



SENSORY ACTIVITIES FOR PERSONS WITH DEAF BLINDNESS



*"Learning
Through
Senses"*



Developed by

**NATIONAL INSTITUTE FOR EMPOWERMENT OF
PERSONS WITH MULTIPLE DISABILITIES (DIVYANGJAN)**

(Dept. of Empowerment of Persons with Disabilities (Divyangjan),
Ministry of Social Justice & Empowerment, Govt. of India)

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आज़ादी का
अमृत महोत्सव

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FOREWORD

“However difficult life may seem, there is always something you can do and succeed at” - Stephen Hawking

Deaf blindness is a journey. A path less taken by some where the person's senses are heightened. They emboss a new language through touch, smell and taste. There can be a number of challenges in everyday life including communication, access to information, and mobility.

One of the ways to overcome these challenges is to engage them in sensory activities. Sensory activities can be adapted to meet the needs and interests of individuals with a wide range of abilities and disabilities, including those with deaf blindness. It provides opportunities to develop their remaining senses, foster social interaction, and promote learning.

This book very well explains the different sensory activities that can be given to people with deaf blindness. This book is an eye opener for those who think that deaf blindness limits a person's ability to succeed in life. It enlightens the readers with knowledge on the effectiveness of sensory activities in people with deaf blindness.

Place: New Delhi
Dated: 10th March, 2023


(RAJEEV SHARMA)



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Preface

Disability is a natural aspect of human diversity & people with disabilities should have the same rights, opportunities and access to resource as anyone else. It is important to recognize that disabilities can affect people in different ways and to varying degrees.

Deaf blindness can impact a person's ability to communicate, navigate their environment and engage in social interaction. People with deaf blindness may face unique challenges in accessing education, employment, and other opportunities, and it's important to ensure that they have equal access to these resources and are not excluded from participation in society.

Sensory activities can be adapted to meet the needs and interest of different individuals and can be used to promote various skills. They provide opportunities for hands on learning and exploration. It plays an important role in empowerment of people with deaf blindness as they rely on their remaining senses to access information about the world around them.

This book attempts to describe various sensory activities that can be given to people with deaf blindness. It tells us how sensory activities can be a fun and engaging way for people with deaf blindness to learn and grow, and can be used to promote creativity, curiosity, and a love of learning. On the whole this book will be very useful in empowering people with deaf blindness.

Authors

CONTENTS:

| Sl. No | Topic | Page No |
|--------|--|---------|
| 1 | Introduction: Rights of persons with disabilities act 2016 | 1 |
| 2 | Multiple Disabilities | 3 |
| 3 | Deaf Blindness | 4 |
| 4 | Role of senses in Child Development | 5 |
| 5 | Child/Person with deaf blindness – Challenges faced | 8 |
| 6 | Real life application ,Occupational therapy contribution | 9 |
| 7 | Sensory Integration in child/person with deaf blindness, Sensory Integration | 11 |
| 8 | Sensory Activities | 12 - 42 |
| 9 | References | 43 |

Introduction:

Rights of Persons with Disabilities Act 2016:

The passage of the Rights of Persons with Disabilities Act 2016 has provided a new paradigm shift when working with clients with Disability. The Rights of Persons with Disabilities (RPWD) Act, 2016. This act promotes and protects the rights and dignity of people with disabilities in various aspects of life – educational, social, legal, economic, cultural and political. It applies to government, non-government and private organizations. It has mandates and timelines for establishments to ensure accessibility of infrastructure and services. It has implementing mechanisms like Disability Commissioner's Offices at the Centre and State level, District Committees, Boards and Committees for planning and monitoring the implementation of the Act, Special Courts at District level and so on. It has penalties in case of violation of any provisions of the Act. The RPwD Act, 2016 was enacted on 28.12.2016 which came into force from 19.04.2017. It lays down the following principles for empowerment of persons with disabilities:

- (a) Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons
- (b) Non-discrimination
- (c) Full and effective participation and inclusion in society
- (d) Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity
- (e) Equality of opportunity
- (f) Accessibility

(g) Equality between men and women

(h) Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities;

The Act covers the following specified disabilities:

1. Physical Disability
 - a. Locomotor Disability
 - i. Leprosy Cured Person
 - ii. Cerebral Palsy
 - iii. Dwarfism
 - iv. Muscular Dystrophy
 - v. Acid Attack Victims
 - b. Visual Impairment
 - i. Blindness
 - ii. Low Vision
 - c. Hearing Impairment
 - i. Deaf
 - ii. Hard of Hearing
 - d. Speech and Language Disability
2. Intellectual Disability
 - a. Specific Learning Disabilities
 - b. Autism Spectrum Disorder
3. Mental Behaviour (Mental Illness)

4. Disability caused due to-
 - a. Chronic Neurological Conditions such as-
 - i. Multiple Sclerosis
 - ii. Parkinson's Disease
 - b. Blood Disorder-
 - i. Haemophilia
 - ii. Thalassemia
 - iii. Sickle Cell Disease
5. Multiple Disabilities

Multiple Disabilities:

A child who has more than one disability is considered to have multiple disabilities. Multiple disabilities can be viewed as a child having disability in different combinations. Few examples include intellectual disability and blindness or intellectual disability and orthopedic impairment, or Autism and cerebral palsy. The ability levels of children with multiple disabilities can vary widely, ranging from functional academics to basic life skills, however, they are quite able capable of learning when provided with appropriate materials and support. The effect of multiple disabilities can be more than the combination of two individual disabilities. A detailed evaluation would be needed, including the nature and extent of the child's disabilities. The child/person may show slow progress and will have difficulty in generalizing the concepts which they have learnt. Because children/persons with multiple disabilities have problems with all muscle movement, with understanding and often with seeing and hearing as well, communication is very difficult for them & at times challenging to make child learn new skill.

