

## Strategies for Facilitating Hand Use & Tactile Awareness

For children who are blind, tactile contact with a sound source confirms the object's identity, function, and meaning. Touch also offers confirmation when the visual image of an object is unclear or lacking in meaning. Hand search skills and tactile exploration and identification of objects and landmarks support the development of early independent orientation and mobility skills. The tactile sense does not necessarily develop effortlessly in children with significant visual impairments.

- **Body awareness.** During the early weeks and months, provide considerable holding and cuddling. Carry your baby, supported with your sari or dupatta against your body during routine household tasks to provide close body contact and increased body awareness through the swaddling effect. This has an additional benefit of providing extra vestibular and proprioceptive input. Ensure that massage, bath and dressing times include play, exploration, and the naming of body parts. With older children, encourage beginning independent dressing while providing simple verbal and physical cues regarding body part placement, body planes (front, back, sides, right, and left), and motor planning.
- **Tactile tolerance and discrimination.** Within the daily household and classroom routines, use common objects and surfaces to expose the child to a variety of textures, fabrics, and surfaces. Increase the variety over time to include cotton, silk, terry cloth, paper, wood, tile, brick etc. Give simple word labels and descriptions such as smooth, rough, soft, scratchy, cool, and bumpy. Encourage tactile exploration, play, and experimentation with hands, fingers, tools, feet, and body. Provide opportunities, but allow the child to initiate and withdraw as necessary.
- **Identification of objects.** Provide the child with many daily opportunities to play with and use a variety of objects. Include self-care items (comb, toothbrush, towel, clothes etc.), safe household objects (bowls, pots and lids, measuring spoons, etc.), novelty materials (bubble wrap, corrugated cardboard, child-safe aluminum pans, etc.), and conventional toys that offer unusual textures, weights, temperatures, and manipulative features. Provide simple word labels and descriptions for each, with special emphasis on favorites. Allow and encourage regular exploration of the home and classroom. Mediate this exploration by providing simple words for each major piece of furniture and prominent landmark. Give distinctive names to duplicates such as tables, chairs, and sofas such as Daddy's chair, your school table etc.
- **Hand search skills.** Encourage reaching for toys and objects dropped to the floor from sitting, rather than handing the item back to the child. While in a highchair or adapted seat, encourage searching for desirable objects within the defined space of the tray. Later, teach a broader and more persistent floor search for objects just dropped, reinforcing effort by adjusting the object's position for quick success. With toddlers, promote two-handed search of small tables, then reaching into shelves to locate desired objects. Ultimately, the child should be able to persistently search a shelf for several seconds using two hands in a systematic direction.
- **Self-initiated exploration.** Position objects in predictable locations and allow the child to initiate contact and explore independently. Position a bowl with unfamiliar kitchen utensils on the floor next to the toddler's favorite shelf, knowing they will be discovered. Using predictable locations and allowing the child to choose to explore or not, makes it easier for them to accept novelty.

## Developing exploratory skills - hand searching

Learning to tactually hand search is an important skill for children with low vision or blindness. *Hand searching* refers to exploring the area within arm's reach to locate an item. Hand searching provides immediate opportunities to learn about the environment the child is searching, increases the likelihood that children will have opportunities to play with objects and toys, and helps children begin to develop skills and concepts they will use throughout their lives. At first children will search randomly, but as they gain more skills and knowledge, they will learn to use circular and grid patterns to search for objects.

To use a *circular pattern search*, the child begins by making a small circle with the palm flat in the middle of the area to be searched. The child continues making bigger and bigger circles until the object is found. For toddlers, making one or two circles as they search is an excellent beginning circular pattern. To use a *grid pattern search*, the child starts in one corner of the area to be searched, for example, the top right-hand corner and searches across to the top left corner. The child would then move the hand down, search back across to the right side, and repeat until the entire tray has been searched. Toddlers will not be able to use a full grid pattern but may begin getting the concept of searching in one direction until reaching the edge of the space and then moving to search a slightly different area.

Your child must be in a *stable position* to be able to use his or her hands to search. When children are seated in a highchair, it will be easiest for them to search in front, such as on the tray. When sitting on the floor, children will easily be able to search to their front or sides. Some children will need to support themselves with one hand while they search with the other hand.

1. Place objects in consistent locations close to your child, such as in a defined play space.
2. When your child drops a toy or object and it rolls out of reach, move it closer to your child so he or she has a chance to find it.
3. Do not automatically place objects in your child's hand. Place objects and toys near your child so he or she can search for it.
4. When your child drops something, say "Look for your toy" or "You can find it" rather than immediately handing it back to your child.
5. Provide verbal encouragement to help your child to search for toys within arm's reach, but provide additional cues if your child becomes frustrated.
6. Provide your child with some toys that make noise so the sound can encourage your child to search.
7. Allow your child to see and hear you drop items. Talk about how you are searching for the item you dropped.
8. Use hand-under-hand modeling by placing your child's hand on top of yours as you move your hand to search for an object your child has dropped.
9. When your child is finger feeding, place food items in different locations on the tray so your child has to search to find them.
10. Once your child starts to initiate search, use hand-under-hand modeling to demonstrate circular and grid patterns of searching.
11. When introducing search patterns, start by modeling circular patterns in open spaces such as on a play blanket where the edges are larger than the child's arm length.
12. Model using circular or grid patterns on enclosed spaces such as a highchair tray.

**Primary Source: EIVI-FPG Child Development Institute, University of North Carolina-Chapel Hill**