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SCENAR THERAPY IN TREATMENT OF MYOPIA AND HYPERMETROPIA IN SCHOOLCHILDREN

Vision problems are universally on the rise. Myopia, in particular, is regarded as one of the most important socio-medical problems of today.

What factors are known to cause the development of myopia?

1. Hereditary susceptibility – children of myopic parents are frequently myopic;
2. Weak primary accommodation causing a compensatory lengthening of the eye;
3. External conditions, professional stress caused by extended concentration on small objects located close to the eyes. Such a development path of myopia is frequent in growing subjects;
4. Unbalanced, strained accommodation and convergence causing accommodation spasms, leading to false and subsequently to true myopia. This can be promoted by vegetative nervous system disorders, since the pupil sphincter is mediated by parasympathetic nerves and the dilatators by the sympathetic. Strange as it seems, general health conditions can contribute much to myopic development. Such diseases as rheumatism, arthritis, chronic tonsillitis escalation cause a general weakening of conjunctive tissues in the whole organism, including the eye sclera. Such a sclera extends readily, causing increased myopia.

Myopia is among the principal causes of eye-related handicaps (25-28%); absolute frequency varies depending on countries and regions, in Russia the frequency of myopia in schoolchildren is assessed at 2,3% to 13,8%, in middle school graduates at 3,5% to 32,2%.

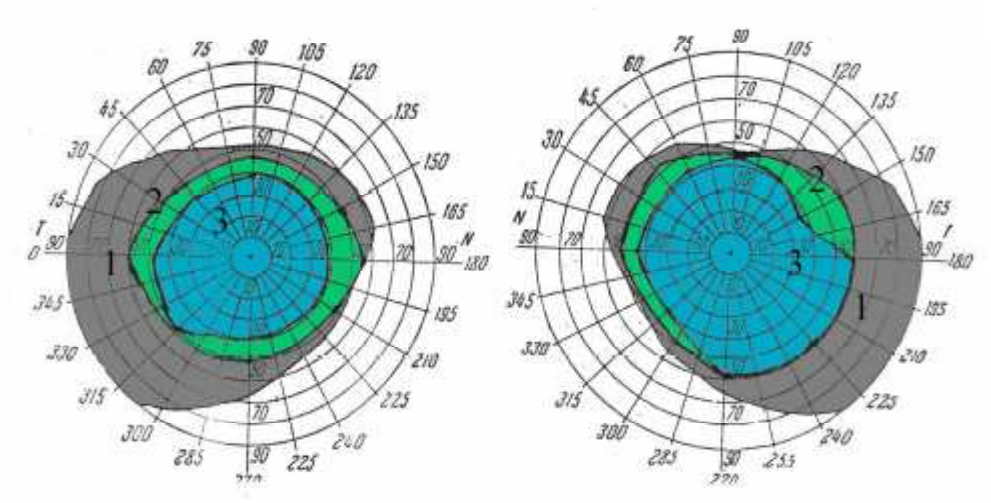
For many children today's sedentary lifestyle, early introduction to the watching of TV and working with computers at preschool age causes the adaptation of the eyes to close viewing distances at the cost of remote viewing clarity.

Hypermetropia (farsightedness) is characterized by the location of a main optical system focus behind the retina. This is caused by the spherical shape of the eyeball and subnormal size. About 8% of adults are diagnosed with weak (under 2,0 D) hypermetropia and 4% have hypermetropia over 2,0 D. Farsighted eyes quickly get tired, especially during work on close distance at reading and the writing.

To decide on the applicability of SCENAR therapy in the abovementioned disorders we used the SCENAR device with an external "hairbrush" electrode. The external electrode of the device was placed under the occipital tubercle, and was slowly moved peri-orbitally for 15 minutes. The treatment used comfortable power settings of 90 Hz frequency.

8 patients with myopia and 7 with hypermetropia were treated, none reported any unpleasant sensations during or following the treatment sessions. 6 to 9 sessions were performed on each subject. All patients underwent eyesight evaluation, electro sensitivity, electrolability measurement and perimetry of both eyes.

Presented below are some selected treatment results:
1. Patient P. 15 yrs. old, diagnosed with slight myopia
VOD=0,2-0,3 sph -1,5D=0,6
VOS=0,3 sph -2D=0,7
Following treatment:
VOD=0,7
VOS=0,7



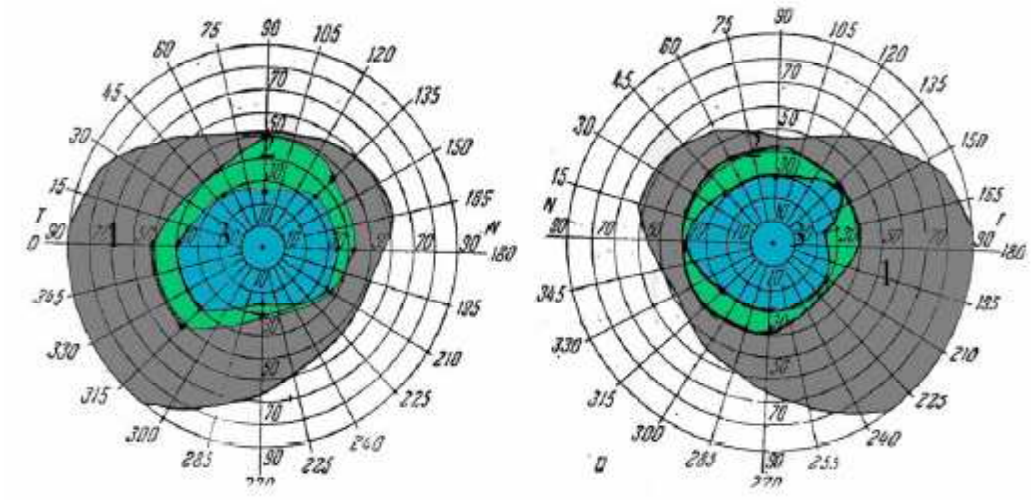
OD OS

Illustration figures:
1. Normal view field
2. View field before SCENAR treatment
3. Improvement in the view field following SCENAR treatment

2. Patient K. 14 yrs. old, diagnosed with slight myopia
VOD=0,4 sph -1,5D=0,9
VOS=0,3 sph -1,5D=0,9
VOD=0,6 sph -1,0D=1,0
VOS=0,5-0,6 sph -1,0D=0,9

3. Patient N. 17 yrs. old, diagnosed with average myopia
VOD=0,02
VOS=0,5
VOD=0,04
VOS=0,7

4. Patient D. 7 yrs. old, diagnosed with slight hypermetropia
VOD=0,4
VOS=0,5
VOD=0,6
VOS=0,6



OD OS

5. Patient V 9yrs. old, diagnosed with slight hypermetropia
VOD=0,5
VOS=0,9
VOD=0,7
VOS=1,0

6. Patient A., 12 yrs. old, diagnosed with average hypermetropia
VOD=0,1 sph +6,5D=0,5
VOS=0,1 sph +6,5D=0,7
VOD=0,5-0,6 sph+6,5D=0,6-0,7
VOS=0,4 sph +6,5D=0,7-0,8

Thus, our preliminary research allows the conclusion that SCENAR therapy is efficient for treating myopia and hypermetropia in school-aged children. It is recommended that the SCENAR developers consider a special "spectacles" external electrode for connecting to the device; or possibly a consideration of a specialized SCENAR impulse generator version located directly in the spectacles frame.