Some examples of multiple disabilities are:

- Deaf blind (Visual Impairment + Hearing Impairment)
- Visual Impairment + Hearing Impairment + Intellectual Disability
- Visual Impairment + Intellectual Disability
- Cerebral Palsy + Intellectual Disability / Hearing/ Speech/ Visual problems

Deaf blindness:

Deaf blindness is the combination of auditory and visual impairments in a person. These dual sensory losses may vary in severity from one person to another and do not always necessarily lead to total deafness and/or total blindness. In combination, these impairments of the distant senses cause serious developmental delays in the child, affecting cognitive development, social development, acquisition of communication and language skills, orientation and mobility.

World Health Organization (WHO) classifies deafness into four categories: mild, moderate, severe and profound hearing loss.

- Mild hearing loss of 26 to 40 decibel (dB)(a child will have trouble hearing and understanding soft speech or sound coming from a distance with or without background noise)
- Moderate hearing loss of 41 to 60 dB (Child will have trouble hearing and understanding conversation level at close distance)
- Severe hearing loss of 61 to 80 dB (Child will hear only very loud speech or loud environmental sounds, *i.e.*, sirens of fire engines or doors slamming)
- Profound hearing loss of more than 81 dB (Child will perceive only loud sounds as vibrations).

WHO defines blindness by including visual acuity and excludes field of vision. Better corrected visual acuity (BCVA) better than 3/60, but less than 6/60 in the better eye, and field of vision of ≤ 10 degree in the better eye is graded as blindness

In India, WHO grades this as low vision. In India, low vision is defined as BCVA better than 6/60, but less than 6/18 in better eye

Role of senses in child development:

Our senses play a very vital role in our development. Seven senses including proprioception, Vestibular, hearing, smell, taste, tactile, and vision are crucial for survival & for the development of adaptive skills. The ability to respond to senses develops very early in a child. During pregnancy, many mothers find that the baby may kick or jump in response to loud noises and may become quiet with soft, soothing music. Hearing is fully developed in newborns. Touch can calm & provide comfort to a baby. This is evident when placing a hand on a child's belly or holding them close to the body, which helps him or her feel more secure. An unborn baby can actually see inside the womb. Their vision is rather blurry, but they sometimes respond to bright sources of light like the flashlight pointed at a mother's belly. The above scenarios emphasize the importance of different senses that are helping in development at a very early age even before birth of a child.

Sensory development refers to the maturing of the seven senses: Proprioception, Vestibular, hearing, smell, taste, tactile, and vision. It also involves the way a child's nervous system receives input from various senses and then forms an appropriate motor or behavioral response. It means the child is able to receive sensory information,

process it & respond accordingly without help from others. This function is important for survival as we are all living in a sensory world.

Learning through senses:

A child learns how to respond in the right way to a sensory stimulus. For instance, a child hears a sound & may turn his/her head to attend to the source; a child puts an object in mouth, to identify whether it is edible or not. This learning helps the child to make the correct responses to sensory input. For example, a child may touch a hot object & learn from the experience to avoid the same object in future; identify if a mother/father is angry by hearing the tone of voice while they talk. He may also avoid certain places or objects based on the recognition of an unpleasant smell. Similarly, as a child learns to walk, he/she uses vision to look around the room in order to identify different obstacles. This helps the child to navigate without bumping into things. In order to respond to a person talking or asking a question, the child has to listen to the voice and respond accordingly. The child should thus develop an array of skills which help in everyday functioning. A few such skills include figure ground perception (identifying objects in foreground & background), auditory localization (ability to identify the location or origin of a detected sound in direction and distance), and identifying facial expressions for everyday adaptive functioning.

Proprioception is the processing of sensations that are received from muscles and joints of our body. It allows a person to be aware of where each part of our body is and how it is moving. E.g. when we close our eyes and move our arm, we know exactly where our arm is in

relation to our body without having to look. This helps us to perform everyday tasks like dressing, without having to totally rely on our vision. Proprioceptive feedback helps our body organize itself for useful activity.

Vestibular system is responsible for perception of our body in relation to gravity, movement and balance. The vestibular system measures the speed at which we move body movements and head position. Vestibular system helps to know when a person is moving when in an elevator, knowing whether you are lying down or sat up, and being able to walk along a balance beam. This system helps a person in moving inside or outside home, proper positioning of body without falling etc.

Hearing is our ability to perceive the sound by detecting vibrations and changes in the pressure of the surrounding medium through time. Auditory processing relies on how the brain is able to interpret, recognizes and differentiates the various sound stimuli. This sense is very vital for communicating with others & thereby improving interpersonal relationships.

Smell or olfactory sense guides our food choices. The sense of smell is also useful to detect warning messages if food is spoiled or identify food is getting burnt while cooking.

Gustation, better known as taste, is an important special sensation that has a greater impact on diet. A child during earlier stages of development is able to put thing in mouth & identify whether they are nutritious or not edible. The sensation is commonly called taste, is a combination of both smell and taste.

We are able to identify our own body parts as well as objects coming into contact with our body through somatosensory receptors which are present on the surface of skin and deep tissues. The tactile senses are important to identify touch, pressure, pain, temperature and also texture.

Vision helps a person to look at things & learn (Visual learning), this skill is essential for learning ADL (Dressing, Eating etc.). Through vision we are able to avoid obstacles while navigating inside home/environment.

Child/person with Deaf blindness – Challenges faced:

When a child/person has Deaf blindness, the amount of sensory information which the child receives is compromised. This makes it very challenging. Gross motor movement like walking might be difficult, as vision is needed to maintain balance while walking. The child has to rely on other senses like touch to navigate the room or the surroundings. During walking, the child may take very few steps because of fear of bumping into objects or he might walk around the room with his hand extended to avoid getting hit by objects. His movements may be slow.

Identifying cues from another person's facial expression is compromised which makes adapting to the environment even more challenging. Children with Deaf blindness are also at higher risk for significant delay in development.

