



Early Intervention in Inclusive Education in Mumbai

The 'Why' and the 'How'

Manual 13

How to Develop Aids and Appliances



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Foreword

The *'How to Series of Inclusive Education'* is a set of manuals that have emerged from a study undertaken by The Spastics Society Of India, Mumbai in collaboration with UNICEF and supported by the Canadian International Development Agency (CIDA).

The title of the project is *Inclusive Education Practice in Early Childhood*. It is an action research project involving both intervention and research on a large scale covering 6000 families based in the impoverished areas of the Mumbai slums. Six hundred children, both disabled and non disabled, were placed in Demonstration Learning Centres within the community where an enrichment programme and a need based intervention was given over a two year period. The intervention strategies were carefully documented and the progress of the children tracked by external researchers not connected with the intervention team. The aim was to study the mechanism or *intervention* strategies needed to put *children with disabilities* into existing programmes being run by Government and non-Governmental agencies and the barriers that came in the way to accessibility and participation.

From this evidence based research emerged a series of instructional resource material: the *'How to Series of Inclusive Education.'* These manuals are relevant for any organisation, or agency, working to address the crucial need of bringing *children with any disability* into inclusive settings. They recommend *a whole community approach to inclusive education*, and although the research was carried out in India it can be used anywhere in the world.

Children with physical disabilities may face difficulties in many areas. With a few inputs in the form of aids and appliances, the children can be assisted in dealing effectively with their disability, thus promoting their overall growth. Provision of assistive and adaptive devices to improve independence in daily living activities like seating, feeding, toileting, mobility and communication. In classroom activities students would also require aids for writing.

Types of Aids

- ✓ Seating Aids
- ✓ Toileting Aids
- ✓ Feeding Aids
- ✓ Mobility Aids
- ✓ Communication Aids

Seating Aids

Why should a seating aid be given ?

Working becomes easier when seated in proper posture.

It helps in keeping the back and head in the proper and comfortable position.

The child feels safe.

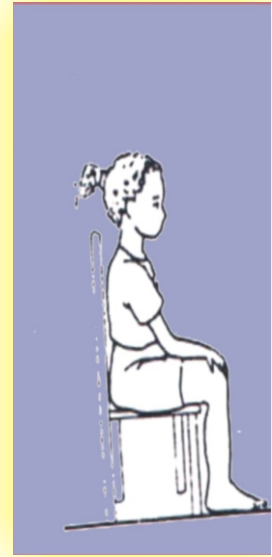
It becomes easier for the children to communicate with others in this position.

Eating and drinking independence increases in the sitting position.

Proper seating prevents the joints from developing deformities.

How to measure for an ideal chair ?

- A. The chair given should position the child with hips, knees and ankles at right angles to each other.
- B. The seat width should be measured at the Widest girth, which is at the hip, plus two inches.
- C. The depth of the chair is measured 2" from The bent knees to the back, touching the backrest.
- D. The backrest should reach the shoulder blades from the seat.
- E. Armrest should be at the height from seat to the Bent elbow. It should not cause the shoulders to be being raised.
- F. The footrest height should be measured from the bent knees to the heels.



Additional supports that can be given

- ✓ Belts and padding can be provided as per the need of the individual child.
- ✓ Headrests can be given for a child having poor head control. Side supports can be added, if the child has the tendency to drop the head to either side. The side supports should not block the vision of the child. The headrests should always be padded.
- ✓ Pommels can be given to keep the knees apart. They prevent the child from slipping down from the chair.
- ✓ Foot boxes are given instead of footrests when the child has the tendency to push his knees into extension and thereby frequently slips down the chair. Foot straps can be attached to the foot box to hold the feet in place.
- ✓ Chairs can be varied depending, on the need of the child and the environment in which the chair is to be used.

Below are some examples of cheap and easy to make chairs for support during sitting.

Figure 1 has a high backrest and side supports for a child who has difficulty in balancing his head

Figure 2 has lesser support for a child with fair sitting balance

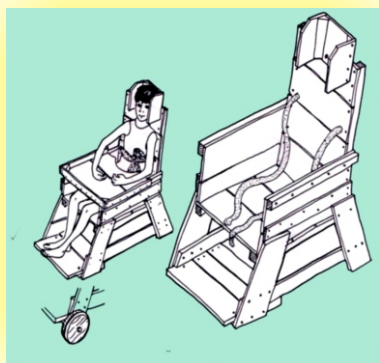


Fig. 1

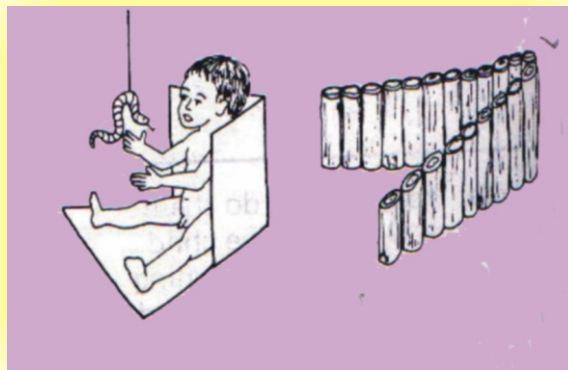


Fig. 2

Cutting a household bucket as illustrated below can make a chair



A floor/corner chair can be made of wood, using bamboo or wooden planks as shown below



A cane stool, which is common in rural households, or a large rubber tyre, can also serve as a sitting support for younger children



Below is an example of an adapted chair given to Twinkle at our PMGP SSI-UNICEF site for aiding teaching.



