Abstract: - In this paper is presented some theoretical and practical considerations about children and young people vision eye care process developed into a local program in Transylvania region, with optical companies help and optometry students’ implications. It is very important to understand, to inform and to educate all people in visual problems field and also to prevent, from childhood until young ages (25 year old), the installation of visual refractive errors, the correct use of their visual functions, to establish visual ergonomic places and to avoid computer syndrome.

Key-Words: - education, optometry, vision, refractive errors, amblyopic eye.

1 Introduction

In all period of baby children growth occur a lot of compensatory or inhibitory mechanisms which take in account the length of eye axis anterior-posterior, curvature radius of cornea, depth of anterior chamber, ocular refraction, keeping between them a certain rate, which can make possible to have the normal state of eyes by emetropization or by refraction errors like: hyperopic, myopic or astigmatism.

Ocular refraction represented by deviations of transparent and refractive environments of the eye induces to the light beams which pass through them. From anatomically point of view, the eye is structured that allow to modify spontaneous the refraction function depending with object-eye distance helping by the accommodation process.

Accommodation is a reflex action and the object make its image on the retina, indifferently the distance, closer when this things are accomplishing by the interactions between ciliar muscles and eyelines, or at the long distance by the accommodation relaxation. The name of accommodation process distance, from punctum remotum (PR) and punctum proximus (PP) is accommodation route (AR),and the modification of eyelines-cristalin refraction (difference of eye refraction in accommodation effort and the refraction in rest accommodation ) is accommodative amplitude (AA), measured in diopters.

So, an object can be seen clearly in closer space due to the accommodation effort and also due to convergence, image formed on the both eye macula. This rate, it is not fixed, accommodation and convergence can be variable through certain limits without appear the vision problems. The power of accommodation is direct proportional with the convergence power, effort have been bigger with approaching distance between eye and object. Also, to see clearly is necessary occurring the miozis state (in this state the aberrations are reduced when the cristalin-eyelines change the curvature).

So, for a initial convergence, accommodation can be variable with the help of lens and the convergence can be variable in certain limits helped with prisms, for a fixed distance. If the object is at the infinite distance, visual axis became parallel, accommodation and convergence are missing. The accommodative amplitude is influenced by the age (PP will go away) and by the refraction process (hyperopic subject makes more accommodation and myopic subject less). The deficiencies of accommodations which can appear in vision process are: accommodative asthenopathy, spasm accommodative and palsy of accommodation.

Asthenopathy of accommodation. This type of manifestation due to the fatigue of ciliar muscles and can be release after a few minutes from the beginning of accommodation process for near vision. The manifestation way of this process will summarized at the deficiencies of vision like, tearful, frontal pain, sometimes sickness, their been determined by...
accommodation supra-solicitation (fatigue of the ciliar muscles. This state will be at the most of hyperopic subjects with a low level, but also at the astigmatic subjects without optical correction.

**Accommodation spasm** has like initial cause the irritations of nervous para-simpatic endings which allow a permanent contraction of ciliar muscle, a rising of refraction power and appearing of spasmodic myopia. Visual prolonged effort for near vision, some intoxications with drugs or local administration of some dangerous substances can produce diminishing of visual acuity for distance, but keeping near vision by muscular cramps

**Accommodation palsy.** This manifestation is a consequence of ciliar muscle palsy that allows the eye to enter into a static refraction. Emmetrop subject see, in this case a near vision diminishing, hyperopic will see badly also at near and far distance, but the myopic subject will not have any disturbances. If the manifestation is unilateral, vision is very non-comfortable because the clear images accomplished in non-palsy eye are blurred by the superposition of the images accomplished by the palsy eye, contrary with the situation when palsy is bilateral and the subjects’ present micropsie.

2. **Subnormal visions at children and young people**

In subnormal vision – morph-functional feature extremely low – this cannot benefit by optical correction through spectacles lens or contact lens because at some children (consider with visual handicap) can appear a big difference between near vision and far vision like visual acuity differences.

Earlier trace out of deficiencies refraction and establishing of a methodology for adequate correction is necessary to avoid installation of motility deficiencies and not in the last, the amblyopic eyes. For that and for these children with visual problems it is necessary to design and concept the investigation, correction and adaptation methodology for each case, working in a complex team with pediatric ophthalmologist, psychology, pedagogical, optometrist and opticians. This team can come helping each patient in clinical aspects, inform with necessary data and adopt the best methodology for rehabilitation. For that, it is necessary that the optometrist from team must have in mind the sum of all influences and all parameters which can interfere in this activity (fig.2).

Each of these blocks from the schema is a start point in conception of different for initial investigation for children with visual problems, which by the answers of questions from tests, can give a plus information and indices of anatomy, physiology and pathology of eyes and also about better ways to communicate with children.