The world of a child with Deaf blindness is limited to what information the child can gather from other senses, particularly touch, and also from any available vision or hearing. Events like another person approaching or a change in daily routine are normally signaled by sounds and vision. The child or adult who is not able to register these

cues because of limited vision and/or hearing may experience the world as unpredictable, and also view it as possibly a threatening place.

Learning to communicate is perhaps the greatest obstacle faced by children with Deaf blindness. Deaf blindness has a significant impact on a person's ability to access various information around him/her and to interact with other people. Such a child's concepts of the world depend upon what or whom they have had the opportunity to physically touch. The more severe a child's impairment is, the narrower the environment from which they can learn and the more important the sense of touch. Behavioral and emotional difficulties usually accompany Deaf blindness and are the natural outcomes of the child's or adult's inability to understand and communicate.

Teaching the child/person to communicate using sign language & use to use Braille will help the individual to learn as well as to communicate.

Real life application:

Our abilities to see and to hear, act complementary to each other. The combination of hearing and vision dysfunction results in a unique condition that is more disabling. Many a times, a person is able to recognize a familiar place by recognizing changes in temperature (when you travel closer to the beach, you feel the cool wind), hearing certain sounds (train sound when traveling towards railway station), smelling certain odors (when you reach near a tannery), vestibular changes (when traveling a bumpy road or bridge). In the above scenarios, a person might not necessarily see the place but the other senses are helping the person in identifying the place. Thus, a person can be trained to

extensively use the other senses to compensate for the lost or diminished senses. It helps in improving the independency of the person.

Occupational Therapy contribution:

Occupational therapy aims at reducing the impact of disability by promoting maximal independence and participation in valued activities. An occupational therapy practitioner might restructure a task/activity to remove a vision-dependent step, such as making changes in a mobile phone to speed dial emergency numbers or call through voice activation. The occupational therapist also carefully evaluates the environment where the person does the activities to determine those things that facilitate or inhibit participation, promote safety and independence, then provides recommendations and modifications. The therapist also provides training for people who have vision/ hearing impairment to navigate around their home and local community using a sighted guide or a cane.

Vision and hearing impairment is also known as dual sensory loss. The person/child with this experiences decreased social participation and difficulties in their activities of daily living (ADL) and instrumental ADL; namely, dressing, meal preparation, shopping, moving around, using the phone, and managing their medications. A child with vision/ hearing impairment experiences various sensory processing difficulties. In children, vision/ hearing impairment causes overall developmental delay affecting cognition, speech, language, motor and social delay. If the visual input is poor, motor development is likely to lag, and learning social body language and gestures also becomes difficult. Early

Intervention services for children who have vision/ hearing impairment maximize the potential for their growth and overall development.

Sensory integration in Child/person with Deaf blindness:

Children/Person with Deaf blindness most commonly encounter sensory integration dysfunctions like

- 1) Seeking sensory behavior like biting self, rocking, bouncing, hand flapping, light gazing.
- 2) Sensory defensive behavior like withdrawing from touching soft textures, turning eyes away from light.
- 3) Abnormally low or high pain thresholds like rejecting certain sensory inputs as if they are painful, never crying or seeming to hurt when falling down.
- 4) Inconsistency in sensory perception abilities, like rejecting all textures in mouth apart from smashed food.
- 5) Maintaining unusual postures like needing regular periods of being in horizontal or upside down position.
- 6) Problems with regulating arousal level like being too drowsy or too excited.

Sensory Integration:

Sensory Integration (SI) is the ability to assimilate sensory information from the body and environment for use (Ayres 1979, 2005). Dysfunction occurs when a child (or adult) with an intact nervous system has difficulty processing some of the sensory input. Dysfunction or misinterpretation of sensory information interferes with a child's daily activities or development. Each of our senses requires a “Just Right Balance” in order for a person to function optimally. Providing varied,

guided sensory input, in order to meet sensory needs, and facilitate better functioning of the child. Research has shown that sensory input decreases behaviors like uncontrollable agitation and improves sleep.

Sensory integration therapy is used to help children learn to use all their senses together. Therapy can improve challenging behavior or repetitive behavior. These behaviors can be related to the difficulties with the processing of sensory information. Sensory reactivity is related to the development in the occupational areas. It was shown in study that problems in taking visual, tactile and proprioceptive inputs and integrating them in an appropriate way lead to deficiencies in activities of daily living. (Elbasan et al,2012) The Occupational performance of a person, and therefore his performance in Activities of Daily Living (ADL), is affected when that person presents an alteration of sensory processing. Sensory problems among children with developmental disabilities have an influence on their occupational areas. Therapy of sensory integration, provided with occupational therapists, was effective at improving functional and social skills and self-care. (Chang et al, 2012).

Sensory activities:

1) Name of the Activity: Textured blanket

Why this activity is needed: This activity provides a sense of balance, spatial orientation (vestibular), sense of self - movement and body position (proprioception) stimulation. Gradual exposure to touch input will help reduce the child's sensitivity towards touch.

Materials required: Blanket, clothes with different textures- 1 foot x 1 foot.

Preparation: Stitch the different textured cloth pieces over the blanket.

Procedure:

Lying down:

- If the child is able to crawl, make the child lie down on the abdomen.
- Keep any sound/light toys or object in front of the child.
- Encourage the child to move around the blanket by providing touch & guiding the child.
- Make the child pick up/touch the toy.

Sitting:

- For older children who are able to sit independently, give activities in sitting.
- Place sound/light toys on the mat & make the child pick it up.
- The child will be touching the different textured cloth while picking up toys.

Standing:

- For children who can stand independently.
- Make the child stand on the mat.
- Place sound/light toys on the blanket & guide the child to pick it by bending down.

Tips for parents/caregiver: If a child starts crying excessively when placed on the mat, it could be because the child is unable to tolerate the textures. For such children make them lie on surfaces which are tolerated better before placing him/her on other textured surfaces.

