

Welfare Technology Evaluation of Raizer

0.2 test

Performed at Home Nursing Services BIN, the
Kastanjehusene and The Peder Lykke Centre, August—
December 2015.



“It was nice and comfortable. Quick, and a good help. I’m very satisfied” – patient

“The Raizer puts the patient in focus. It all revolves around them.

Consequently, they feel more a part of things” – nurse

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Background and aims

When elderly people fall they may need assistance in getting back on their feet.

In The City of Copenhagen (municipality), Arbejdsmiljø København (“Working Environment Copenhagen”) has drawn up a number of recommendations concerning the relocation and lifting of people who have fallen. These recommendations are described in the document “Guidelines for moving patients, “The Health and Care Administration”” (Sundheds- og Omsorgsforvaltningen). In addition to these, a number of local guidelines have been created for home nursing services and care centres in The City of Copenhagen. According to the guidelines, a qualified nursing assessment of the patient’s condition shall be made in the event of a fall. Furthermore, the fallen person shall be lifted in a proper manner that ensures that staff do not risk incurring back injuries. When a person is to be lifted using an aid, two members of staff shall be involved in the lift.

Practice at Home Nursing Services BIN

According to figures from “Døgncbasen” (a 24-hour care centre), during the period 1 Jan to 31 Aug 2015 they received 3031 emergency calls relating to falls. Some of these calls went to Home Nursing Services BIN. To these can be added the falls where staff members discover a patient during a planned visit. A nursing group head has estimated that there are three falls a day on average.

When a social and health service helper/assistant discovers during a planned visit that a patient has fallen, the following procedure is followed: The helper/assistant calls the home nursing services for assistance. A nurse is sent to undertake a qualified nursing assessment of the fallen person. If the person can be lifted, an Elk is used as an aid.

When someone activates his/her emergency alarm in the event of a fall, the procedure is as follows: The alarm is sent directly to Døgncbasen. If possible, the person will speak with Døgncbasen over an intercom system. From this dialogue Døgncbasen seeks to ascertain the person's condition. Døgncbasen estimates that 50% of emergency cases involving falls involve simple falls, where the person informs that he/she has fallen but has not been injured and needs help in getting up. The other 50% of such emergency call fall cases involve an unclarified situation, such as where the fallen person is afraid and calls repeatedly for help, he/she has fallen at some distance from the intercom, so the sound quality is poor, or he/she has poor hearing and cannot hear what he/she is being asked. Following the dialogue, Døgncbasen contacts (home) nursing services and passes on the details. Home nursing services then sends two staff members, of which, one is from the nursing group. A qualified nursing assessment of the fallen person is then undertaken. If the person can be lifted, an Elk is used as an aid.

Practice at the Kastanjehusene and The Peder Lykke Centre

At the Kastanjehusene, House B estimates that there are two falls per month. At The Peder Lykke Centre, Birkegangen section, the estimate is two falls per week.

When a staff member discovers that someone has fallen or when the person in question asks for help, the procedure is as follows: A qualified assessment of the fallen person is performed by the staff member on watch duty. As a rule, two staff members shall carry out the lifting activity. In cases where the person in question can assist in the lifting, permission may be given for only one

staff member to perform the lift. It must appear on the person's aid/relocation form if only one person may assist in the lift. The staff member responsible shall continue to monitor the fallen person and make a qualified assessment before the lift. In common areas and toilets, a mobile lift with a lifting sling is used for the lift. If a person has fallen close to a ceiling hoist, this can be used.

Aims of the Raizer test

The aims of the test are to investigate the following:

- Do patients find they get rapid and reliable help in the event of a fall?
- Do staff members experience an improvement in the physical and psychological working environment?
- Is it possible for only one staff member to lift the fallen person?
- An evaluation of the time potentially saved by using one staff member instead of two and lifting with a Raizer.

Technology

The Raizer is a battery-powered mobile lifting chair, consisting of seven parts (a battery/seat, two back rests and four legs). The Raizer is assembled around the fallen person and helps them up from the floor to an almost standing position.

