Chapter 7

Toilets – access and use

Figure 7.1. Handrail attached to floor on both sides of a squat toilet. H: ~30cm. (The wide toilet pan is not recommended.)

This section considers a wide range of toilet facilities and their alternatives, from sanitary water-flush systems to open defecation, because these are the current living conditions of many people in the world, including many disabled people.

7.1 Benefits of more accessible toilets

Benefits reported to be felt by disabled people themselves:

- Greater self-reliance, dignity and privacy – those who previously relied on a family member to stay with them, to provide support, can now be left to use the toilet in private. This includes elderly people who are enabled to use the toilet independently until later in life.
- Disabled people are able to use the toilet more promptly and hygienically, which helps them avoid soiling their clothes and the toilet, resulting in health benefits, and also greater comfort, dignity and self-esteem.
- Improvements in health – a user who may previously have had to place their hands on the floor to balance, can now avoid getting them wet and dirty.
- The disabled user's clothes stay dry and clean because they are not dragging on the dirty floor. This reduces the risk of contamination.

Benefits are felt by the whole family:

- Less soiling of clothes and toilet creates easier, more pleasant work for the clothes washer and toilet cleaner (usually women in the family).

For a list of resources providing inclusive design recommendations for toilets, see Appendix A1.1, page 255.

For resources on types of latrines, see under Technical Information, Appendix A1.2, page 256.

Figure 7.2. Painted handrails cemented to floor on both sides of pedestal toilet. 50mm Ø g.i. pipe; H: ~80cm.

Figure 7.3. Handrails cemented to each side wall of toilet cubicle. H: ~ 80cm – likely to be too high and too far apart for some child users. *(Case-study 9.29, page 242)*

- Savings in time and effort for family members, which frees up more time for other activities, such as income generation opportunities, or time for children to play or go to school.
- Helps avoid injury from falling while using the toilet (an environment which is often slippery, dark and with inadequate space to manoeuvre).
- Greater accessibility for disabled people usually means facilities that are also more child-friendly, and more accessible for pregnant women.
- Overall family health benefits.

7.2 Getting there and getting in

Many of the difficulties of getting to the toilet can be reduced by bringing the toilet as near to the house as possible, allowing for technical considerations. See section 5.4 on 'Getting there' on page 45 for discussion of ways to make it easier to reach a facility. Where technology and the household allow, there are many benefits to installing a toilet inside the house. This is most likely to be acceptable if a water-seal toilet is an available option.

See Section 5.4 on pages 56-62 for details of ways to make it easy for a disabled person to enter a facility.

7.3 Support rails

The most common need is to provide support for a person unable to squat or sit independently. This can be with handles or support rails, or somewhere to sit while urinating or defecating. (The information in this section can also be applied in other situations, such as bathing and clothes washing.)

Figure 7.4. Diagonal and horizontal rails fixed to side walls at different heights. Note additional horizontal rail from front to back of wall on the right.
(Case-study 9.26, page 232)

Rails provide support for people to:

- Enter and leave the toilet cubicle or area;
- Stand while undressing and dressing;
- Balance while lowering themselves onto or getting up from the toilet;
- Balance while transferring to and from a wheelchair, crutches or other mobility device;
- Balance while squatting or sitting on the toilet;
- Guide blind and visually impaired toilet users.

These can be provided as:

- An integral part of the latrine structure;
- An adaptation or addition to an existing facility to make it more accessible;
- A piece of equipment which is movable; or
- A combination of any of these.

WHO, 1999 (1)

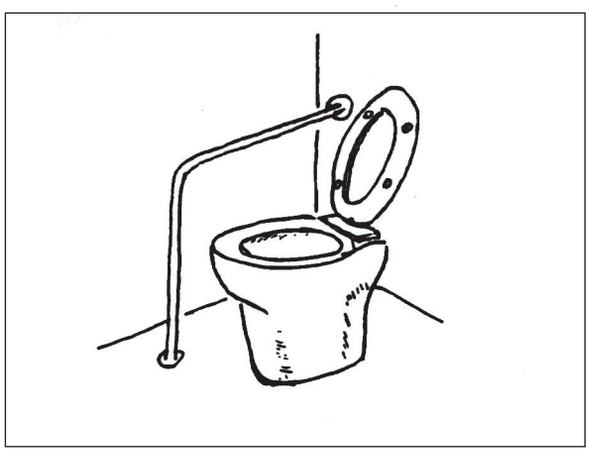


Figure 7.5. Rail on one side only allows wheelchair to be positioned beside toilet for easy sideways transfer.

Types of support rails

Rails can be provided in different locations, depending on the latrine structure, available space and users' needs (see page 107 on consultation with users):

- Two horizontal rails cemented to the floor on each side of a squat toilet (Figure 7.1). Suitable for use by a person with weak legs who has difficulty squatting without support.
- Horizontal rails cemented to the floor on each side of a toilet with a raised seat (Figure 7.2).
- Two horizontal rails, one attached to each wall on either side of the toilet (Figure 7.3). This is only possible if the toilet wall is strong enough. Rails may be too wide apart for many users.
- Two diagonal rails, attached to the wall on each side of the toilet (Figure 7.4). Rails at different heights suit different sized

Figure 7.6. Single horizontal wooden rail (H: ~50cm) from door to back wall, for support to enter toilet. Too high for child to hold while squatting.
(Case-study 9.19, page 215)

Figure 7.7. Painted rail fixed to floor and walls.
(Case-study 9.25, page 229)

users. The same user can hold a higher rail when standing, and a lower rail when sitting.

- Single horizontal rail beside the toilet, fixed to the wall or floor (Figure 7.5) allows a wheelchair to be positioned on one side of the toilet for easy sideways transfer.
- Single horizontal rail extending from the door to the toilet (Figures 7.6 and 7.7). For use by a person to support themselves while walking from the door to the toilet, and for lowering to sit or squat, and standing up again.
- Horizontal rail in front of the toilet, fixed either to the wall (Figure 7.8) or to vertical support poles (Figure 7.9). A 'ladder' of several rails at different heights can be helpful for a person with limited arm movement, or different sized users (Figure 7.10).
- Two bamboo poles stuck vertically into the ground, one on each side of the latrine slab (Figure 7.11).
- A frame around the toilet, made of wood (Figure 7.12) or metal pipe (Figure 7.13). This is useful if toilet walls and floor are not strong enough to attach rails, or a rail attached to a wall would be too far away, or accommodation is rented or shared, so adaptations to the fabric of the facility are not an option.
- Available furniture, such as a chair or table. This must be stable enough not to fall over when the user leans on it (Figure 7.14).
- Support rails on the toilet seat itself (Figure 7.15).
- A rope suspended from a roof beam for the user to hold on to (Figure 7.16). This is also suitable for use in communal or rented facilities. The rope does not alter the structure of the facility, takes up no extra space, does not inconvenience other users, and is not likely to be stolen.