Children who can sit & stand can be guided to pick toys from textures which they tolerate & gradually from other textures.

How this activity is beneficial in the long term: In real life situations once the child/person learns how to discriminate texture, it might help in identifying inside & outside of a shirt, differentiate inner garment from shirt, etc.

This activity helps a child/person develop memory for navigation. The child /person has to remember how much he/she has to move to come into contact with an object; example how many steps he/she has to take before reaching an obstacle.



Fig1: Child lying on a textured blanket

2) **Name of the Activity:** Sensory shirt

Why this activity is needed: This activity provides touch (tactile) stimulation to the child. The ability of the child to perceive and recognize the form of an object in the absence of visual and auditory information, by using tactile information (stereognosis) improves when using this activity.

Materials required: Apron, different textured objects

Preparation: Loops can be stitched on the shirt and different textured objects can be attached on the shirt using the loops. The objects are to be attached on the front side.

Procedure: Let the child wear the shirt for about 15 to 20 minutes. Make the child explore the different objects. Parent /caregiver can guide the child's hand towards the object.

To grade up the activity, the child can be asked to touch the object & can later be asked to tell if the texture of the object was smooth or rough. Children who have good understanding can be asked to recall the name of the object.

Tips for parents/caregiver: Initially the objects can be of textures which the child can tolerate, later those objects which the child avoids touching can be gradually introduced. New objects with different textures can be introduced regularly.

How this activity is beneficial in the long term: Child/person can identify a door knob, switch by touching & recognizing the object. The person will learn how much pressure to use while handling different objects like cane or currency notes. They will learn to identify between various cloth textures& to decide which one is appropriate for the current weather.

3) **Name of the Activity:** Weighted blankets

Why this activity is needed: This activity provides joint position sense (Proprioception) stimulation to the child/person.

Materials required: Blanket

Preparation: Pockets at equal distance can be stitched on the blanket & filled with sand/heavy beads. The opening of the pockets is to be closed to avoid spilling of the materials.

Procedure: The child is made to sit comfortably in a long-legged position. The blanket is wrapped over the child. This activity can be given to children for duration of 5 to 7 minutes & the time can be gradually increased.

Wrap the blanket in a slow manner so that the child is able to enjoy the activity rather than feel threatened.

Tips for parents/caregiver: Gently hold the child's hand to reassure the child, if he/she appears uncomfortable in a blanket. Unwrap the blanket if the child continues to cry or shows any sign of discomfort. Remember not to force the child.

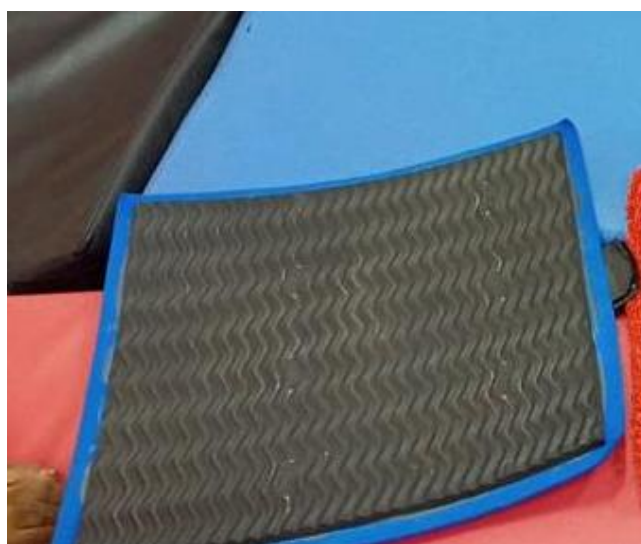


Fig2 : Picture of weighted blanket

How this activity is beneficial in the long term: The child/person knows about body boundaries, which helps in judging how much he/she has to extend their hand to reach for objects. When sitting on a chair, it

helps the person to reach for objects kept in front or back, and to remember the distance each object is kept from the body. When eating, the person decides how much distance he/she has to move the hand to reach for different food items placed on the plate (use clock reference system i.e. place vegetable at 12 o' clock position, rice at 6 o' clock position).

4) **Name of the Activity:** Tactile matching game

Why this activity is needed: This activity provides tactile (touch) stimulation and recognition.

Materials required: A large cloth 2x2 feet, 4 pairs of different textured cloth 10cm x10cm.

Preparation: Stitch or place the textured cloth over the large cloth in 2 rows. It has to be placed in such a way that two matching textured clothes are present in each row.

Procedure: This activity can be given as a game to a child with good understanding. First, the child is asked to touch only one textured cloth in the top row. Then he/she has to touch all clothes in the bottom row & has to identify the texture similar to cloth in the top row.

To make the activity even more enjoyable for the children, 2 or more children can be made to play this game together.

Tips for parents/caregiver: Initially select clothes which have gross difference in texture. This will increase the success rate of the child during each attempt & thus make the activity rewarding to the child.



Fig 3: Child playing tactile matching game

How this activity is beneficial in the long term: The child/person can identify which is the top end of pen, bottle, comb, and brush by recognizing the texture. While reading Braille, the person can identify when the paper ends. The person can identify buttons on a lift, phone etc. based on identifying the difference between the textures.

5) **Name of the Activity:** Know the smell

Why this activity is needed: This activity provides touch (tactile) & smell (olfactory) stimulation.

Materials required: Chart/white paper, gum with pleasant smell, paint

Preparation: Draw a large size picture & apply thick paint on the borders.

Procedure: Apply gum on the inside of the picture holding the child's hand. Use materials like cardamom, cinnamon & paste it inside. While doing this activity, it facilitates the child to smell the materials.

Tips for parents/caregiver: Initially use pleasant smelled materials for sticking inside the picture. Later introduce other types of smells e.g. citrus smell, fruity smell. Avoid strong smells when starting the activity.



