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# HOISTS

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“...which device can I use to transfer my son from the bed to the wheelchair? He is getting heavier and heavier, and I can't lift him any more!”...”Yes, we have got a hoist, but we don't use it: it takes too much time”. These are the most common things that people say when they talk about hoists. From this sentences you can guess the needs and the problems related to a patient transfer. Attendants need a handy, easy-to-use and safe device that can lighten their work. Their problem is that the hoist is bulky, unsafe and uncomfortable to the user and to the carer.

The choice of the best suitable hoist seems to be simple, but it isn't: apparently identical products may hide relevant differences. Different types of hoists are available, according to the user's need and to the environment of use.

A special issue is the sling. Various models exist for every need and disability, so a careful evaluation of a suitable product is essential.

## Mobile sling hoists

The most common type of hoist is the mobile version, equipped with a sling. Various models are available; choosing a suitable model, that responds to the user's and to the attendant's needs, is very important.

One of the main feature you should consider is the size. A bulky frame can cause difficulties in a narrow environment of use, e.g. in a flat.

Another important feature is folding or easily detachable frame; in fact, the hoist may be used outside home (at friend's home, on holiday, etc); some models are made up of extremely light materials and are very easy to transport (Figures 1-2).



Figure 1



Figure 2

Besides, a hoist should allow a comfortable transfer of the patient. Handiness and ease of movement are related to wheel diameter. Experimental trials showed that a 75" wheel needs a force of 150 N to start the movement and 550 N to resist changes in the speed of motion, while a 100" wheel needs 105 and 20 N respectively; as you can see, smaller wheels reduce the effort to move the hoist.

Another important point is wheel protection, that should prevent wheels from blocking caused by dirt (hair, dust) collection from the floor; anyway, regular cleaning of all the moving parts of the hoist is fundamental.

The choice between manual and electric lifting is another thing to consider. Manual lifting can be operated using a oleodynamic pump (Figure 3) or by a special screw (Figure 4).



Figure 3



Figure 4

In both cases a certain physical effort is still required to the carer. Conversely, an electric hoist (Figure 5) doesn't require any effort, because lifting is activated by a simple pression of the button.



Figure 5

Manual and electric models are quite similar in size but costs can vary different, even if this difference is not excessive within a cost/benefit analysis.

Some mobile hoists can turn in fixed ones in particular situations (for example, when bathtub access is required), thanks to the rotation of the lifting arm (Figure 6).



Figure 6

Other models can transport the patient in a semi-erected position (Figure 7); this is a feature you should take into account for a correct evaluation and choice of a product like this.



Figure 7

Moreover, important things to consider are brakes effectiveness, which guarantees a good stability during sling application and patient lifting, a suitable lifting capacity and the possibility of lifting the patient from the floor in case he/she has fallen over.

### Ceiling hoists

This kind of hoist allows easy room to room transfer of the patient without any bulk, thanks to a ceiling track on which the hoist can run. The track can be as long as you want and can be situated in different places, for example over the bath, the bed and the wc (Figure 8). Some models require a modification of the door jambs while some others avoid this problem with a track-to-track door-transfer system that allows the hoist motor to be extended between the rooms (Figures 9-10). As different types of environment exist, it is important that you ask for a technical survey of your home; this will help you find the best solution.



Figure 8



Figure 9



Figure 10

### Stationary hoists

If there is no room enough for a mobile hoist, or if the transfer is limited to a small zone of the house, a stationary hoist can be mounted in that position. Some models require masonry work to be fixed, some others are equipped with particular systems for the installation (Figures 11–12–13).



Figure 11



Figure 12



Figure 13

## Slings

The carer often doesn't know the correct application of the sling and he/she is afraid that the patient may fall over (Figure 14). So, difficulties in use of the sling sometimes cause a refuse of the hoist. The reason is the insufficient or lacking training provided by the hoist supplier and/or the inadequacy of the sling for the specific patient's needs.



Figure 14

A sling could be compared to a pair of shoes: what happens if the size is not the right one? If it is too small it hurts, if it's too large you may lose the shoes! The most suitable model should be always evaluated; it is extremely important that the sling is comfortable both to the user and to the attendant, otherwise it will not be used.

The choice of the sling should take into account the following elements:

1. user's pathology
2. head control
3. trunk control
4. presence of involuntary movements
5. type of transfer (wheelchair to bed, wheelchair to bathroom, etc)
6. user's physical constitution

Once chosen the sling, we advise that you make some trials and ask explanations on the correct use of the product (Figures 15-16-17-18-19).



Figure 15



Figure 16



Figure 17



Figure 18



Figure 19

The last comment on slings is about the material. It should be resistant, slightly elastic to guarantee the user's comfort, non-deformable and easy to clean.

### Hoist trolleys

This kind of hoist is exclusively used in large environments and with patients who are not able to maintain a seated position (Figures 20-21-22).



Figure 20



Figure 21



Figure 22

### Mobile hoists with solid seat

As hoist trolley, these aids are suitable to large environments with different users, like care centres (Figure 23).



Figure 23

### Swimming pool hoists

They facilitate access to those swimming pools where no structural modification has been made. These hoists are equipped with a stretcher or a seat, or with both of them, that can be alternately used according to the needs (Figures 24-25-26).



Figure 24



Figure 25



Figure 26

### Bath hoists

Because of technical problems or excessive costs related to bathroom restructuring, people often must use the bathtub despite difficulties it offers to the user and to the attendant. Besides mobile and stationary hoists, you can find hoists which can be applied to the bath rim (Figure

27) or placed inside the bathtub (Figures 28-29). These devices allows independent use to the patient once he/she is seated on it.



Figure 27



Figure 28



Figure 29

## Costs

Costs can vary widely according to the model. The price of a mobile hoist with sling ranges from 1,5 million liras (manual version) to 2,2 million liras (electric version), but it can raise up to 8 millions for higher technology products.

A particular issue is ceiling hoists: costs depend on track length and on technical features; anyway, a two-room track costs at least 8 millions, if no door modification is required.

The price of a stationary hoist starts from 6 millions, while for bath hoists it ranges from 1,5 to 8 millions for models fixed to the floor alongside the bathtub.

Sling costs, if not included, can vary from 300000 to 700000 liras.

## Hoists provision

Nowadays the “Mobile hoist with sling” is eligible for medical prescription; lifting can be manual (mechanical or oleodynamic) or electric. You can have the hoist provided by your territorial Health Service. This means that you may get a product which is not suitable to the your needs (used hoists are recycled); so, when you ask for a prescription, it is very important that you specify the features of the hoist and of the sling you need.

However, a different type of hoist may be prescribed as if it was a “Mobile hoist with sling”.

## Technical assistance

As for any assistive device, it is important that you attentively evaluate which is the most suitable model to your needs. We advise that you look for a company that guarantees good quality products and quick technical assistance in case of breakdown. Nowadays companies, according to regulation in force, must provide technical sheets of the products, user’s manual (in Italian) and guarantee.