

LIGHT



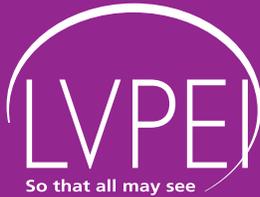
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Vision Rehabilitation Centres

Newsletter - 27

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So that all may see

Meera & L B Deshpande
Centre for Sight Enhancement

&

Dr P R K Prasad Centre
for Rehabilitation of
Blind and Visually Impaired

L V Prasad Eye Institute

Kallam Anji Reddy Campus
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World Health
Organization

Collaborating Centre for
Prevention of Blindness

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Head Start Series - 2

Fine Motor Skills

Introduction

Motor development in early childhood is crucial. Children with good vision are able to explore their environment from the very beginning. They learn to coordinate their eye and hand movements to manipulate a variety of toys and acquire self-help skills such as feeding and dressing. Children who are visually impaired need extra practice and many more opportunities to learn to use their hands. Children who do not use their hands for useful activities develop mannerisms such as flapping hands and flicking fingers on a surface.

There are two categories of motor skills — gross motor skills and fine motor skills. Gross motor skills deal with the large muscle group, such as walking, jumping, and sitting, whereas fine motor skills deal with the small muscle activities that involve efficient use of the hands and fingers.

Fine motor development and its importance in daily life

Everyday activities involve the use of fine motor skills. Fine motor development is important for independent living and involves skills such as using the tip of the finger; folding the fingers; using the thumb opposite the fingers; using the thumb and index fingers; and moving the fingers, wrist and hands in various directions. Fine motor development proceeds sequentially. The child performs an activity and proceeds further, step by step.

Fine motor activities are divided into four skills — grasp, reach, voluntary release and wrist rotation.

- I. Grasp:** Grasp is the ability to hold objects and use them for a specific purpose. Children have a reflexive grasp. When pressurized, their hands automatically close tightly. The reflexive grasp is inhibited as a baby takes more and more weight on the hand. It is replaced by a series of different holding methods which, over time, involve more thumb participation.

Types of Grasps

- **Palmer grasp:** The fingers squeeze against the palm, instead of against themselves, the thumb is not involved.
- **Whole hand grasp:** The palm and fingers do the actual holding, but the thumb is also involved.
- **Scissors grasp:** The thumb is moved sideways towards the fingers. Objects of a smaller size can be held between the thumb and the index finger, but the tips of the finger are not involved.
- **Fore finger grasp:** The thumb moves towards the underside of the index finger, but the tip of the index finger and thumb are not directly opposed or touching each other.
- **Pincer grasp:** The tip of the thumb and index finger are directly opposed and the object is held between these two fingers.
- **Mature grasp:** The finger does most of the work and the palm is used very little.

- 2 **Reaching:** Reaching is a natural progression. Children learn to reach for their choice of food and toys. Children with visual impairment do not walk early as the sighted do, because they lack the stimulation to learn to reach for objects due to the vision loss.
- 3 **Voluntary release:** A voluntary release is where the child is aware of what is being held in the hands and releases it deliberately with control.
- 4 **Wrist Rotation:** The ability to move the hand from one side to another and back. It is used when eating, drinking, cutting with scissors and opening jars. Wrist rotation is important for bilateral coordination to manipulate an object with two hands.

Motor skills milestones

By age one

Gross Motor

- Sits without support
- Crawls
- Pulls self to standing position and stands unaided
- Walks with aid
- Rolls a ball in imitation of adult

Fine Motor

- Reaches, grasps, puts objects in mouth
- Picks things up with pincer grasp (thumb and one finger)
- Transfers object from one hand to the other
- Drops and picks up toy

Between ages one and two

Gross Motor

- Walks alone
- Walks backwards
- Picks up toys from floor without falling
- Pulls toys, pushes toys
- Seats self in child size chair
- Walks up and down stairs, hand held
- Moves to music

Fine Motor

- Builds tower of three small blocks
- Puts four rings on stick
- Places five pegs in pegboard
- Turns pages two or three at a time
- Scribbles
- Turns knobs
- Throws small ball
- Paints with whole arm movement, shifts hands, makes strokes

Between ages two and three

Gross Motor

- Runs forward well
- Jumps in place with two feet together
- Stands on one foot (with aid)
- Walks on tiptoe
- Kicks a ball forward

Fine Motor

- Strings four large beads
- Turns single pages
- Snips with scissors
- Holds crayon with thumb and fingers (not fist)
- Uses one hand consistently in most activities
- Imitates circular, vertical, horizontal strokes
- Paints with some wrist action
- Makes dots, lines, circular strokes
- Rolls, pounds, squeezes, and pulls clay