Fig4: Child exploring smell of object

How this activity is beneficial in the long term: The person can identify if there is leakage of cooking gas, things getting burnt or spoilt food items. While navigation, the person can associate certain smells with places which helps in confirming if he/she has reached the place. The person can identify if their clothes need to be washed or room needs cleaning by judging the smell.

6) Name of the Activity: Taste & know

Why this activity is needed: This activity provides taste (gustatory) stimulation to the child.

Materials required: Sugar, salt, lime, drinking water

Preparation: Have 3 small bowls of water; mix the ingredients in each of the bowls. Make the solution with less concentration.

Procedure: Wash the child's hand with soap and water. Make the child dip fingertips in the bowls & taste the water.

Tips for parents/caregiver: Initially, let the child explore sweet & salt taste. Later introduce tastes like sour & bitter. Increase or decrease the concentration of the solution gradually. This will enable child to tolerate the tastes in a graded manner.



Fig 4:Tasting different edible food

How this activity is beneficial in the long term: By putting objects in mouth the child can identify if the item is edible or not. By tasting a sample of food the person knows if food is too spicy & to be avoided. The person can also identify if a food item has been under or over cooked, by taste & texture. The child/person develops preference to certain food based on the taste, they can also identify if salt and sugar are of appropriate quantity in the food item.

7) Name of the Activity: Rock a bye baby

Why this activity is needed: This activity provides a sense of balance and spatial orientation (vestibular) stimulation, which will have a calming effect on the child.

Materials required: Small sized therapy ball, bed

Preparation: Place the bed on the floor; keep the therapy ball at the center of the bed.

Procedure: Parents/caregivers have to kneel down & hold the child from behind as shown in the picture below. Hold the child at chest level & make him/her to lie down on abdomen over the therapy ball. Gently rock the ball in forward & backward, side to side movements, holding the child firmly.

Tips for parents/caregiver: Do the rocking movement gently. This activity is not to be done immediately after the child has had a meal. Carefully observe the child to avoid over stimulation.



Fig 5 : Providing vestibular stimulation using therapy ball

How this activity is beneficial in the long term: The child/person will be able to tolerate head movement while bending down and coming up to stand from sitting. The person can balance while walking on uneven surfaces, inclined surfaces (ramps). They will also tolerate body & head movements while travelling in bus, train etc.

8) **Name of the Activity:** Bursting bubbles

Why this activity is needed: This activity provides touch (tactile), movement & position sense (proprioceptive) stimulation to the child.

Materials required: Bubble wrap, picture of any vegetable.

Preparation: Cut the outline of the vegetable, apply glue over it & stick the bubble wrap.

Procedure: Hold the child's hand & place it over the picture. Guide the child to press & burst the bubbles one by one in the wrap. To grade up the activity, gradually increase the size of the bubble wrap.

Tips for parents/caregiver: Initially, use larger sized pictures covered with bubble wrap, as this will be easier for the child to burst.

How this activity is beneficial in the long term: The child /person can tolerate holding different objects in hand like spoon, fork etc. While typing in a laptop the person can know how much pressure he/she has to provide or how much to squeeze a toothpaste while brushing. The person can open/close a lock, latch by the help of touch sense alone.

9) **Name of the Activity:** Learn the difference

Why this activity is needed: This activity helps the child to learn the temperature difference between objects (temperature discrimination).

Materials required: 2 bowls, warm & cold water

Preparation: Place warm & cold water in each bowl.

Procedure: Initially, check whether the temperature of water is within tolerable range for the child. Hold the child's hand & gently dip it in warm water. Wipe off the excess water, after 10-15 seconds dip the child's hand in cold water.

Tips for parents/caregiver: Continue the activity for 4-5 repetitions. Avoid keeping the child's hand in water for more than a minute. If the child has fever or cold, avoid this activity.

How this activity is beneficial in the long term: The child/person can identify hot food items by touching the container, and avoid getting very close to fire. He can identify if the room is very cold or very hot based on the temperature. While taking a bath, he is able to identify if water is too hot or warm & adjust accordingly.

10) **Name of the Activity:** Pleasant smelling dough

Why this activity is needed: This activity provides touch (tactile), smell (olfactory) and movement & position sense (proprioceptive) input.

Materials required: Flour dough, vanilla essence.

Preparation: Mix the flour dough with a few drops of vanilla essence

Procedure: The scented dough is given to the child & encouraged to make small balls using his/her fingers. The parent/caregiver can provide physical assistance when required.

During the activity the child is encouraged to smell the dough & identify the familiar fragrance. Simple objects can be made using the dough & child made to feel the shapes.

Tips for parents/caregiver: Ensure that the child doesn't mouth the dough. Use different fragrances. Smells like citrus can make the child alert.



Fig 6: Child playing with pleasant smelling dough

How this activity is beneficial in the long term: The person can differentiate between washed /unwashed clothes based on the smell; identify items like powder, deodorant, and can figure out if fruits are ripe. He can also identify certain rooms at home based on smell e.g. kitchen, bedroom. This ability also helps avoid rooms which are very dusty.

11) **Name of the Activity:** Sorting box

Why this activity is needed: This activity provides touch (tactile) stimulation & the child learns object recognition. The shapes can have raised letters for tactile recognition.

Materials required: Shape sorter box, different shapes

Preparation: Place the shape sorter box & different shapes on a table.

Procedure: The parent/caregiver holds the child's hand & makes the child pick up the objects one by one in the right hand. By using the left hand, encourage the child to feel the shape sorter box & find the matching shape in the lid. Once the child identifies the exact shape in the sorter, he/she has to drop the shape inside it. The outside of the shapes can be covered with different textures from smooth to rough.

Tips for parents/caregiver: The child can be given positive reinforcement, every time he/she drops the shape correctly in the sorter.



Fig 7: Play with shapes

How this activity is beneficial in the long term: The person can identify food items based on shapes, can take objects from pocket, hand bag etc. He can identify different utensils, common objects in the house by touch recognition. When the person is going to sit on a chair, through touch can identify where the cushion is placed & can adjust accordingly.