Twinkle is a student attending the Jawahar Nagar UNICEF site. Her parents were very apprehensive about sending her to a school, as she did not sit independently. During her visit, the therapist noticed that she sat down only for a few seconds, after which she used to bang herself backwards onto the floor. Certain other sensory processing issues were also noticed; hence a simple corner chair made from a plastic tub was built to encourage Twinkle to sit in class for a longer period of time.

The parents made a similar chair for her at home.

Even though Twinkle does lie down in class after some time, she is now sitting through sessions for a longer period of time than before. Hence, whenever she is in class, she pays attention to the games and sessions going on in class and enjoys being part of it. She used to be very aloof initially.

Toileting Aids

Steps for toilet training

- ✓ Mother makes it a routine to take the child to the toilet
- ✓ Even if child is unable to sit on his own, mother supports on a plastic potty chair.
- ✓ Different types of toilet chairs can be given to the children as they grow older, depending on the need and situation

at regular intervals.



Toileting consists of various Stages:

Indication
 Going to the toilet
 Undressing
 Managing activity independently
 Cleaning
 Dressing and coming back to class
 Toilet training can be started as early as one and half years

Children in the community use the "roadside nallas" for toileting activity. Hence in the early stages, toileting is never an issue. As children grow older they may require special aids to support them and also to maintain hygiene.



Table can be used as a support for squatting or standing up for dressing.



Grab bars for support



Commercially available plastic potty seat for a small child



A hole made in any wooden or metal chair in the house

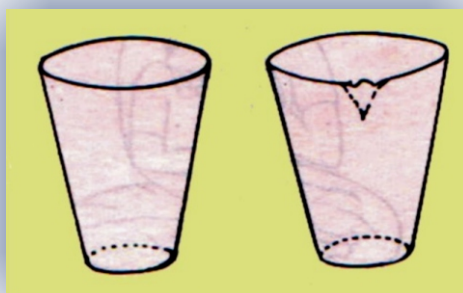


A special wooden chair constructed with side and front supports for a child with poor sitting balance

Feeding Aids

Independent feeding can be encouraged by asking the child to bring finger foods eg. Chakli (Indian savoury), biscuits, chappatis etc to the class. Eating in class reinforces their independent eating skills as children get motivated by one another,

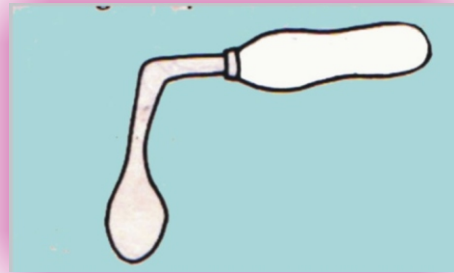
Simple aids, which if given to the child, can improve the child's independence in eating. These aids can be made by modifying regular spoons, glasses and cups. The traditional Indian thali also serves the same purpose. These are easily available in the market.



A regular plastic glass, when is cut at one end, helps in drinking, as it prevents obstruction of the nose



Glass with straw and a lid to avoid spilling.



Regular spoon, which can be cut and welded at an angle. Handle can be enlarged using gas tubing. The other option is to use strips of cloth and tie it around the spoon to increase the girth of the spoon

Walking aids

Children are given a mobility aid on the basis of their disability and keeping in view the environment in which the aid is to be used.



Crutches



How to measure for a crutch ?

The length of the crutch to the handgrip should be from floor to the wrist of the hand when hands are relaxed at the side of the body.

For axillary crutches, the length from the wrist to 2" below the armpit is the length of the trunk support.

For elbow crutches, the length of forearm support is 2" below the bent elbow to the handgrip.



