

Vision Development and the Link to Developmental Milestones
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Introduction

As I have prepared for several courses within the InfantSEE® program, I have happily revisited my background in vision development and overall development. The people who have greatly influenced our part of the profession have been well versed in the concepts of vision development and overall development. Much of that has fallen by the wayside even in our small area of the profession.

In this review of information and data, I have discovered that just as optometry collaborated with many other professions in the early years, it is so important to continue this collaboration with new and different professions. In the early years, medicine was not as specialized as it is today and optometry had a very “simple” responsibility – selling glasses. Along came our heroes and the profession’s abilities and responsibilities changed. Following that, the contact lens and medical emphasis gave the appearance of superseding all that was being done and most of the collaboration regarding development took place on an individual basis rather than collaboration between professions. Further, the battles to obtain privileges in an expanded scope of optometric practice created divides not only between optometry and “medicine and all of its branches” but even within the profession of optometry itself, especially those with the responsibility of overall child development, including vision development. Even now, InfantSEE® is believed to be an “expansion of practice” by some branches of medicine.

A real eye opener was my attendance at the AMCHP meeting here last February. What had always been a blank wall was suddenly seen as a wall with many doors – and there were handles on these doors whereby we might be actually able to enter if we knock. We have always looked to the professional side to build relationships but these doors belonged to people in the trenches who worked with the babies/young children on a regular basis. This is who we are now making active overtures toward to spread the word about the link between vision development and overall development. These people are equally frustrated that care is episodic and the lust to dust concept of care has been abandoned if it was ever there at all.

How is Development Generally Defined?

Too often, development is defined as a measure of ability to do a certain task – mostly after the fact. Actually, development is an ongoing process that uses past and present information to engage in current or future activity. To restrict development to being able to do something at a certain age is awkward for the child, parent, and other caretakers as there is a push to “get him up to speed.” Development is so much more than measurement against an expected or norm. Development is an ongoing process, not a place in time.

How Does Development Take Place?

Development takes place by doing – looking by doing – reaching by doing – making mistakes and correcting by doing – exploring by doing – learning to release by doing, etc. The key word is by doing. **Development is doing.** This is nothing new as this concept has been espoused in this room for many years and many people. I have added two steps to the concept of Reach-Grasp-Manipulate-Release, plan on the front end and plan on the back end. Planning also requires doing to be successful and become an automatic process in our lives.

Curt Baxtrom recently suggested the use of the term cumulative burden to describe the difficulties that are often encountered. I would suggest that this burden results from gaining a skill without doing. A concept presented in a recent sermon indicated that if you are in a boat with two fixed oars and only use one side, you will continually go in a circle. This often happens when we develop “learn” a splinter skill without actually DOING.

I have presented that we can observe this with a retinoscope and even more believe this is the most appropriate use of the retinoscope. In this paper however, I would like to link our observations of development to overall development and how vision development influences how social and emotional milestones are determined.

What influence does vision have on overall child development?

Last year, I linked the social and emotional milestones from the American Academy of Pediatrics, particularly from the book by Shelov – Caring for your Baby and Young Child. This book is widely used by parents and promoted by Bright Futures as one of the primary sources for parental information. Also, the AAP website has this information available for parents on their website. While not making any link whatsoever, it demonstrates that most social and emotional concepts are determined from the baby's visual interaction with their world. From this, it would then appear that vision has a significant influence on the determination of a baby's social and emotional well-being.

Getman, through Gesell, recognized this many years ago in his writings on vision development. In particular, his book, *“How to Develop Your Child's Intelligence”* was heavily based on visual exploration.

In terms of evaluating milestones, there are eleven criteria listed for social and emotional milestones in the book, *Caring for Your Baby and Young Child: Birth to Age 5*. The particular criteria Shelov has selected are heavily weighted in observing visual responses to social and emotional interaction. He also selected five criteria for cognitive milestones.

Social and Emotional Milestones

- Shy or anxious with strangers
- Cries when mother or father leaves
- Enjoys imitating people in his play

- Shows specific preferences for certain people and toys
- Tests parental responses to his actions during feedings. (What do you do when he refuses a food?)
- Tests parental responses to his behavior. (What do you do if he cries after you leave the room?)
- May be fearful in some situations
- Prefers mother and/or regular caregiver over all others
- Repeats sounds or gestures for attention
- Finger-feeds himself
- Extends arm or leg to help when being dressed

Cognitive Milestones

- Explores objects in many different ways (shaking, banging, throwing, dropping)
- Finds hidden objects easily
- Looks at correct picture when the image is named
- Imitates gestures
- Begins to use objects correctly (drinking from cup, brushing hair, dialing phone, listening to receiver)

The bottom line is that vision is most influential in overall development from a very early age.

What influence does overall child development have on vision development?

There is an ongoing inter-relationship between overall development and vision development.