12) **Name of the Activity:** Gardening sensory bin

Materials required: Sand, small shovel, plants and water in a jug

Preparation: Dig a hole in the ground for about 1 foot in depth & then cover it with sand.

Procedure: Make the child dig a hole in the sand using a shovel. Give a plant in the child's hand & make the child plant it.

After planting, let the child water it. This activity provides touch (tactile), smell (olfactory) and position sense (proprioceptive) input to the child. A pot can be used if the facility of planting in the ground is unavailable.

Tips for parents/caregiver: Teach children how to delicately hold the plant, a daily routine can be established for the child to water the plant at a fixed time.

The child can be made to feel, smell the plant every day. If a flower blooms, it can be rewarding to the child. Let him/her feel or smell the flower.



Fig 8: Exploring by Touch

How this activity is beneficial in the long term: The person can identify if a surface is smooth/rough, can make out if a surface is dusty and needs cleaning by touch. Repeated movements in a familiar environment will help the child to be confident in moving around & managing obstacles. The child can tolerate playing with sand & it helps reduce sensitivity. The person can identify the source of pleasant smells.

13) **Name of the Activity:** Rainbow

Materials required: Bright colored, light emitting toys

Preparation: Place the lights on the floor

Procedure: This activity can be given for a child with low vision. The child is made to sit comfortably & toys with bright light are placed in front of the child.

The toy is switched on to emit light & the child is guided to pick up the toy. Gradually, the same is followed for other toys.

For children who have mild to moderate hearing impairment present sound producing toys, and help them to pick toys using sound as a guide.

This activity provides vision (visual) & hearing (auditory) stimulation to the child. Auditory localization (ability to identify the position and changes in position of sound sources based on sound information) of the child improves.

Tips for parents/caregiver: Engage the child in activity for about 5-6 minutes. Give adequate rest to the child between activities. Don't present too many light emitting toys or sound producing toys to the child as it might provide too much stimulation.



Fig 9: Play with light emitting toys

How this activity is beneficial in the long term: Child with low vision learns how to navigate in a room by using a light source, he can identify and use light emitting objects on closer inspection like mobile, torch etc. A person with mild to moderate impairment in hearing can identify from which direction another person is talking, he can also avoid going too close to other individuals by judging the distance based on sound source.

14) **Name of the Activity:** Vibration sense (pallesthesia)

Materials required: Battery operated massager

Preparation: Make the child sit in a comfortable position.

Procedure: By using the massager, gently massage the child's hands, legs & joints.

Avoid massaging areas like the face abdomen. Use a massager to provide vibratory sense to finger joints and major joints. This activity provides vibratory stimulation.

Tips for parents/caregiver: The massaging can be done for 8 to 10 minutes.



Fig 10: Picture of Massager

How this activity is beneficial in the long term: The child/person will be able to tolerate vibrations when travelling in a bus/car and can tolerate wearing tight & heavy garments. The person will be able to make gross movements more confidently. The child can tolerate touch by parents & caregivers. Some individuals can identify a person by remembering the touch, through practice.

15) Name of the Activity: Garden montage

Materials required: Chart paper /A4 sheet paper, natural materials like grass, leaves, flowers, stem & gum.

Preparation: Draw a garden themed picture on the chart/paper & apply gum over the picture.

Procedure: With assistance, the child is made to collect materials like grass and leaves. After collecting the materials, hold the child's hand & let him pick them and place it on the picture. The theme can be written with raised letter for the child to feel.

This activity provides tactile (touch), olfactory (smell), position & movement sense (proprioceptive) stimulation to the child.

Tips for parents/caregiver: Make child touch & feel the finished montage. Montages with other themes of home, school, etc. can also be prepared.



Fig 11: Montage activity to provide touch & olfactory sense

How this activity is beneficial in the long term: The child is able to identify natural materials like flowers, stem and leaves and can identify flowers based on the difference in smell. When the child learns to tolerate using gum, it can help the child to tolerate different consistencies of food while eating.

16) **Name of the Activity:** My puzzle box

Materials required: Box, 5 to 6 objects familiar to child; e.g. animal figure toys.

Preparation: Place the objects in the box.

Procedure: Ask the child to pick and name an object from the box. If the child is successful in naming, make him/her repeat the activity. This activity provides touch (tactile) stimulation. It improves the ability to perceive and recognize the form of an object in the absence of visual and auditory information, by only using tactile information (stereognosis).

Tips for parents/caregiver: When activity is introduced to the child, start with a single category e.g. animals, vehicles. Later, when the child learns to name all the objects through touch, introduce more new objects.

How this activity is beneficial in the long term: It helps the child /person to identify objects inside the bag based on touch. The person can identify sharp objects from blunt ones based on touch. The hand functions become better when the child manipulates various small objects.

17) **Name of the activity:** Sensory snow ball

Materials required: Cloth bag, fine sand

Preparation: Fill the cloth bag with sand & make it into a ball. Tie the cloth ends to avoid spilling of sand.

Procedure: Give the sand filled cloth (ball shaped) to the child & encourage the child to press it using fingers & palm. A bigger ball can be made to facilitate the child holding it with both hands. This activity can also be done as a group; children can be seated in a circle & asked to pass the ball. The weight of the ball can be gradually increased or decreased. This activity provides touch (tactile), position & movement sense (proprioceptive) stimulation to the child.

Tips for parents/caregiver: It has to be ensured that the child doesn't place the object in mouth. Once a child is able to tolerate sand filled cloth bags, other materials like beads or coarse sand can be used as fillers.



Fig 12: Exploring objects of different texture

How this activity is beneficial in the long term: The child starts to tolerate the touch of other children when engaging in group activity, and can also tolerate sitting next to other children. The person can tolerate lifting, carrying heavy objects, and can tolerate movements of the body as a whole.