In total, the Raizer weighs 13 kg, made up of a battery/seat (9 kg), and a bag with back rests and legs (4 kg). There is also a small cart for transporting the Raizer. The cart can be equipped with stair climbing wheels. The Raizer is recharged using a charger connected to an ordinary mains socket. It can also be charged via a vehicle cigarette lighter socket.

The Raizer costs DKK 24,900 (excluding Danish VAT). A remote control is available as an accessory and costs DKK 970 (excluding Danish VAT). Total price: DKK 25,870 (excluding Danish VAT).

Data collection

One-to-one interviews and focus group interviews were carried out with staff members from two care centres and Home Nursing Services BIN. The interviews were performed in connection with the completion of testing of the Raizer.

One-to-one interviews were carried out with people who were lifted by the Raizer. These interviews were performed in the days after the lift in order that the fallen person could recall as much as possible about the incident. It was not possible to interview all persons who were lifted during the test period, owing to memory issues, speech problems, or because the staff did not remember to ask the fallen persons whether they wished to be interviewed.

The following persons were interviewed:

- 15 staff members (nurses, social and health service helpers/assistants)
- 5 managers
- 5 patients

Besides the interviews there are four short descriptions of lifts of fallen persons. These descriptions were written by staff members because the fallen persons were too incapacitated

to be interviewed.

Telephone interviews were carried out with a group manager from Døgnbasen about procedures concerning emergency calls about falls.

Furthermore, two physiotherapists/working environment consultants from Arbejdsmiljø København carried out an assessment of the Raizer at the Kastanjehusene on 12 October 2015. During the test no patients or staff members were present, which means that there are questions in the WTE which Arbejdsmiljø København are not able to answer.

Test participants

Patients, staff members and managers from three institutions took part in the test:

- Home Nursing Services BIN (Bispebjerg and Nørrebro)
- The Kastanjehusene, House B (care centre)
- The Peder Lykke Centre, Birkegangen and Castanjegangen sections (care centre)

The participating staff members have each performed between one and approx. twenty-five lifts using the Raizer. There was a great difference in the number of falls during the test period at the test sites and thus how many lifts the staff performed.

Evaluation

The Raizer was assessed based on four focus areas:

- Patient
- Organisation
- Technology
- Financial



Patient

Does the technology meet patient needs?

Patients find that the Raizer meets their needs for getting up from the floor if they fall. The Raizer is a positive experience for them. One person remarked: *“It was nice and comfortable. Quick, and a good help.”*

Arbejdsmiljø København’s assessment

The Raizer was tested without patients. It is assumed that the Raizer meets users’ needs for getting up from the floor should they fall.

Do patients wish to use the device?

Nearly all interviewed patients were very positive and wanted to be lifted by the Raizer should they fall in the future. One said: *“It’s one of the better lifting aids. Next time I’ll ask them [the home nursing services staff] to be lifted with it [the Raizer]”.*

The patients feel very safe and secure being lifted by the Raizer. The great majority of the staff

and managers also found that the patients would like to be lifted with the Raizer. One social and health service assistant said: "*The resident was calm and content. She was surprised in a good way when it was done. She hardly noticed that she was being lifted up.*"

Several staff members explain that there is a small group of patients who think that it hurts their backs when the back pieces are put in place and/or when they are lifted. These are people who are both normal weight and overweight. Some of these people had previously had back operations, which may partly explain their pain in this situation.

Two social and health service helpers at the Kastanjehusene doubt whether the Raizer can be used with patients with dementia. They used the Raizer on a few patients with dementia, and found that they felt insecure. The helpers are of the view that the well-known lift with lifting slings makes the patients feel secure, as they are wrapped up in the sling and can hold firmly onto the lift. It was not possible to interview these patients due to their dementia.

Are patients more independent thanks to this technology?

The Raizer is not intended to make people more independent. The fallen person can help with the assembly of the Raizer by lifting their shoulders so the staff can more easily get the back rests in place.

Does this device improve quality of life?