Figure 7.8. Horizontal wooden bar tied to existing pipes in front of toilet. H of bar (~70cm) was decided by user. No choice of distance for bar – nearer would be more comfortable.
(Case-study 9.6, page 177)

Figure 7.9. Single horizontal bamboo rail in front of toilet.
(Case-study 9.10, page 185)

WHO, 1993 (2)

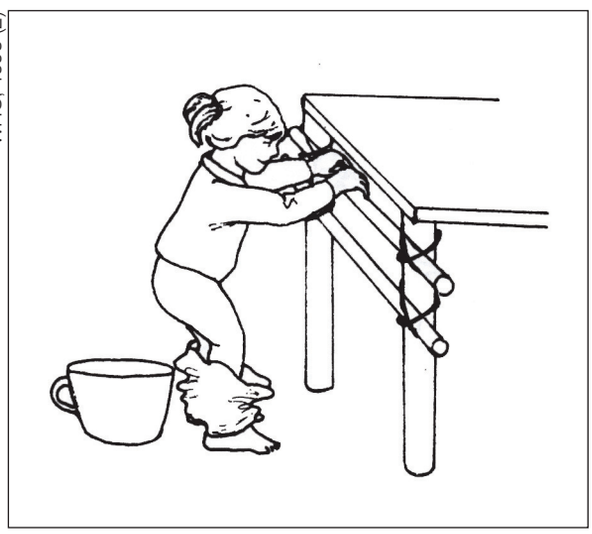
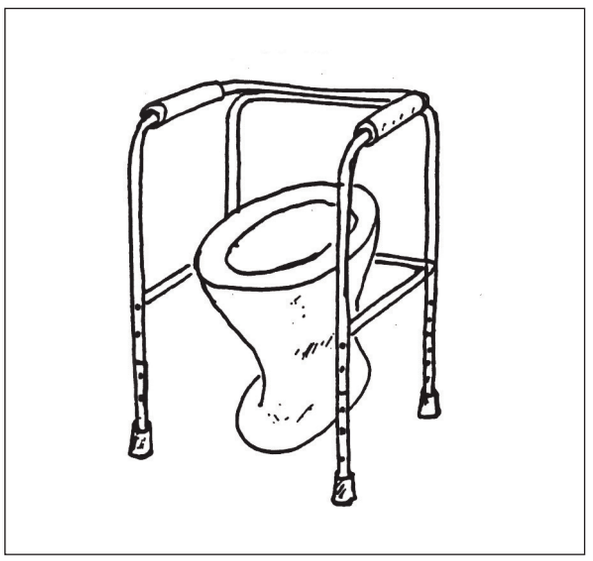


Figure 7.10. 'Ladder' of rails to help a child pull herself up and lower herself down.

Figure 7.11. Two vertical bamboo support poles one on each side of latrine.
(Case-study 9.9, page 183)

Figure 7.12. Painted wooden frame around pedestal toilet seat.



WHO, 1999 (1)

Figure 7.13. Four legged tubular steel frame, with cushioned handles and rubber 'feet'. Adjustable height.

Werner, 1987 (3)

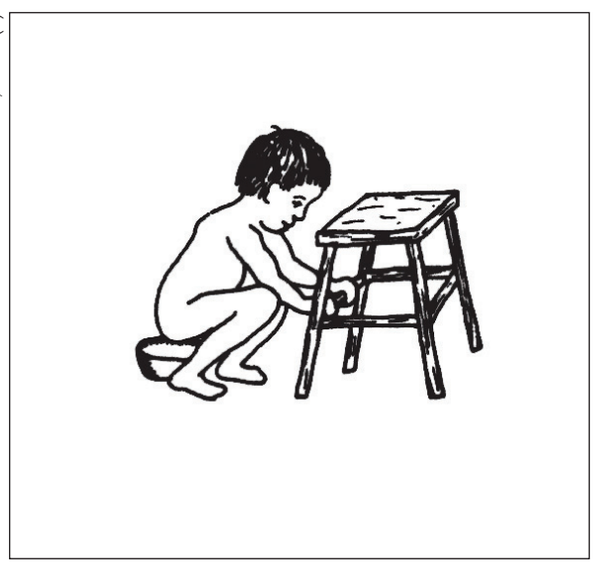


Figure 7.14. Child using available furniture for support.

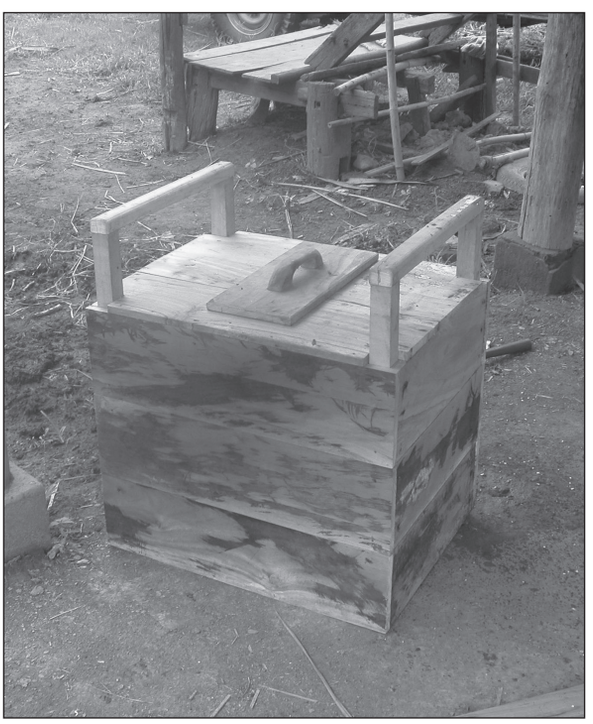


Figure 7.15. Wooden toilet seat with handrails. *(Case-study 9.17, page 209)*

Figure 7.16. Rope suspended from roof beam for support while squatting.
(Case-study 9.7, page 179)

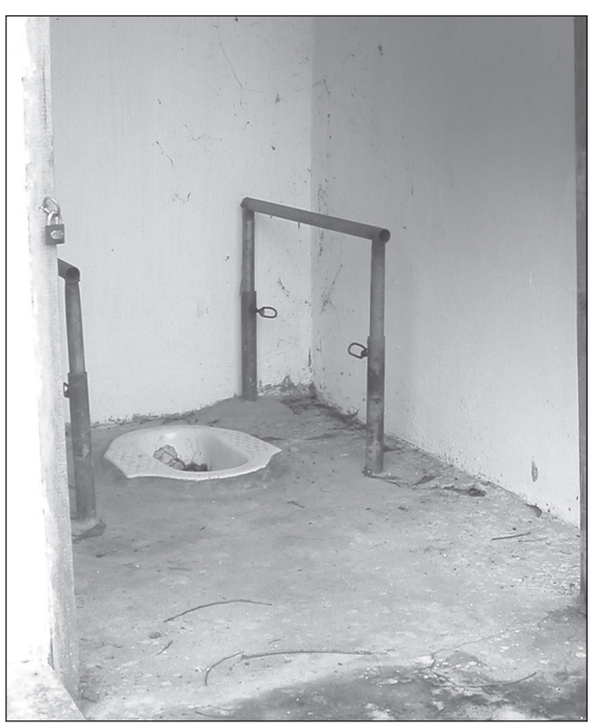


Figure 7.17. Handrails of adjustable height, suitable for a growing child.
(Case-study 9.16, page 207)

An alternative to rope is knotted recycled bicycle tyre inner tubes. The structure must be strong enough to support the user's full weight.

Characteristics of support rails

Rails may be of galvanised iron (g.i.) pipe (25 – 50mm diameter), bamboo or wood.

50mm g.i. pipe is very robust, and suitable for heavy use by many users, such as in an institutional setting (Figures 7.2 and 7.4). For small children, it is too wide to hold onto comfortably. Narrower pipe (25mm) is suitable for most users at household level (Figure 7.7).

Materials such as bamboo and wood are less durable than iron pipe, but can often be replaced at little or no cost (Figures 7.9 and 7.11).

If rails are made of pipe, the height can also be made adjustable (Figures 7.17 and 7.18). This is useful in the case of a child, as the rails can be raised as the child grows.

Support rails - Issues

Consultation with users: wherever possible, the type, location and dimensions of rails should be chosen to suit the needs of individual users. This needs to be done through a process of consultation, where users participate with the engineer to decide the best place to fit the rails.

Safety: support rails must be strong enough and firmly fixed enough to bear the weight of the user, if this is the function. **A rail that breaks is more dangerous than no rail at all!** Rails intended for help with balance only, or as guidance for blind users may need to be less sturdy. The user/s must be clear about this distinction.