18) **Name of the activity:** Stackable sound blocks

Materials required: Small sized sound producing toy, bigger hollow blocks

Preparation: Place the sound making toy in the hollow blocks & close it.

Procedure: Let the child pick up the block using the sound. Older children can be taught to stack one block over another to form a tower. This activity provides touch (tactile), position & movement sense (proprioceptive) stimulation to the child.

Tips for parents/caregiver: If a child has difficulty stacking blocks to form towers, initially the child can be made to play with the blocks.

How this activity is beneficial in the long term: The child learns to judge distance based on sounds. He can avoid sound producing objects during navigation or move head in the direction of sound source. The person can tolerate movements of upper limbs which can help in reaching for objects & manipulating objects in hand.

19) **Name of the activity:** Water balloon

Materials required: balloon, water in a cup

Preparation: Fill the balloon with water & tie the balloon

Procedure: Let the child play with the water filled balloon. The child can be asked to toss and catch the balloon with physical assistance from parent/caregiver. Bursting the balloon while it is in the child's hand might be enjoyable for children. This activity provides tactile (touch), position & movement sense (proprioception) stimulation to the child.

Tips for parents/caregiver: Let the child play with balloons & water for about 5 – 6 minutes. Carefully discard the burst pieces of balloon to avoid the child putting it into mouth.

How this activity is beneficial in the long term: The child tolerates touching various objects. The child is able to tolerate loud sounds like the bursting of balloons. The child may tolerate being touched by other children while playing. The grip strength of the child improves.

20) **Name of the activity:** Sand play

Materials required: Small tub, sand, objects like brush, comb, and toys

Preparation: Fill the small tub with sand.

Procedure: Place familiar objects in the sand filled tub. Guide the child to find objects placed inside. This activity provides touch (tactile), position & movement sense (proprioceptive) stimulation to the child.

Tips for parents/caregiver: Smaller sized toys can be placed to make the play more challenging. Make sure the child washes his hand after the play activity.

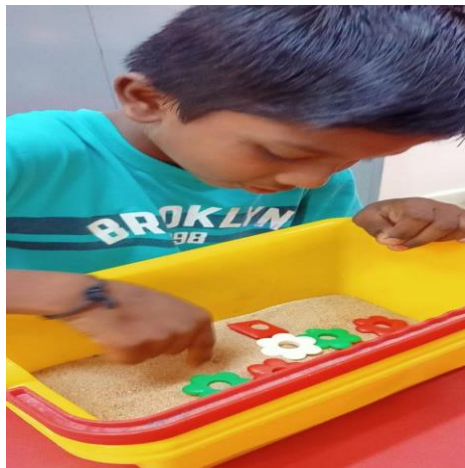


Fig 13: Finding objects by touch & vision

How this activity is beneficial in the long term: The child is able to identify objects based on touch. The child tolerates touching various textured objects, it can also help the child in mixing food.

21) **Name of the activity:** Brush my skin

Materials required: Brush with soft bristles

Preparation: Make the child sit in a comfortable position.

Procedure: Place the brush in child's hand & the parent/caregiver guides child hand in brushing over hand & legs. Guide the child to brush very softly.

When doing this activity, since the child is holding the brush, it will give the child a sense of control. Child might like being brushed on the scalp. Avoid brushing areas like face & abdomen. This activity provides touch (tactile) stimulation to the child.

Tips for parents/caregiver: Care has to be taken by parent/caregiver not to brush very rigorously.



Fig 14: Therapist proving tactile sense to child

How this activity is beneficial in the long term: The child develops good control over movements. The person can tolerate wearing garments with both soft & hard textures, can tolerate using creams, oil etc.

22) **Name of the activity:** Hang from a trapeze bar.

Materials required: Trapeze bar, bed.

Preparation: Hang the trapeze bar at a height where the child can grab on to it. Place the bed below the trapeze bar.

Procedure: Let the child stand holding on to the trapeze bar. Slowly make the child do short jumps holding it. Gradually make the child hold

on the trapeze bar & swing. Make sure the parent/caregiver holds the child at hip level when the child is swinging. Place the bed under the child while swinging to cushion falls. This activity provides touch (tactile), position & movement sense (proprioceptive) input to the child.

Tips for parents/caregiver: This activity can be given for children above 10 years of age. Avoid making the child hang or swing in the bar for a longer duration as it might cause injury. Engage in swinging for 1 to 2 minutes.



Fig 15: Hanging for Bar

How this activity is beneficial in the long term: The child's upper limb strength and balance improves, and he is able to tolerate various movements of the head. During movements of the whole body the person can tolerate a variety of movements.

23) **Name of the activity:** Sound ball game

Materials required: Ball, small bells

Preparation: Take a ball & fill it with small bells.

Procedure: This activity can be given as a group game for more than 3 children who have mild to moderate hearing ability. The children are asked to sit in a group. Parents can sit behind each child & guide the

child for holding & passing the ball. This activity provides position & movement sense (proprioceptive), auditory & touch (tactile) stimulation.

Tips for parents/caregiver: Ensure the environment is noise free while giving this activity for children.

How this activity is beneficial in the long term: The person tolerates hearing loud sounds and learns to judge distance of objects listening to the sound. A child with only vision loss is able to maintain proximity when engaging in conversation with others.

24) **Name of the activity:** Walk in the park

Materials required: No materials required

Preparation: Take the child for a walk; hold the child's hand gently during the activity.

Procedure: Encourage the child explore the environment by touching various objects like plants or smelling flowers. Let the child walk barefoot on sand to experience the sensation. This activity provides touch (tactile), position & movement sense (proprioceptive) input to the child.

Tips for parents/caregiver: Ensure to provide physical guidance to children during the walk. Make the experience pleasant to the child.

How this activity is beneficial in the long term: The child tolerates walking on sand with bare feet. The child is able to walk with improved balance in an outdoor environment. The person learns to tolerate it if the environment is noisy.