The Raizer does not directly improve quality of life but it can help a person up more quickly from a fall in a more dignified manner. The staff at the Kastanjehusene said that when lifting they often use a lift with a lifting sling. However, for some people this is an unpleasant way to be lifted. One staff member told us that several people had expressed the view: "*Oh no, must I now hang up in that thing?*"

Arbejdsmiljø København's assessment

The Raizer was tested without patients but it is our assessment that people can more quickly get up from the floor than when using a mobile lift. The person comes up from the floor in a dignified, sitting position, supported by the back rest, and they have contact with the floor with their feet during the entire lift. The person can follow what is happening and it is possible to stop underway should they need to rest before leaving the Raizer. It is important that an assessment is made of whether the person can leave the Raizer, for example, by means of a rollator, or can be transferred using a transfer platform, a standing lift or by means of low relocation to another chair.

Organisation

Does this technology lead to an improved working environment?

Most staff members think that the Raizer provides for a better physical and psychological working environment. They in general think that their physical working posture is better as they use less effort in supporting the person during the lift. At Home Nursing Services BIN the Raizer was compared to the Elk. They think that the Raizer is a significantly better tool, as with the Elk they have to support the person so he/she does not slide off. As one social and health service assistant put it: "*For me it can rapidly turn into a stressful moment if they say "hey, I'm sliding out". It's unpleasant. He [fallen person] could feel that there was something firm [the Raizer]*

underneath him.” When comparing the Raizer to a lift with a lifting sling, one departmental manager said: “Their [the staff’s] physical working posture is better. They still have to get onto their knees but it’s a completely different working posture, and it’s much easier than rolling the person from one side to the other [when putting a sling under the fallen person].” A social and health service helper adds: “It’s very positive that you don’t have to physically exert yourself. There are only a few buttons you need to press and then the Raizer performs almost the entire lift”.

In regards to the physical working environment there was one criticism of the Raizer and that was its weight. In the home nursing services this criticism mostly came from the staff using a bike to get around because it is heavy to transport. Furthermore, the majority of those interviewed in the home nursing services thought it was heavy to carry up to the 4th floor, for example. One nurse said: *“It’s not that I don’t want to use it, because I’m very impressed in many other ways, but its weight makes it impractical, also because we have our own bag with us. But despite the weight, it’s much better than the Elk.”*

The manufacturer has sought to handle this criticism by producing a cart for transporting the Raizer. The cart comes with stair climbing wheels for use in stairways. This cart was only supplied to the home nursing services staff at the end of the test period and was thus not tested much.

It is clear that the cart does not have the intended effect. One nurse said: *“We tried it [the cart] out on the stairs. It’s not especially easy – you have to make a lot of effort to pull it up. I wouldn’t opt to use it.”* The Raizer’s weight was not a noticeable issue at the care centres because it was not moved over long distances.

In regards to the psychological working environment, the use of the Raizer meant in most cases a less stressful work situation. One nurse remarked: *“It’s a good feeling that you feel more in control of the situation. You feel calmer performing the lift and also more professional. The Raizer puts the patient in focus – it all revolves around them. Consequently, they feel more a part of things.”* Two social and health service assistants spoke about a situation where during the evening shift they lifted someone who had fallen: *“Around dinner time we had to lift someone who had fallen. The other residents sat waiting for their dinner. The fact that they had to wait created a certain amount of unease. They all got their dinner and medications 15 minutes later than usual. It sure can be stressful to know that they’re sitting out there waiting. If one person can do the lifting while the other is with the residents, it provides for calm and security”.* The assistants think that the Raizer makes it possible to perform the lift with only one staff member.

Arbejdsmiljø København’s assessment

The Raizer will improve the working environment. It will contribute to reducing the number of lifts the staff risk having to make when someone has fallen. It will be possible to avoid manually lifting a fallen person, plus their head, upper body, legs, etc.

When using the Raizer it will not be possible for the staff to avoid working in risky working postures such as squatting or kneeling on the floor. This can cause problems for people with knee issues. Furthermore, the staff will approach the task with their backs and necks in a bent forward position, and twisting may occur and work with body joints in extreme positions. As the Raizer is comparatively quick and easy to operate, the length of time staff will find themselves in strenuous working postures is shorter than with the other methods used to get someone up from the floor, e.g. an Elk and with the lifting sling method.