Steel rails should be painted to resist corrosion.

If a wheelchair has removable sides, the easiest way to transfer from wheelchair to

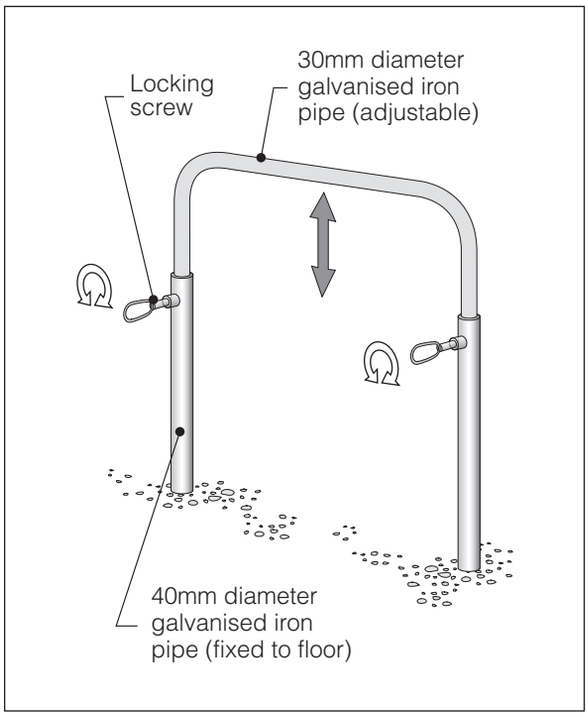


Figure 7.18. Detail of adjustable joint.

HITS, Uganda

Figure 7.19. Wooden toilet chair with back and side-rails.

toilet is to park the chair beside the toilet, and move sideways. In this case, avoid fixing a rail on the side of the toilet which may obstruct this movement.

7.4 Raised toilet seats

Raised toilet seats are another way of providing support for users. Their advantages are:

- Convenience for transfer from and to a wheelchair.
- Convenience for people who have difficulty lowering themselves into a squatting position, and even more difficulty standing up again!
- Increased comfort - reduced risk of the user getting their clothes dirty and wet.
- They may help children overcome their fear of using a toilet (they may be afraid of falling into the hole of a squat toilet).

Drawbacks of raised seats

- A seat may be uncomfortable for people who are used to squatting, or may be perceived as 'Western' and culturally less acceptable.
- Anal cleansing using water is more difficult when using a seat than when squatting. However, a long gap in the seat from front to back makes this easier.
- There is the risk that non-disabled users, who prefer to continue squatting, either make the seat dirty by squatting on it, or may need a separate toilet, which increases costs.

Support and safety

Users with poor balance may need support to prevent them falling off the seat. They may be happy to accept support from a family member while they use the toilet. However, if they prefer to be left alone to use the toilet, there are ways to reduce the risk of falling.

Source Handicap International (4)

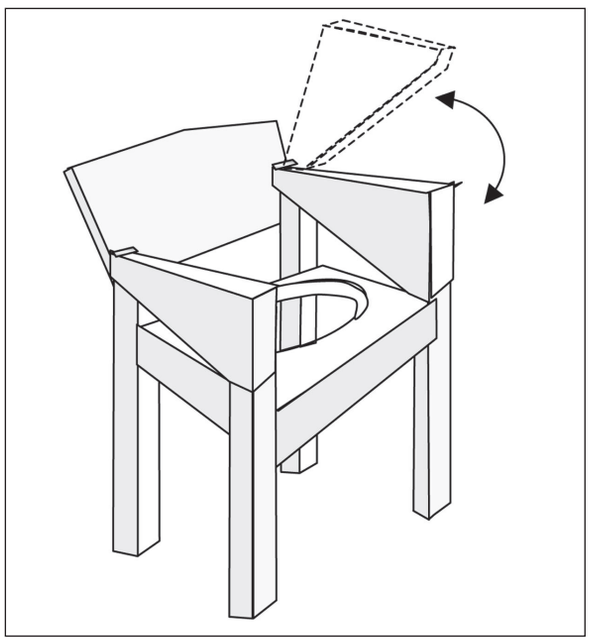


Figure 7.20. Chair with hinged side-rails that can be raised out of the way.

Source Handicap International (4)

Figure 7.21. Chair with side-rails that can be raised.The rails are attached to the chair back with a bolt, on which they swivel vertically.

Falling sideways can be prevented by using a seat with a back and side-rails (Figure 7.19). However, side-rails can be an obstacle to sideways transfer from a wheelchair. Side-rails that can be removed or raised are therefore useful (Figures 7.20 and 7.21). Falling forwards can be prevented by using a horizontal bar which attaches to the sides of the chair (Figure 7.22).

For greater support and comfort, straps can be used. These can be passed round the back of the chair and around the person's waist or chest. Shoulder straps can be attached to the top of the chair back, and passed over the user's shoulders and either crossed and tied at the back, or fastened to a waist strap. These can be made of wide elastic, or strips of fabric or rubber (Figures 7.45, 7.46 and 7.47) or a scarf can be used (Figure 7.23).

Even if these safety measures are taken, there may still be risks to leaving the disabled person alone, especially someone who has epileptic fits or is confused. Disabled people who are unable to walk should not be left sitting on a hard surface for any longer than necessary, as this increases their risk of developing pressure sores.

Seats can be either fixed or movable.

Fixed raised seats (pedestals)

Fixed seats can be made from a variety of materials.

- **Ceramic** is the most durable and easiest to clean, but also the most expensive. It is not always available in rural areas. It also depends on water to flush it, making it unsuitable in areas where water is scarce.
- **Cement-plastered brick** is durable and, when painted, repels urine and is easy to clean (Figures 7.24 and 7.27). Materials are widely available. An alternative is twin cement-plastered brick blocks, one on each side of the toilet hole (Figure 7.26). This uses fewer bricks than a seat, making it cheaper, and has the advantage of being more convenient for anal cleansing.

Source IICP, 1999 (5)

Figure 7.22. Toilet chair with removable horizontal bar to prevent user falling forwards.

Both ceramic and concrete can be cold to sit on, but if this is a problem a wooden seat could be placed on the structure (e.g. Figure 7.28).

- **A wooden seat** is less durable than cement or ceramic, but may be cheaper. It can be placed over the latrine pit and dug into the ground for stability (Figure 7.29). The seat has the flexibility to be moved to a new location if needed – when the pit is full, for example, or to avoid flooding in the rainy season. To increase the durability of wood it can be painted or varnished to make it moisture resistant, easier to clean and therefore also hygienic (Figure 7.36).
- **Mud** (air-dried clay): In communities with the skills to make robust structures out of mud and/or dung, a low-cost toilet seat can be made of mud-plastered bricks (Figures 7.30 and 7.33). This is the least durable, especially if it is often wet, but costs little to replace.
- **Adapting existing materials**: where a commercially available PVC toilet pan is used, it can be installed at a height suitable for the user, such as level with a wheelchair seat. This could be on a raised platform of cement-plastered brick (Figure 7.31). Sitting blocks can be added on each side of the toilet pan.

Source IICP, 1999 (5)

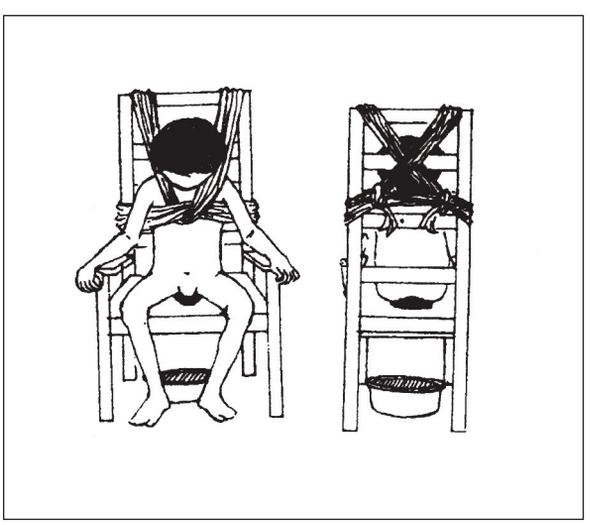


Figure 7.23. Child supported with a scarf.

