As usual patients with DI or DE visit optometry clinic when these conditions have palpable influence on their activities. Thereby, fusion reserves and phoria for distance should be including in routine eye examination.
3. Treatment of DI and DE may take several years. Patients should be informed about duration. Moreover, continuous treatment “at home” is much more appropriate.
4. From our point of view, treatment with prismatic lenses “at home” should be evaluated as vision therapy of the first line.

## Articles:

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## Biography

Shekhovtsov Maksym is an Ophthalmologist, Paediatric Ophthalmologist, Strabologist, Contactologist. He is a Medical director of Optometry Clinic. He is graduated from National Medical University named A.A. Bogomolets, Kyiv, Ukraine. In 2019 found LCC Optometry school. More then 1000 doctors and optometrist attended lectures and workshops during existing school. Main interests: popularisation and standardisation optometry service in post-USSR territory, non-surgical treatment of strabismus, myopia control, contactology. In 2020 found project in Optometry clinic – eye examination for children from birth in 12 cities in Ukraine.