However, there are some challenges posed by the transport of the Raizer. The Raizer is heavy to move over long distances. The motor component itself weighs 9 kg, and is carried using one hand. Despite having a good handle and it being possible to carry the Raizer relatively close to the body, it is still too much to carry.

Is there a will to use this technology?

There is a strong desire among patients, staff members and managers to use the Raizer. Two people receiving home nursing services spoke about their experiences of being lifted with the Raizer: *"I'd prefer being lifted by the Raizer next time. And that's also what I've told the two nurses [...]. It's the best lifting method they've used so far. I've fallen many times" and "I fell before when I lived somewhere else. Two men came and lifted me up. It took a while because I had to wait for them to come. It would be good for the staff to have the Raizer as it's better for their backs."*

One social and health service assistant said: *"It makes it all a positive experience. Even if it's difficult to assemble, it's much easier to use than other lifts. One of the people I used it with is very weakened, and it makes things easier to get something firm underneath her. So clearly it's much better. We need some more of those [the Raizer]."*

Arbejdsmiljø København's assessment

Viewed from a working environment perspective we cannot imagine other than there being a desire among the staff to use the Raizer, as this technology makes it even easier to get the person up from the floor after a fall without manual lifting.

Does the management support the use of this technology?

The interviewed staff found that there was solid backing from the management for their use of the Raizer. At all sites the management was present at the introduction to the Raizer and they often asked whether and how the Raizer would be used.

One nurse said: *"Our departmental manager strongly supports our use of it"*. One social and health service assistant remarked: *"Yes, I believe she often asks: has the Raizer been used and how. She's also the one who has the problem if you later get back pain, for example. They also tell the young students who think they can easily manually move the residents a bit, that they must not do so."*

Arbejdsmiljø København's assessment

Using the Raizer offers great potential for reducing strain on the staff, as well as injuries. The Raizer requires fewer resources to use than other methods.

Does this technology support good procedures?

The staff are of the view that the Raizer needs to be visible and easily accessible in order to create good work procedures. As one social and health service assistant put it: *"You just need to keep the parts in the bag, then everything's fine. It would be annoying to have to search around for them."*

Just as is the case with other lifts, the Raizer cannot be used everywhere. However, many staff members find that it has an advantage compared to other lifts. As one social and health service assistant put it: *"The Raizer is already in our department, so it's available. The other lifts aren't –*

we have to go down and get those. [...] We have a hanging lift which is large and bulky. The residences are too small for the large lifts. We can't get around so well with them. For example, we can't use them in the toilets as these are too small".

Arbejdsmiljø København's assessment

An easy, simple, and intuitive solution for getting people up from the floor provided it is easily accessible for the staff. Experience has shown that if it is organisationally difficult, burdensome and takes a long time to get hold of aids, the staff will use the much more strenuous solution of lifting the person manually up from the floor, with huge risks for injury as a result. The aid needs to be visible and easily accessible, and good experiences of using it need to be communicated.

If the above elements are in place, then the Raizer should motivate the staff to use it instead of lifting the person manually from the floor.

Technology

Is this device intuitive and easy to use?

The Raizer is easy and intuitive to use for the great majority of staff members. One staff member said: *"It's great that it makes a clicking sound when you put it together. That way we know it's been correctly assembled, and that makes us feel secure in using it."*

Some staff members pointed out that people who are wider than the seat can make it difficult for the staff to have space enough to attach the legs. In addition, there are some who find that the legs with the gear can be hard to put on. A bit of practice is required in order to get a good feeling for how it should be done.

Arbejdsmiljø København's assessment

Following an introduction to it, the Raizer seems to be easy to use. The remote control and motor buttons are easy and intuitive to use.

Are the Raizer manuals and guides useable?

The staff think that the accompanying quick guide and user manual for the Raizer are easy to follow and useable. One social and health service helper said: *"The pictures make it easy."* The majority of staff who have operated the Raizer once think that there is no need for the manual after that.

Arbejdsmiljø København's assessment

The accompanying quick guide is easy to understand and is concise and precise. The quick guide is simple and well-illustrated. The more comprehensive user manual is well-organised and well-illustrated just like the quick guide.