The toilet hole

The hole in the seat needs to be large enough, and set near the front of the seat, to reduce the risk of the user fouling the seat (Figure 7.29). A distance of 10cm between the front of the seat and the front of the hole is suitable, otherwise small children cannot sit far enough back on the seat to defecate directly into the hole.

Hole dimensions: for adults, a width of 20 – 27cm, with a minimum length from front to back of 20cm. For a child, the width of the hole may need to be less (Figure 7.32).

Examples of fixed raised seats

Figure 7.24. Toilet seat made of bricks, plastered with cement mortar and painted. Raised at the back for extra support.
(Case-study 9.24, page 224)

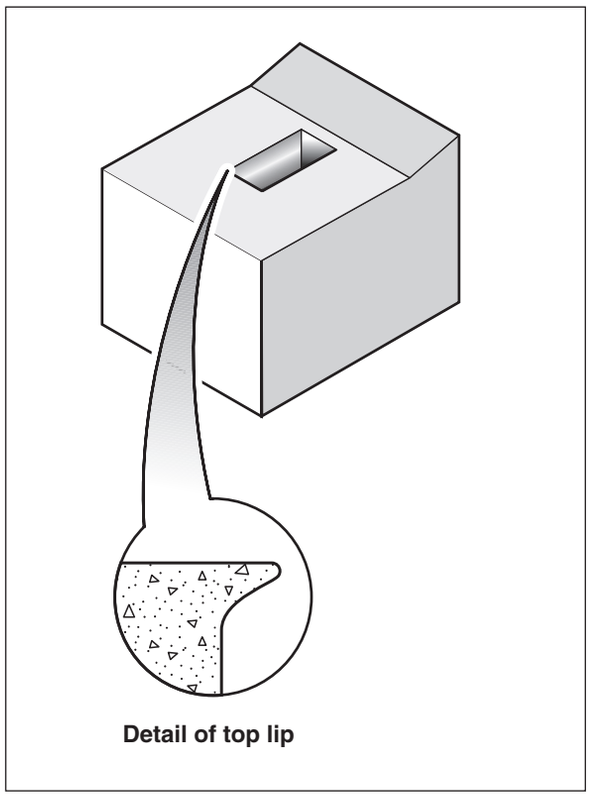


Figure 7.25. A 'lip' around the top of the toilet hole.

Figure 7.26. Twin cement-plastered brick sitting blocks. Height: 25cm; gap: 14cm. The gap makes anal cleansing easier than on an ordinary seat.
(Case-study 9.26, page 232)

Sarah House

Figure 7.27. Concrete toilet seats on sale, with hinged wooden lid to reduce flies and smells.

Examples of fixed raised seats (continued)

Source Werner, 1998 (6)

Figure 7.28. Wooden toilet seat supported on two brick blocks over a pit latrine. The pit was dug more than 2m deep to avoid contaminating the water source. Location next to the water trough makes water for anal cleansing and handwashing easily accessible.

Figure 7.29. Wooden box toilet seat installed over a pit latrine. A cover prevents flies and smells when the toilet is not in use.
(Case-study 9.17, page 209)

Source IICP, 1999 (5)

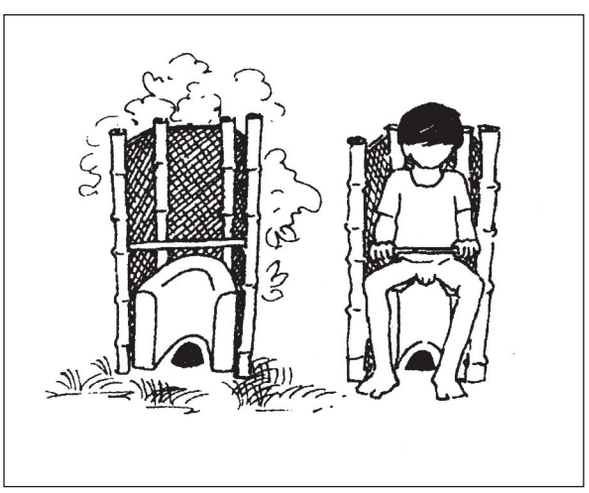


Figure 7.30. Mud toilet seat.

Figure 7.31. Cement-plastered brick platform with commercially available PVC toilet pan inset. Sitting blocks at height for easy wheelchair transfer.
(Case-study 9.1, page 154)

Source: Werner, 1987 (3)

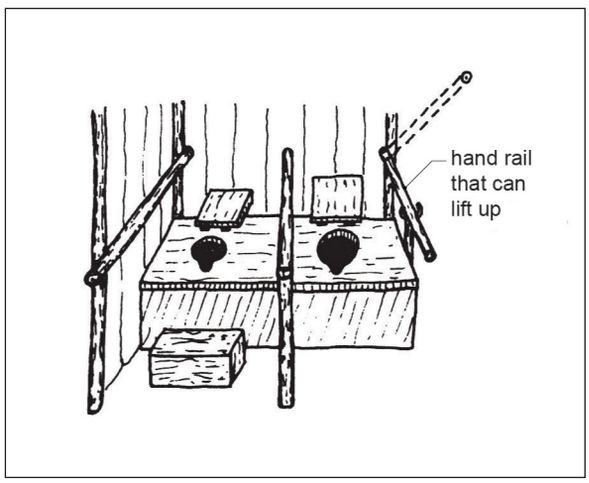


Figure 7.32. Two-seater latrine seat with child-sized hole (on the left) with a step.

Twin sitting blocks used by a child (Figure 7.26) should have a gap of 10 – 15cm wide. If the gap is too wide it will be unsafe and off-putting for a small child to use.

A 'lip' around the edge of the hole can help minimise fouling of the sides of the drop hole (Figure 7.25).

Movable toilet seats

These are chairs or stools with a hole in the seat, which are designed to be placed over the toilet pan so that urine and faeces drop directly into the hole. They can be moved off the toilet and placed to one side when not in use, allowing the disabled person to use the same toilet as the rest of the family, with the same amount of privacy.

They come in a range of designs and materials – bamboo, wood, metal or plastic. Often an ordinary wooden household chair with a hole cut in the seat can be used (Figure 7.19). Plastic is more durable but, generally,

Box 7.1. Mud seat for a child unable to sit without support

An NGO was running workshops on how to make cooking stoves out of mud in Pakistan. We showed one of the trainers a picture of a mud chair (from Disabled Village Children) (5), and she constructed several. They were used in the family compound; they were quite heavy, but the families placed them on a piece of tarpaulin and moved them short distances when needed. The chair worked well in the dry climate of Baluchistan, so I am not sure of the effect water/rain might have on it. The people there made their houses, compound walls etc, from mud, so the skills were there, we just provided the idea. The cost was about 10 rupees (20 US cents). We didn't adapt the technique for toileting, but it could easily be tried, either as a commode chair with a removable pot, or a fixed seat over the toilet. *(Sudha Raman, physiotherapist, Handicap International Belgium)*

Sudha Raman

Figure 7.33. Child seated in a mud seat.

Figure 7.34. Moulded plastic toilet seat: durable, easy to clean, hygienic. High cost. Hole quite far back in seat. No splash-guard.