“This book illustrates how the child's world is built by him. Parents, teachers and clinicians can set the stage, but only the child himself can act thereon. A child is taught nothing - he learns everything - and vision is the supreme mechanism a child possesses for the interpretation of his world. All other mechanisms discussed here are important for a "total child," but they are all subservient to vision.” G. N. Getman, *How to Develop Your Child's Intelligence*

Through it all, our world is primarily a visual world – one that we must explore and manipulate the wonder of it all. Through time, we must learn to recognize time, space, size, texture, smell, feel, relationships, and all the other links to life that must be developed as a “normal” process. We call these developmental milestones but they are so heavily weighted in the development of the vision. It is optometry's responsibility to provide recognition, observation and guidance for parents in this process so the baby may have the platform necessary to reach his/her most complete development.

“Thus the child develops vision and in the course of normal development is preparing to adapt himself to his culture and to operate satisfactorily within it.” G.N. Getman – *Developmental Vision*, OEP papers, 1951

In today's culture, there are so many distractions, not only for the child but for the parent as well. When these distractions interfere with the engagement in activities that lead to more appropriate overall development, then overall development is limited and engagement in activities that lead to more appropriate overall development must be rigorously addressed through alternative means. The parent must be aware of these "problem areas" in order to provide the intervention at the earliest age of recognition.

The bottom line is that even at a very early age, vision is leading the overall process of development!

What are potential problem areas?

In today's society there are so many more cultural expectations and diversions that the parent is often left exhausted when trying to meet these "obligations." It begins just following the moment of conception. The pregnant mother often must begin alter her lifestyle in order to provide the nurturing for the yet unborn child – avoidance of alcohol, proper nutrition and exercise, and minimizing stress as much as possible. Once the baby enters the world, the parent's undivided attention to the baby is often stressful. Parent's socialization with friends is often reduced to an occasional text message or phone call rather than the personal visits. This is often done during feeding times when the parent may feel they can multi-task while feeding. This is a very inappropriate time to engage in these activities.

Baby companies are promoting activities and devices that help the baby "develop faster" and minimize the effort required by the parent. Devices such as playpens have been discouraged but oftentimes, the devices that take their place are even more restricting. The baby carriers parents use limit vision development and potentially limit overall development. Devices such as "Walking Wings" that promote less effort for the parent when teaching the child to walk are too often utilized prior to the time the child is "ready" to walk. Another area is the recommendation by child advocates is that the baby sleeps on their back in order to minimize the potential for SIDS. All of these minimize the use of "tummy time." It makes it more important that we encourage tummy time for development of visual upright and the beginning of visual exploration further away from themselves in addition to the commonly perceived development of neck muscles.

"Learning" videos such as Baby Einstein may be helpful at certain ages but they are often used when active exploration rather than passive learning is necessary. None of these are "bad" but they are often used to excess and at inappropriate times.

How can we provide earlier identification of issues and concerns before they become problems?

The most effective means is to become engaged in the process at the earliest time possible. All too often, we wait for a "problem" to appear so we can treat it rather than encouraging activities that have been commonly used in the past. But "modern technology" has overtaken "common sense." This culture of episodic care is pervasive

in all of medicine except dentistry. Begin to think lifetime care and guidance rather than episodic.

Consult with the parent about activities that engage vision in everything they do. Raise the awareness of the importance of development during pregnancy. After birth, activities such as the “airplane game” when feeding, picking up the toy knocked off the high chair so the “game” could be played over and over. Any action that increases parent/baby interaction is so necessary for the development of social and emotional milestones. We must return to the use of activities that parents have used for years.

When there are issues, where do we advise parents to turn?

Ophthalmology is not always the first option and often may not be an option at all. Other optometrists who provide specific care are usually a better resource. Also, OTs and PTs are excellent professionals with whom to develop working relationships. The pediatrician may be a good source and should always be kept in the communications loop. Outside of these traditional working relationships, there are many non-traditional professionals who can provide services.

Optometry has recently developed a good working relationship with maternal and child health groups who can be a great resource. AMCHP (Association of Maternal and Child Health Programs) is a highly respected group of professionals who work with HRSA, March of Dimes, CDC, Family Voices, and several other groups and organizations who address the needs of infants and young children. Zero to Three is another organization very much aligned with our concepts of child development – BUT – none of them link vision to the social and emotional milestones. These are representative of groups to whom we need to reach out.

Do optometrists have a responsibility in overall child development?

With the obvious link of visual development and overall development, it is important for the optometrist to first recognize the link and then to become involved in the process. At the earlier ages, the guidance activities that are all so familiar to us during development are too often not a part of the parent’s culture. Often simply making them aware of the need to get plenty of tummy time, feed from both sides, give the baby different visual experiences, etc., are all that might be necessary to provide the solid foundation in visual development that is so vital for overall development of measurable milestones in social and emotional areas and cognitive areas.

We must forge relationships with outside organizations that work so prominently with children in their critical stages of development to raise the awareness of parents and other caregivers everywhere

Bibliography:

1. Shelov, Steven P, *Caring for Your Baby and Young Child: Birth to Age 5* American Academy of Pediatrics, 2004
2. Getman GN, *How to Develop Your Child’s Intelligence*, OEP Foundation, 1962 (initial)