Does the device do what it is designed to do?

The Raizer can do what is expected of it. Both patients and staff members say that the Raizer seems more stable and reliable than other lifts. The Raizer has been tested and works on various surfaces such as: lino, carpet, wood floors, flagstone floor in the bathroom and smooth floors.

Arbejdsmiljø København's assessment

It can get people who have fallen up from the floor to a high sitting position, from which it is relatively easy for them to get themselves up.

Does the device work every time it is used?

The Raizer worked every time it was used. It indicates clearly both audibly and by means of an LED light on the operator panel if it needs recharging.

The staff need to know that the remote control button must be pressed in for a few seconds before beginning the lift and then pressed continuously or the lift will stop. And the emergency stop button must be pulled out.

Arbejdsmiljø København's assessment

Yes, however we have one comment to make: When testing the Raizer, the consultant followed the quick guide. She started on the left side and completed assembly on the right side. She therefore used the buttons on the right side of the Raizer. The Raizer did not work because the emergency stop was activated, which she was not aware of, because it is on the left side of the Raizer.

The remote control can only be used when the operator panel has been activated, and this is not made clear.

Financial

Does this device save staff resources?

Yes, the Raizer makes it possible to save staff resources. At present the practice is that two staff members must be present during a lift, among other things the result of current availability of lifting aids and The City of Copenhagen's guidelines for lifting and relocation. The Raizer has been designed so that only one person is needed to operate it. All those interviewed were asked if they could perform a lift of a person alone if they were using the Raizer. All have in principle said "yes", but under certain conditions:

- The person must not be seriously injured
- The fallen person shall be able to cooperate, e.g. by lifting their shoulder
- The person must be calm, understand what is going on and it must be possible to communicate with them
- The staff member needs to know the fallen person, and it must be deemed safe to perform the lift alone (care centre). For example, it can be difficult to perform the lift alone if the person has contractures
- It shall only apply to permanent staff, not temporary staff or students

Whether the Raizer is useable or not by a single member of staff depends on an assessment of the specific fall. The potential is greatest if the fallen person can cooperate, or if it is a known person who has fallen repeatedly due to, for example, alcohol abuse.

Most staff say that lifting goes quicker with the Raizer. As one evening duty nurse said: *"You don't need to go looking for help or wait for others as you can operate it very quickly yourself"*. Additionally, there can be other positive outcomes such as greater peace of mind and fewer conflicts among residents at a care centre. One social and health service assistant said: *"It would*

save us some time, as we're only two on the evening shift. If we do a lift needing us both, then there are 23 other residents who also need our help but who must wait. But if only one of us does the lift, the other one can keep an eye on the other residents. The residents get frustrated when we're not there and they can't find us. They wind each other up and conflicts occur."

The home nursing services staff are the most reserved about using the Raizer with one person only. This is due to a large extent to them not knowing how the person who has fallen is doing. There is a certain security in having two people on hand going into an unknown situation. As one manager expressed it: *"It's about knowing who you're going to help. When you don't know the outcome of the fall you have to make a fall assessment, so it can certainly be tougher to be alone."* Furthermore, the manager thinks that two people may still be needed to transport the Raizer: *"The lift itself can be done by one person, but it needs two to transport the Raizer. It's not reasonable that one person should have to carry the bag [with back rests and legs], the battery and their own bag."* One nurse added: *"We could go there ourselves to assess whether the home carer needs to come, but I wouldn't like that to be the case, because you need their know-how when the event occurs. They know the patient well, and I would like to know about the patient's behaviour and condition over the last few days, so I'm clear about what needs to be done."*

To make it possible to use the Raizer by one person requires a change in the present guidelines and procedures. The effect will be multi-faceted: The fallen person can get help more quickly, the staff member will not need to wait for a colleague, and the time spent can in some cases be reduced by going from two people to one person. Those interviewed estimated that in 75–80% of cases where the Raizer was useable the lift could be performed by a single person. One nurse commented: *"As regards the ten times I have used the Raizer, I could have performed the lift alone in most of those cases"*.