Angela Martin

Figure 7.35. Wooden toilet stool for use over the family pit latrine. Gap between planks: 10cm – suitable for a child. Front plank acts as splash-guard.
(Case-study 9.30, page 245)

the more durable the material, the higher the cost (Figure 7.34).

A wood or bamboo seat is generally cheaper than brick and concrete, as locally available materials can be used (Figure 7.35). Both can be varnished or painted to make them more moisture resistant, durable, easy to clean and hygienic (Figure 7.36).

On a squat toilet, raised concrete or ceramic footplates need not be an obstacle to using a toilet seat over it, as long as the legs of the seat fit in front of and behind the footplates (Figure 7.36). This can even be an advantage, by serving to position and stabilise the seat directly over the hole.

Drawbacks:

- If the seat is left in place, it may get dirty from others using it inappropriately. Enough space is needed inside the latrine to move the seat off the toilet to one side when not in use.
- If there is not enough room, the seat needs to be carried in and out of the latrine. A support person may need to do this for the user.
- The latrine floor must be firm enough to bear the weight of the seat. Wooden or bamboo bars, or 'runners', can be attached between the front and back legs on each side of the chair at floor level (Figure 7.37). These help spread the weight of the chair more evenly, and minimise the risk of breaking through an earth floor. They also help improve the chair's stability, and on a smooth floor can make the chair easier to move around by sliding it rather than lifting it.
- There is a risk of urine splashing the user's legs or clothing between the seat and the toilet hole. A **splash-guard** – a board or plastic sheet covering the space between the front chair legs – can prevent this.

Examples of movable seats

Figure 7.36. Toilet stool used over a squat toilet. Painted wood resists moisture. No splash-guard.

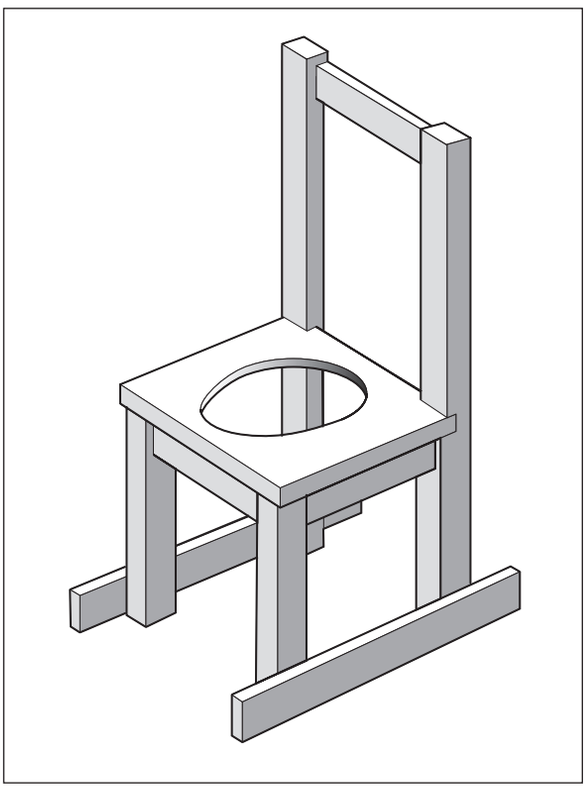
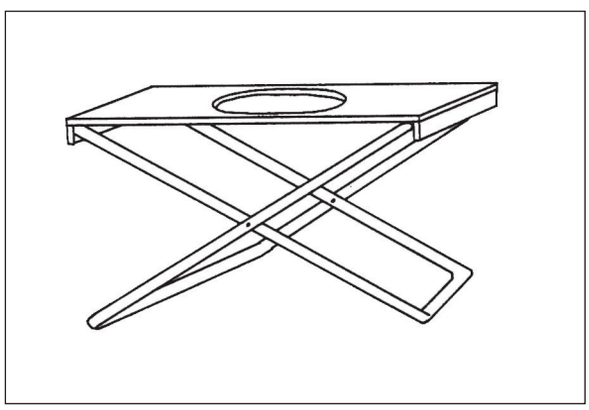


Figure 7.37. Toilet chair with side runners.These spread the weight of the chair and improve stability.



Source: Van der Hulst et al

Figure 7.38. The principle of a foldable toilet seat. Can be stored out of the way when not in use. May lack stability.

Figure 7.39. Wheelchair with small tyre inner tube in place of seat. Inner tube is durable, easy to clean, widely available at reasonable cost. Suitable for persons with poor sitting balance, so long as it is fully inflated.
(Case-study 9.5, page 174)

Figure 7.40. Wheelchair with a centre plank removed to leave a gap in the seat for toileting.*
(Case-study 9.15, page 201)

* This wheelchair is not designed for this adaptation. The frame directly under the seat means it inevitably gets fouled.

Wheelchair or trolley as a toilet seat

To avoid the need to transfer on and off a wheelchair, low trolley or other mobility device, a wheelchair can be designed or adapted for use as a toilet seat. Users enter the latrine in their wheelchair or trolley, which they position over the toilet hole. They remain seated in the chair to urinate or defecate, so that faeces and urine fall directly into the toilet hole. Here are examples of how this may be done:

- The user removes the seat cushion and board, revealing two metal struts which support the seat but are wide enough apart to leave a gap in the middle. He replaces the seat with a small tyre inner tube, on which he sits to use the toilet (Figure 7.39).
- The user removes the seat cushion and a central plank of the seat, which creates a gap about 10cm wide in the seat (Figure 7.40).
- A small cloth step is added to the wheelchair halfway between the seat and the ground. This makes it easier to transfer into the chair from the ground. This 'transfer' seat has a hole in it, which the user sits on to use the toilet (Figure 7.41).

To ensure that the wheelchair is positioned directly over the toilet hole, some type of guide is useful. This could be marks on the floor or wall, or concrete (or other material) mouldings for the wheels to slot into (Figure 7.42).

Advantages of a wheelchair toilet seat:

- The disabled person uses the same toilet facilities as the rest of the family.
- There is no need to leave a seat in the toilet that may obstruct other users.
- No extra space is needed to park a wheelchair beside the toilet.

Example of a transfer seat

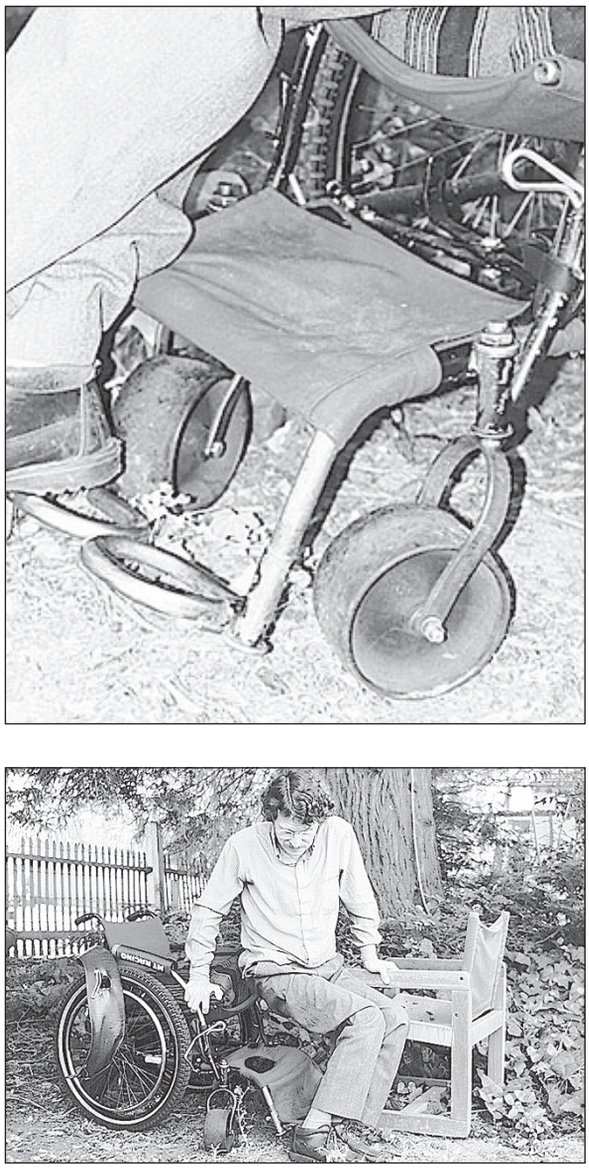
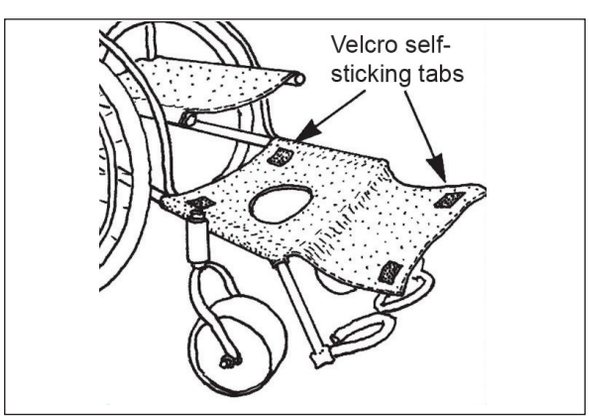