Walkers



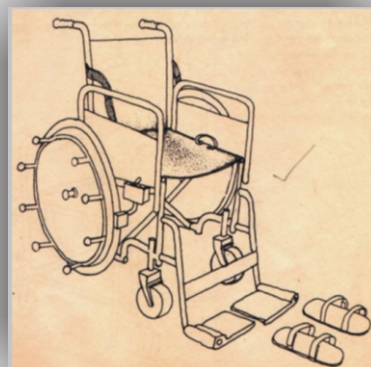
Canes
and
Walking sticks



Alternate forms of providing movement



Scooter boards

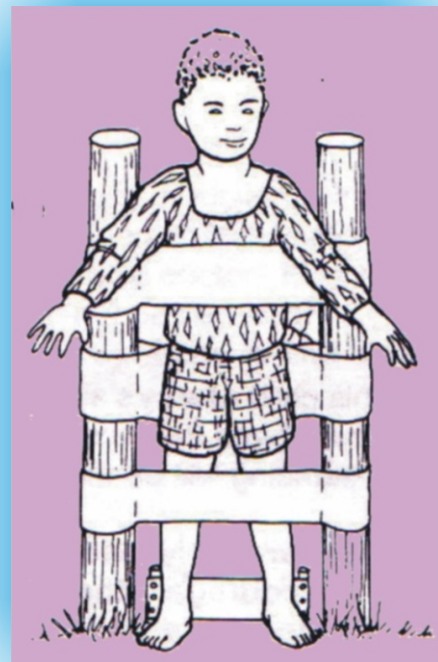


Wheelchairs

A child who is learning to walk initially can be given training using aids. Below are illustrations of a child being trained to walk using parallel bars and a walking frame.



Standing frames: They can be used for proper positioning of the legs for preparation of the feet for walking.



Communication Aids

What is Communication ?

Communication can be verbal and non-verbal

- ✓ Verbal communication includes speech. At times children are unable to speak due to hearing difficulties. To be able to hear clearly, hearing aids can be provided.
- ✓ Non verbal communication includes
 - Gestures eg. Sign language or communication board.
 - Facial expressions
 - Writing

What is Augmentative and Alternative means of Communication? (AAC)

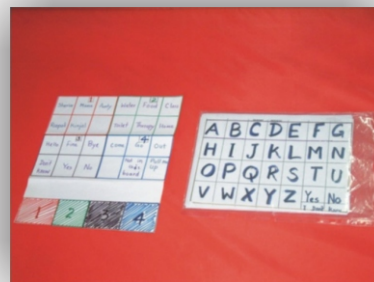
People who are unable to communicate with the aid of speech, or those who experience persistent difficulties producing intelligible Speech, and at times do not profit from traditional speech therapy, share the need and are often recommended alternative and augmentative communication (AAC) systems.



Graphic Symbols

The four main kinds of symbols used in AAC are:

- ✓ Spoken word
- ✓ Written words,
- ✓ Signs
- ✓ Graphic symbols

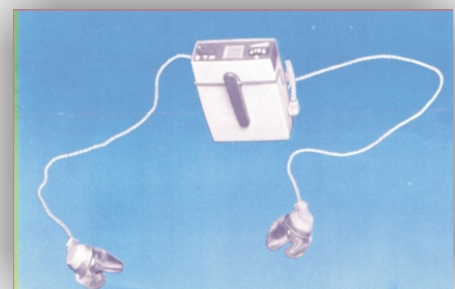


Written symbols

Hearing Aids

Early detection, diagnosis, and intervention are important to give the deaf child optimal conditions for language development

It is a good idea to advise parents of the child to take him/her to a specialist if they have noticed any signs of deafness. This will help in determining:



Pocket hearing aid

- ✓ The exact degree, type, and intensity of hearing loss
- ✓ Recommend medical treatment wherever possible
- ✓ Recommend the use of hearing aids (amplification device)

Large groups of children, who go unidentified would actually have benefited if their hearing loss had been detected on time. Early provision of a hearing aid helps them to develop language.

They have to be trained to wear the hearing aid all the time in order to learn to gather sounds and attach meaning to them.

The teacher needs to get familiar with the way the hearing aid operates and its controls

She needs to know;
 The use of the hearing aid.
 How to insert and remove the hearing aid(s).
 What batteries to use and how to insert or
 Remove them.
 How to use the volume control.
 Operation of on-off switch.
 How to clean the hearing aid and the ear mould.



Inserting hearing aid

Writing Aids

Writing for children with disabilities may be difficult as they have poor or weak grasp and are unable to hold a pen or a pencil properly. Simple aids or modifications can be given as and when required which will help to overcome this difficulty.

Often just a slightly thicker pencil or pen, is held better than the pencils of the usual thickness.

The thickness of regular pencils and pens can very easily be increased by fitting them with the following:

- Pushing the pencil through a large eraser, gas tubing or small size potato.
- Tying a thick cloth over a pencil or padding done with sponge and leather.

Examples of some activities that can be used to facilitate pre writing skills:

- Plasticine play
- Finger painting
- Vegetable painting
- Beading
- Lacing

These are pictures of children at the sites receiving training for writing skills. This training is imparted to all children irrespective of the disability.



This is Lata developing her fine motor skills of pinch using plasticine



This is Rakesh who is being encouraged to use the tripod grasp for writing



These are gross motor skills, which have to be developed to achieve good fine motor functions

The aids described above were explained to the community workers and it was up to them to use as and when needed by them



This is again some more writing practice

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