25) **Name of the Activity:** Who am I?

Materials required: No materials required

Preparation: Make a child sit comfortably in a place.

Procedure: Parent /caregiver can sit opposite to the child. Hold the child's hand & make the child touch the face of the person sitting opposite. This activity enables a child to identify & recognize the face of others by touch.

Tips for parents/caregiver: The person whose face is felt by the child has to close their eyes.



Fig 16: Tactile sense input to child's face

How this activity is beneficial in the long term: The person recognizes human faces by touch & tolerates if others touch his/her face. The reduction in sensitivity helps in daily activities like applying powder/cream on the face.

26) **Name of the activity:** Tactile shape cards

Materials required: Chart or cardboard with shaped cut in it (Triangle, Square, and Rectangle)

Preparation: Make the child touch and feel the pre-cut out shape.

Let child identify it.

Procedure: Encourage the child to explore using different texture materials.

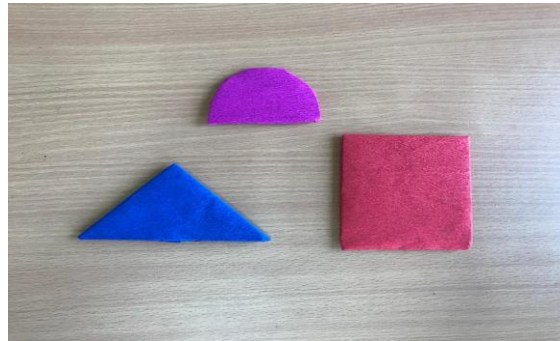


Fig 17: Tactile shape cards

Tips for parents/caregiver: Initially if child is learning shapes, start with single shape then after learning occurs introduce other shapes.

How this activity is beneficial in the long term: Once child learns the shapes, introduce common objects with similar shapes. Child/person can use the shape & texture in long run to identify common objects. This activity can be graded up to teach person to identify currency notes by touch & size recognition.

27) **Name of the activity:** Two-point discrimination

Materials required: 2 cotton buds

Preparation: Make the child to sit comfortable in a chair and to rest both hands on a table.

Procedure: Start by touching the child hands at two places approximately 10 mm apart; the child/person has to identify which two places has been touched in his/her hand. Gradually keep decreasing the distance between the cotton buds.

Tips for parents/caregiver: Initially start with one cotton bud (Touch localization) and let child person identify it. Then introduce two cotton buds.

How this activity is beneficial in the long term: The child/person will be able to recognize the objects touching closer (2-point discrimination) with practice.

28) **Name of the activity:** Tactile fun bucket

Materials required: Small plastic bucket, Variety of objects with different weight, textures.

Preparation: Put all the objects in the bucket. Ask the child to put hand inside & take soft object without seeing. Continue this activity by instructing the child to show objects whose weight or texture specification is asked.

Procedure: Facilitate the child to put both hand inside bucket and feel all objects. This activity provides touch (tactile), position & movement sense (proprioceptive) input to the child.

Tips for parents/caregiver: This activity to be carried out under supervision so that child doesn't mouth small objects.

How this activity is beneficial in the long term: The child learns to differentiate objects by touch, texture, weight & other physical specification.

29) **Name of the activity:** Explore your senses

Materials required: 2-3 plastic bottles, cotton, pleasant scent, pungent smell.

Preparation: Spray the cotton with perfume & place it in one bottle, one with essential oil & one with pungent smelling substance vinegar.

Procedure: Ask the child to open the bottle and gently sniff the smell.

Tips for parents/caregiver: Ensure the child doesn't inhale excessive smell & activity has to be done under supervision.

How this activity is beneficial in the long term: This activity gives a chance to the child to explore various smells.

30) **Name of the activity:** Touch & Match

Materials required: Use a large chart and make patterns by punching holes on it. Use 4-5 cardboard and copy the same pattern on them.

Preparation: Make child sit on chair in front of table. Place chart and cardboard to child

Procedure: Encourage the child/person to touch pattern on cardboard & following it he/she has to touch the chart & identify similar pattern.



Fig 17: Cards with Shape Patterns

Tips for parents/caregiver: Ensure to provide physical guidance to identify pattern if child has difficulty. Make the experience pleasant to the child.

How this activity is beneficial in the long term: The touch recognition of the child will improve over time.

Note: The above activities have to be given to the child with supervision; care should be taken not to provide excessive sensory stimulation to clients.

(Written Consent has been obtained from all parents of children whose pictures are used in this book)

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ABOUT THIS BOOK

This book attempts to describe various sensory activities that can be given to people with deaf blindness. Engagement in sensory activities can be very beneficial for individuals who are deafblind as they provide opportunities to explore and engage with the world through their remaining senses. The sensory activities explained in this book can have a positive impact on the physical, emotional, and cognitive well-being of individuals who are deafblind, and can help them to develop important life skills and connect with the world around them. On the whole this book will be very useful in empowering people with deaf blindness by developing communication skills, enhancing cognitive development, improving emotional wellbeing and increasing independence.

ABOUT NIEPMD

National Institute for Empowerment of Persons with Multiple Disabilities (Divyangjan), is a National level apex body under the Department of Empowerment of Persons with Disabilities (Divyangjan) (DEPwD), Ministry of Social Justice and Empowerment, Government of India, to serve as a National Resource Centre for Empowerment of Persons with Multiple Disabilities such as those with two or more disabilities in a person as per RPWD Act (2016). NIEPMD develops Multi, Trans and Inter Disciplinary models of services to provide quality care through a professional approach in the areas of Prevention, Early Detection, Early Intervention, Inclusive

Education, Skill Training, Employment Assistance, Support for Livelihood, and Rehabilitation of Persons with Multiple Disabilities.

We also develop a protocol of Services, which includes Screening, Assessment, Intervention, Management, Research & Development and developing Human Resources in the field of Multiple Disabilities to improve the quality of life for Persons with Multiple Disabilities.

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