Figure 7.41. 'Transfer' seat as toilet seat (6). The seat has a hole which is covered by a flap fastened into place when not in use. For toileting, the flap is opened and folds out of the way. It could be difficult to keep the cloth seat clean.



Drawbacks to the wheelchair toilet approach:

- It is not suitable for all designs of wheelchair. If the frame underneath is not designed so that the central section is kept clear, then the frame can become fouled.
- It can only be used where the toilet pan is set level with the floor, otherwise the wheelchair cannot be wheeled over it.
- The latrine floor must be strong enough to bear the weight of the wheelchair, otherwise there is a risk of the floor collapsing.
- Some users might need help to lift their own weight off the seat in order to swap the cushion for the inner tube.
- Because of the long drop between the seat and toilet hole, there is a high risk of fouling the chair frame. This is not a problem for low-trolley users, who are the most common users of this method (Figure 7.48). For this reason, many wheelchair users prefer to use the commode chair option (see Section 7.6 on Commode seats).
- The inner tube may still be too expensive for the poorest. However, alternatives can be made using cheaper materials, e.g. a plastic ring padded with straw (Figure 7.47).

7.5 Squat latrines

For a person who can squat, but has poor balance, a handrail is often enough to make a squat toilet usable (see page 103 on Types of support rails). Alternatively, a movable toilet seat may be used over the toilet pan, as described above.

For people who use a low trolley (Figure 7.48) or who crawl, the toilet pan should be installed as level as possible with the surrounding floor (Figure 7.43). It is generally recommended that a latrine slab is installed slightly higher

Figure 7.42. Cement mortar mouldings next to toilet pan for wheels of wheelchair to slot into for accurate positioning.
(Case-study 9.15, page 201)

Figure 7.43. Squat toilet installed level with the surrounding floor.
(Case-study 9.16, page 207)

than ground level, to reduce the amount of debris falling in, and to improve the flow of water away from the slab. The earth around the slab should be banked up to finish level with the slab, so that there is no step.

7.6 Commode seats

If reaching or using the latrine is a problem, for whatever reason, a commode seat is another option. This is a toilet seat with a hole, used with a container underneath, such as a bucket, bowl, tin can or piece of plastic or paper. The contents of the container are then disposed of in the toilet or elsewhere by a helper.

Advantages:

- The seat can be placed in the most convenient location for the user or family member, either inside or outside the house. For example, the seat can be placed near the kitchen, so that a mother can keep an eye on her disabled child while she continues with other tasks.
- Proximity: The problem of distance or an inaccessible path to the toilet can be avoided.
- A commode seat is less likely than a toilet seat to become dirty or damaged by other users, or by being repeatedly moved on and off the toilet.

Drawbacks:

- The container needs to be emptied and cleaned after use by a family member.
- A separate private toilet area may need to be created.
- The disabled person risks becoming isolated if left sitting alone for longer than necessary.

Examples of commode seats

Figure 7.44. Child's wooden commode chair. Note the holes in the sides to insert a wooden bar to prevent child falling forwards.

Figure 7.45. Wooden commode chair. Note fabric straps to support the user.

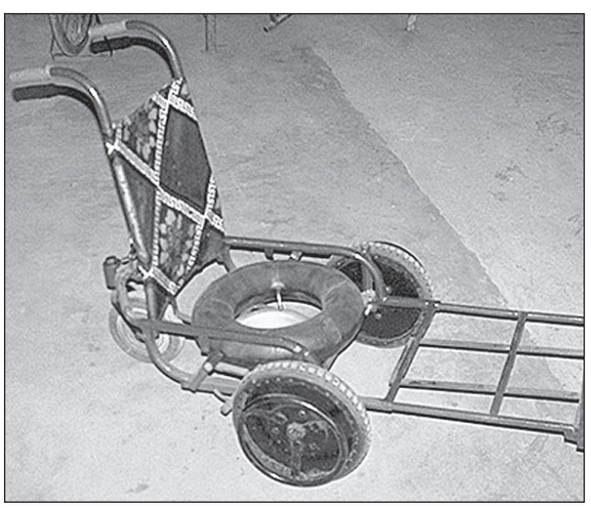
Figure 7.46. Padded wooden commode chair. (Shown with pot removed). Washable plastic covering is hygienic but comfortable.

Figure 7.47. Metal commode chair with plastic inset toilet pan. Bought locally and adapted. Note sitting ring padded with straw for extra comfort, wooden plank and waist belt for extra support. *(Case-study 9.8, page 181)*

Shahidul Haque, SARPV; Source: Werner, 1998 (6)

Figure 7.48. Low trolleys in Bangladesh are used mainly by disabled women as they are suitable for floor level activities.

Source Werner, 1987 (3)



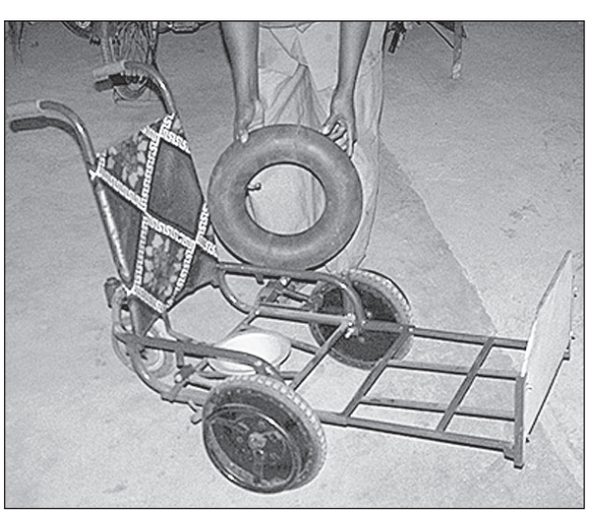
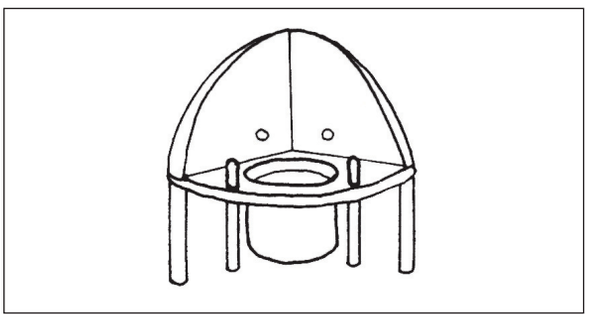


Figure 7.49. The low trolley has a pot that fits into the frame under an inner tube, which functions both as a cushion and as a toilet seat. For general use, the inner tube is covered with a mat.