![Fig.2.](image)

Communication with children must be realized between optometrist and child, at the child level and essential is the presence of parent in the optometric investigation place, because he can help this action from the beginning. This help is like a way to communicate, even sensorial, tactile, visual, audio, or smell. Visual space is the space from the front of child which can be better delimited by the optometrist observations. So, the visual space depends essentially by the “optical” quality of objects been in it, by the movement or repose state and also by the emotional impact on the child to accomplish first a correct perception and after a normal visual structure. Perception is a complex process that can be accomplished by the all senses interactions and stay at the base of intelligence developing, because by all his senses the child finds what are around him and can interact with them. After the 4-6 month age old, perception can be identified more and more with the capacity of knowing and imaginative. Children can observe, oriented to different targets from environment, an object if it are moving. By rehearsal it can improve the capacity of observation, control and coordinate the hands and the eyes. Children make breaks, after the actions, in this way they can accommodate from far to near distance in vision activities.

![Fig.3.](image)

The child attention is concentrated and he is stimulated to react when an adult solicits him or an action or some objects present interesting for him (follow with eyes
every thing interesting, wants to touch or to hit the
objects).
Stimulation of perception are based by the interactions
of all senses, take place on the combinative exercises and
materials, because the information come by these ways
must meet and help child to know and understand the
complex environment. The goal of perception
stimulation is to develop the observation spirit, the
capacity to understand, to imitate and to develop the
intelligence process by thought operations.

3 Subjects sample analyze
The actions developed by this program in different
Transylvania towns implied an analyses set on subjects
samples – preschool, school, students level and each
time the investigations procedures are adapted at the
needs and observations from initial tests.
In this way, it was very important and described in detail
the investigations on the preschool children having in
mind that in this period can appear and manifest the
visual problem and their corrections can be done with
efficiency.

Also, at these children (154) we analyzed the facial
shape and the symmetry, head posture, inclination and
position of palpebrale slit, gaze direction, pupil
reactions, fixation and corneal reflex. At this level was
establish that the strabic amblyopie is the most important
manifestation and for that we try to find the most active
and performing action to rehabilitation the visual
function.
The most used method for amblyopic strabismus was
emmetropization having like principal goal the
normalization of visual acuity of amblyopic eye.
In accommodative strabismus it is indicated total
correction of hypermetropie by optical correction but the
problems for children having age under 18 month old are
very big because it is difficult to obtain a good measure
of refraction and also the resistance at cyclopegic
substances. The most appropriate method for
examination is skiascopy even if it is a problem of
precision of refraction measure, but the experience and
mobility of optometrist are important.
From point of view of the most efficient method for
emmetropization of strabic amblyopic it was choose
occlusion which represents the cover of good fixation
eye, direct occlusion, or under different from like
indirect occlusion, alternant or direct mono-lateral
occlusion and after these the alternant occlusion for
consolidation the results.

Also was very important to explain to the strabic
amblyopic children parents’ how they can continue and
make the exercises.
These techniques are difficult and need long time, but
they are very necessary for the children to rehabilitation
of visual acuity, reorientation the fixation axis in
amblyopic eye. At older children it obtains good results
but with the condition that the amblyopic eye must be
trained each day, even at school or at home. The percent of amelioration increase using a divers methodologies and the survey of children, each moment is absolutely necessary to avoid recidivisms. At majority of children from sample the results were maintained in time and all children had improved their visual acuity.

4 Conclusions

In conclusion, for the children sample, preschool and little school children, we obtain a complete rehabilitation, and for the other children (school children) only a part of their visual acuity. This rehabilitation was bigger when the child age was smaller (any amblyopic eye can be treat before 4 years age and can be recovery); child and also family collaboration were very good: the concentration power of child was big and fixation of the eyes was central in both cases. It can be observe that the ambyloptic correction starts when it is observed and trace out by the optometrist and also it is curable. Quality rehabilitation represents the situation in which we can realize the occlusion of good eye (direct occlusion.

In 2009-2010 analyzed period was developed the investigation methodology and rehabilitation for 154 children, in which 53,2% children are in 2-4 year old sample and from this sample cca. 64,2% had amblyopic associated with strabismus.

Also it can observe that convergent strabismus (93,5%) is much frequently that divergent strabismus (6,4%), and the number of strabismus with bigger deviation angle is 44,4%. In ambyloptic analyze situation it can be see that 59% of subjects have stable central fixation, 9,1% have instable central fixation, 14,2% have non-centric fixation and 17,5% have exocentric fixation.

In these cases binocular vision is affected totally in 79,2% degree.

Stimulation of the ambyloptic eye with Heidinger beam and the eutoscopic method were the most important methods for rehabilitation of amblyopic eyes but they are rarely used.

So, the forecast depends with the age at the visual deficiencies show up, with its manifestation duration before starting the rehabilitation process and the knowing and the importance of frustrations. The perturbations of ambyloptic eye are not limited at the diminishing of visual acuity (VA) but also are most important the other physiological parameter (extrinsic motility and accommodation.

Rehabilitation almost completely of ambylopic has two imperative conditions: rehabilitation of a monocular function at all parameters and the second, integration of rehabilitated monocular function into a normal binocular function. Finally, were analyzed and applied the new tests of ambylopic rehabilitation associated with classic tests and we can observe a diminishing of the rehabilitation period and a more dynamic response agreed by the subjects. Also, the parents were more responsive at the rehabilitation and training manipulations, having the possibilities to adapt very quickly at the procedures demands.

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