Between ages three and four

Gross Motor

- Runs around obstacles
- Walks on a line
- Balances on one foot for five to ten seconds
- Hops on one foot
- Pushes, pulls, steers wheeled toys
- Rides tricycle
- Uses slide independently
- Jumps over six inch high object and lands on both feet together
- Throws ball overhead
- Catches a bouncing ball

Fine Motor

- Builds tower of nine small blocks
- Drives nails and pegs
- Copies circle
- Imitates cross
- Manipulates clay material (rolls balls, snakes, cookies)

Between ages four and five

Gross Motor

- Walks backward toe-heel
- Jumps forward 10 times without falling
- Walks up and down the stairs independently, alternating the feet
- Turns somersault

Fine Motor

- Cuts on line continuously
- Copies cross
- Copies square
- Prints some capital letters

Between ages five and six

Gross Motor

- Runs lightly on toes
- Walks on balance beam
- Can cover 2 meters hopping
- Skips on alternate feet
- Jumps rope
- Skates

Fine Motor

- Cuts out simple shapes
- Copies triangle
- Traces diamond
- Copies first name
- Prints numerals 1 to 5
- Colors within lines
- Has adult grasp of pencil
- Has left/right handedness well established
- Pastes and glues appropriately

Source: *Learning Disabilities Association of America (1999)*
www.ldonline.org

Activities to enhance fine motor skills

- Weight bearing activities such as lying on tummy and pushing up on his/her hands, rocking on hands and knees and crawling.
- Place objects which are about the size of his/her hands - the reflexive grasp will force the child to hold the object (such as rattles, foam of different textures, sizes, shapes and weights) but the hands will be more open and less fistled.
- Provide lot of dangling objects in the crib, in front of your baby's infant seat, from a hanger over the changing table. Your baby will, at first, find them by accident and respond to them reflexively. When he/she is ready for deliberate grasping, he/she will expect to find dangling objects.
- Clapping hands to stimulate the muscles of the hands and arms.
- Tactile exploration activities where two hands can work together like playing with water, sand, etc.
- Single-hand activities such as opening-closing tap, coloring, peg board games, etc.
- Two-handed activities, where one hand holds and the other manipulates, such as pouring water from one cup into another, holding the container in one hand and putting objects in the other.
- Two-handed activities, where both hands move actively such as stringing large beads, clay molding, etc.



News and Events

Fun Camp - 2008

The 'Fun Camp 2008' for children with visual impairment was held on December 2, 2008, at Jalavihar Entertainment Park, Hyderabad. The camp had 239 participants, including visually challenged children, their sighted siblings and family members.

The camp began with a one-minute silence for the victims of the Mumbai terrorist attacks, followed by the song "We shall overcome... someday" sung by the children. Several group and individual games were conducted for children with no vision, low vision and with multiple disabilities, according to their capacity. Prizes were awarded to the winners and runners-up. Among the competitions conducted were blowing and bursting balloons, sorting balls, play acting on a given theme, lemon and spoon race, and object identification. All the children who participated, including the sighted and visually challenged, received a special gift and a certificate.

The experience provided children the opportunity to enhance their independence level, peer group interaction and self-esteem. The event also created a platform for the parents to interact with one another and share their experiences.

Volunteers Mrs and Mr Akila Ravi, Mrs Shanthi Thirumalai, Mrs Neena Vergeese, Mr Shesheshia, Mrs Praveena and Mrs Sujitha Reddy helped the rehabilitation team in organizing and coordinating the activities.

Glimpses of Fun Camp - 2008



Enrol now!

Short-term Fellowship Program in Low Vision care

Duration: 3 months

Program begins on January 1, April 1, July 1 and October 1

Minimum Qualification: Diploma in Optometry or Master's degree in Ophthalmology - preferably institution-based. Registration is limited to two candidates per program

Registration fee: Indian Rupees 30,000

Low Vision Awareness Program (LAP)

Date: April 24-26, 2009

November 20-22, 2009

Eligibility: Ophthalmologists, optometrists and rehabilitation professionals

Registration Fee: Indian Rupees 2500

For further information please contact:
Vision Rehabilitation Centres

You can make a difference

Your contribution can help the Vision Rehabilitation Centres in several ways. Contributions to the Hyderabad Eye Institute and Hyderabad Eye Research Foundation are tax deductible. Donations above Rs 250 are exempt under Section 80G of the Income Tax Act 1961 for Hyderabad Eye Institute and under section 35(i) (ii) for Hyderabad Eye Research Foundation.

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