Source WHO, 1993 (2)

Figure 7.50. Corner seat with potty insert for child with poor sitting balance.

Source: Werner, 1998 (6)

Figure 7.51. This child uses walking frame that converts to a toilet seat (below).The fold-down seat has a potty insert which he can use, wherever he is at the time.

Figure 7.52. Water storage jar beside the toilet.
(Case-study 9.15, page 201)

Figure 7.53. Water trough inside toilet cubicle.
(Case-study 9.19, page 215)

Figure 7.54. Flexible hose attached to a tap allows the user to fill a container with water using only one hand.
(Case-study 9.6, page 177)

7.7 Internal water source

A water point inside the latrine cubicle is very important:

For personal hygiene Anal cleansing is particularly important for a number of groups, including adolescent girls and women when menstruating (whether disabled or non-disabled), people who use catheters, or use manual bowel evacuation. Handwashing with soap and/or ash and water is important for everyone after using the toilet.

For toilet flushing Pour-flush toilets need to be flushed with water in order to function.

Many disabled people are unable to fetch water for themselves each time they need it. The water should be within reach of the user when squatting or sitting on the toilet.

If piped water is available, a tap should be provided inside the toilet cubicle.
Tap height for wheelchair users/those using a toilet seat: 80 – 100cm.
Tap height for people using a low trolley, or squatting: ~40cm.
For more details on Taps and tapstands, see page 71.

If there is no piped water, a container should be provided from which water can be scooped, or drawn via a tap. This may be a bucket, or storage jar (Figure 7.52), or a water trough constructed as part of the facility (Figure 7.53). For more details of water storage options, see Section 6.5 on page 80.

A flexible hose attached to a tap allows users to fill a container with water using only one hand (Figure 7.54) or to wash themselves easily (Figure 7.55). The end of the hose should be stored off the ground when not in use, to avoid contamination from the toilet floor.

Source IICP, 1999 (5)

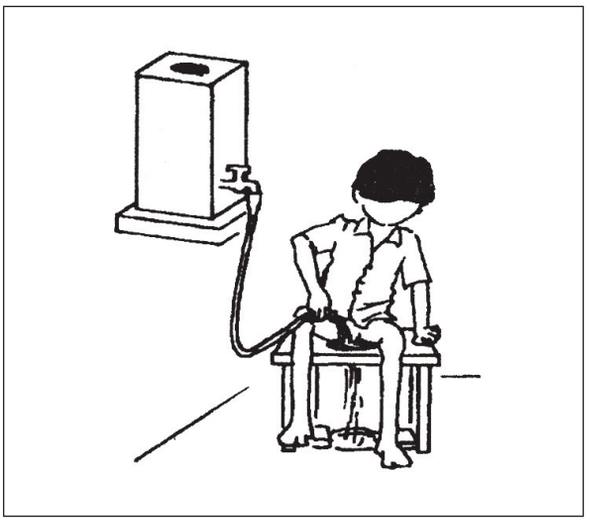


Figure 7.55. Child using a hose to wash himself.

Source: Werner, 1987 (3)

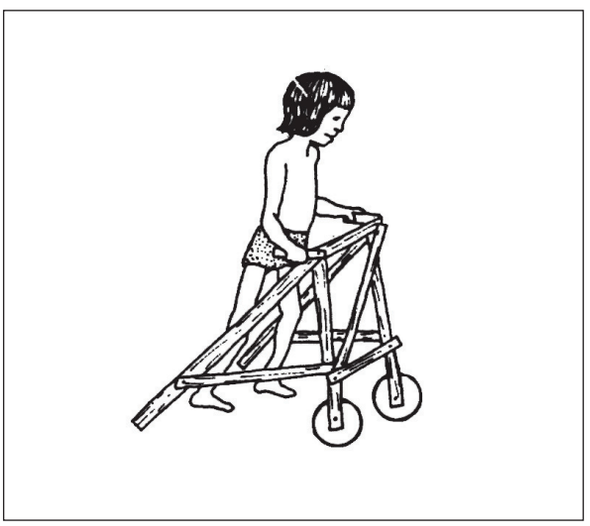


Figure 7.56. Example of a walking frame.

Source: IICP, 1999 (5)

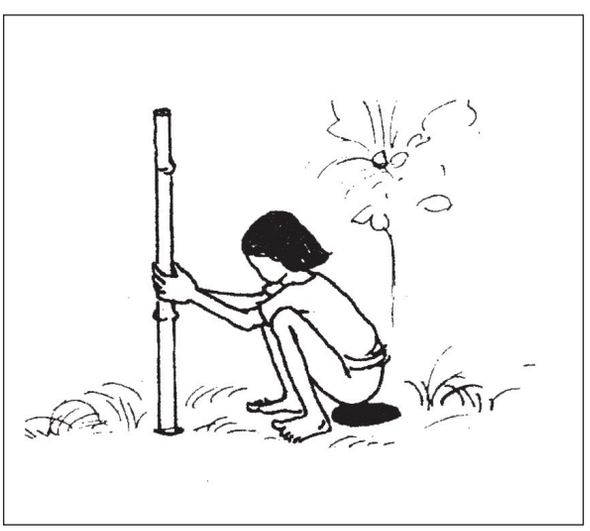


Figure 7.57. Squatting holding a single vertical pole for support.

7.8 Open defecation – support options

Where defecation 'in the open' is the usual practice, support options are still possible. This will depend on factors such as the level of independent mobility, personal preference, and whether the device needs to be mobile or can be fixed in one place. Examples of options include:

- Walking stick or bamboo pole for the user to lean on while walking to their choice of location, and to lean on while squatting – flexible option, providing minimal support.
- Walking frame, which supports the user to walk to their chosen location, and provides support while squatting (Figure 7.56) – a flexible option, providing medium support.
- One or two vertical poles fixed in the ground, at user's arm-length apart – semi-fixed option, providing medium support (Figure 7.57).
- Horizontal bar tied to two vertical poles fixed in the ground, at a suitable height for the user to hold when squatting (Figure 7.58) – semi-fixed option, providing medium support.
- A pair of bricks, placed at the desired location, about 10 – 15cm apart depending on the size of the user, to sit on while defecating. Semi-fixed option, providing high level of support. Can be used together with any of the above options.
- A tree-trunk or branch, or a rope hanging from a branch (Figure 7.59).

7.9 Assistive toilet devices

Anal cleansing devices

Quite a number of disabled and elderly people have problems with anal cleansing after defecation, because of stiff joints or poor co-ordination.

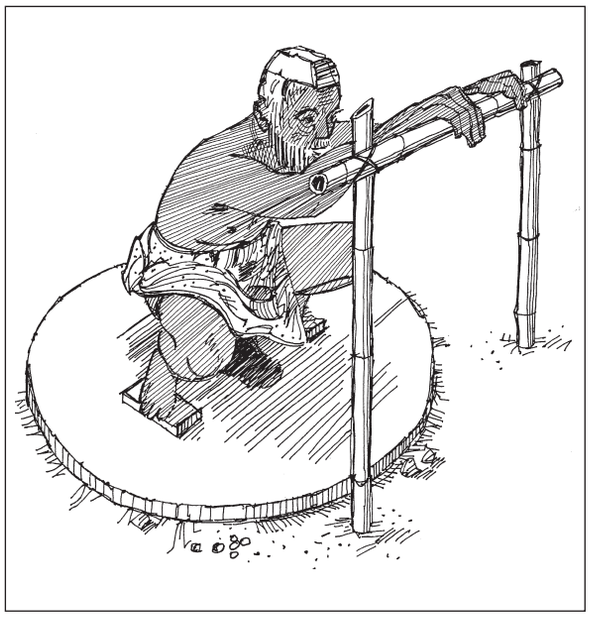


Figure 7.58. Support bar for use when squatting. *(Case-study 9.10, page 185)*

Source Werner, 1987

Figure 7.59. Child holding onto a tree branch for support while urinating.

Source: IICP, 1999

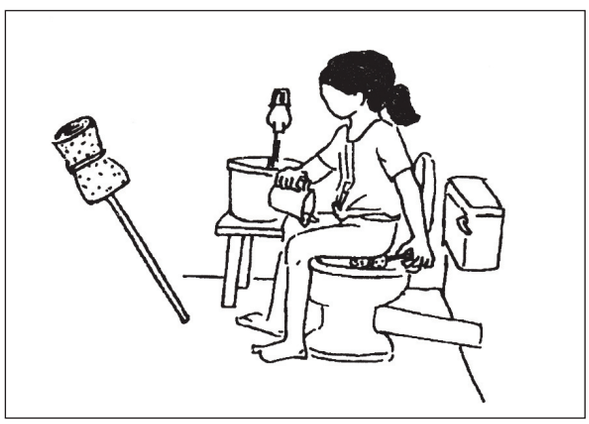


Figure 7.60. Child washing using a long-handled sponge.

Different kinds of cleaning device can be useful to compensate for the user's lack of reach. All have an extended arm or nozzle. Some are sponges with a long handle (Figure 7.60). Some are designed to grip paper or other wiping materials: Figure 7.61 shows a high-cost version, but similar 'pincers' could be made from bamboo or wood for a fraction of the cost (Figure 7.62). Where anal cleansing with water is the custom, a device that pours water and wipes at the same time is useful (Figure 7.63).

All implements need to be washed after use, and replaced regularly, to keep them as hygienic as possible.

The benefits include increased dignity for the disabled person, and personal hygiene tasks are made more pleasant for other family members to carry out.

Knee and hand protectors

For disabled people who move around on their hands and knees, unsanitary areas such as latrines are a terrible health hazard. Their hands and knees are more likely to have abrasions and open wounds, which are regularly in contact with stagnant water, urine and faeces. The result is frequent infections for disabled people. They need to protect their hands and knees from contamination.

Rubber slippers (sandals, flip-flops) can be used on the hands. Wooden 'hand walkers' have the advantage of keeping the hands higher off the ground (Figures 7.64 and 7.65), but the handle may need padding for comfort. Recycled tyres can be made into rubber pads to protect knees and leg stumps (Figures 7.66 and 7.67). Materials are low-cost, durable and easy to clean.

Source: Internet

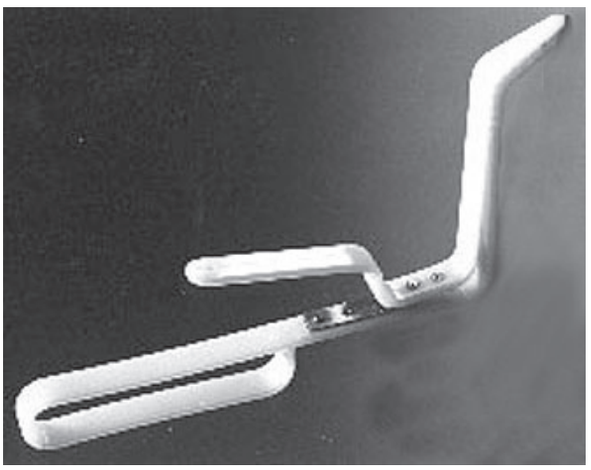
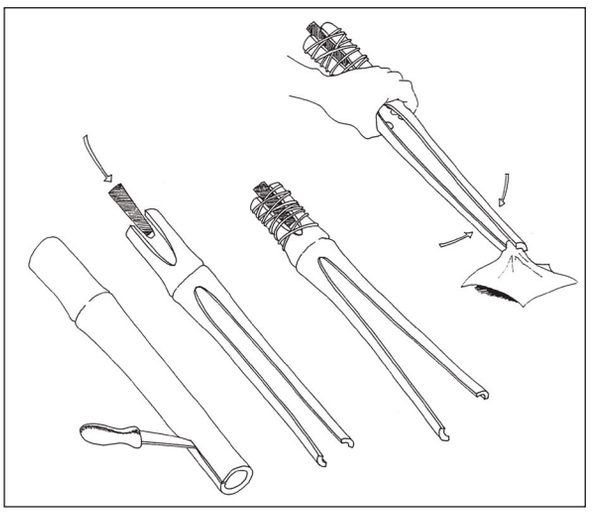


Figure 7.61. Toilet paper tongs with a spring loaded gripping device. Made of hard plastic that can be boiled. High cost.



Source: Van der Hulst et al (7)

Figure 7.62. Bamboo pincers – low-cost.

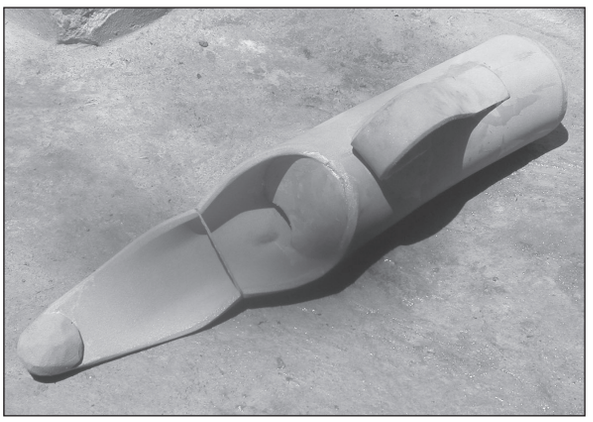
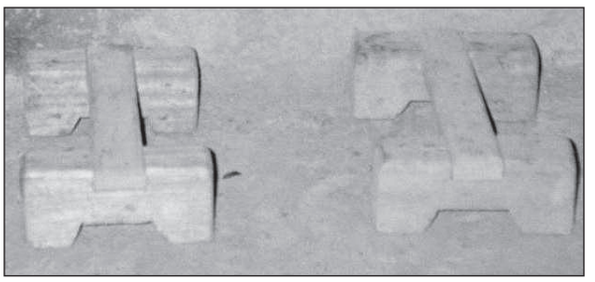


Figure 7.63. Anal cleansing device. The cylinder is filled with water, then the soft rubber 'finger' is used to clean the anal area, letting water slowly trickle out of the tiny opening.
(Case-study 9.15, page 201)



HITS Uganda

Figure 7.64. Wooden hand walkers.
(Case-study 9.31, page 247)

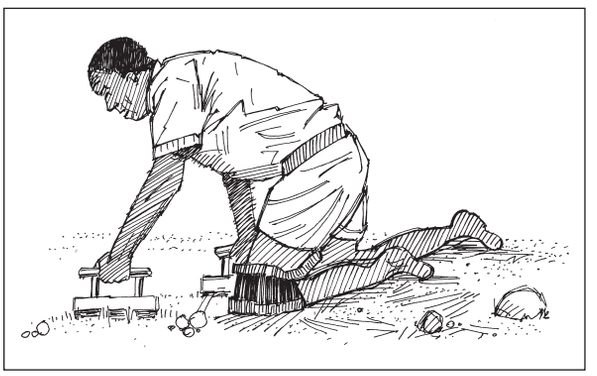


Figure 7.65. Knee protectors and hand walkers in use.
(Case-study 9.31, page 247)

HITS Uganda

Figure 7.66. Knee protector made from recycled car tyres. Rubber laces run through loops and tie around the leg to hold the pad in place.
(Case-study 9.31, page 247)

HITS Uganda

Figure 7.67. Stump protector.
(Case-study 9.31, page 247)

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