Arbejdsmiljø København's assessment

There is a direct freeing up of staff resources, but it needs to be assessed on a case-by-case basis what staff resources are required. Once the fallen person's resources have been assessed and the assessment has been made that the care staff shall help the person up from the floor, the Raizer seems to be immediately quicker to use than an Elk or a mobile lift. The basis for this assessment is, however, a situation where the person has fallen in a place where it is easy to access them and where the Raizer can be placed under them without first having to move them. If, on the other hand, the person has fallen in a place where there is little space or fallen in such a way that they are sitting half up against a wall, door frame or similar, the assessment may be different. Arbejdsmiljø København evaluates that there is no direct need for a third staff member, which can often be the case when using an Elk and a mobile lift.

Does this technology replace other aids or arrangements?

The Raizer can in many cases replace an Elk in home nursing services and the mobile lifts at the care centres. The Kastanjehusene excepted, it is thought that the Raizer can be used with 90–95% of patients at the participating test sites. As a rule, the person must be lying on their back, but lifts have been performed of people sitting up against a wall. Several staff members report that they have lifted people who could not stand. In one case the lifting team was called, which is the normal procedure. However, they managed to lift the person with the Raizer and from there move them using a regular standing and raising aid.

There is broad agreement that the Raizer is a good aid for performing lifts. Choice of lifting device

depends on where the person has fallen and their condition. One nurse said about the comparison between the Raizer and the Elk: *“With the Raizer it’s all done in a single lift. When you need to assemble it, it’s much quicker, because you sometimes need to run around looking for sockets for the Elk. [...] With the Elk you need to keep pausing and checking the person isn’t falling off.”*

Many patients, too, would prefer to be lifted by the Raizer. One patient said: *“It’s much nicer than with the Elk. The Elk gives me the feeling of sliding. It’s hard to keep your balance on the Elk. I had no balance issues with the Raizer. Despite it hurting my back, the Raizer was better [the interviewee had had a back operation]. Overall, it was less painful than with the Elk. [...] Sadly, I fall a lot. Next time I make an emergency call, I’ll ask to be lifted by it [the Raizer].”*

Arbejdsmiljø København’s assessment

The Raizer can replace both a mobile lift and the Elk. However, it is dependent on the patient's resources. It needs to be decided that the person shall be helped up from the floor and can move by themselves or can be safely moved from a sitting position using either a transfer platform or a standing and raising aid. However, if it is decided that the person does not have adequate functionality in their legs for a standing move, a mobile lift should still be used.

Can the technology be used without resource-heavy skills development?

The staff do not need resource-heavy skills development. Most find that a short introduction is enough. As one nurse put it: *“It doesn’t need a huge introduction. It’s obvious how you put it together”*. Several staff members have been responsible for introducing the Raizer to their colleagues. A social and health service assistant said: *“It was good getting introduced to it before needing to use it. The introduction by my departmental manager was enough. After that I introduced it to my colleagues on the evening and night shifts.”*

However, those staff who were not introduced to the Raizer found that it was difficult to assemble. One nurse said: *“You need a thorough introduction showing you how to assemble it and then you need to try it often so that it becomes routine.”*

The staff have to learn how to use the Raizer, just as with all other new tools. Although the Raizer is easy to use, it's important that staff get enough practice in using it before using it with patients. One patient said: *“It [the Raizer] is an ingenious invention, but they need to learn to use it before using it on us” [...] They couldn’t figure out where the legs had to go. He tried to assemble it, but the legs were the wrong way. There was a home helper — she could clearly see that the legs were wrong and they helped each other. Finally, they got it assembled.”*

Besides the introduction to the Raizer many staff wish to have employee-to-employee training, as they feel a situation with a fallen person is very different to when they are practicing with their colleagues.

Furthermore, some of them also need on-going training, as a long time may pass between helping people with falls. As one social and health service helper put it: *“The first time I used it, I felt unsure. I think that you could well need to have tried it several times before being in a real situation”*.

Arbejdsmiljø København’s assessment

The Raizer needs an introduction and it should be tried by everyone who will be using it. We do not think that the Raizer requires any great skills development. Crucial is the assessment of the

fallen person's resources as regards choice of lifting method, which in many situations is a qualified nursing assessment.

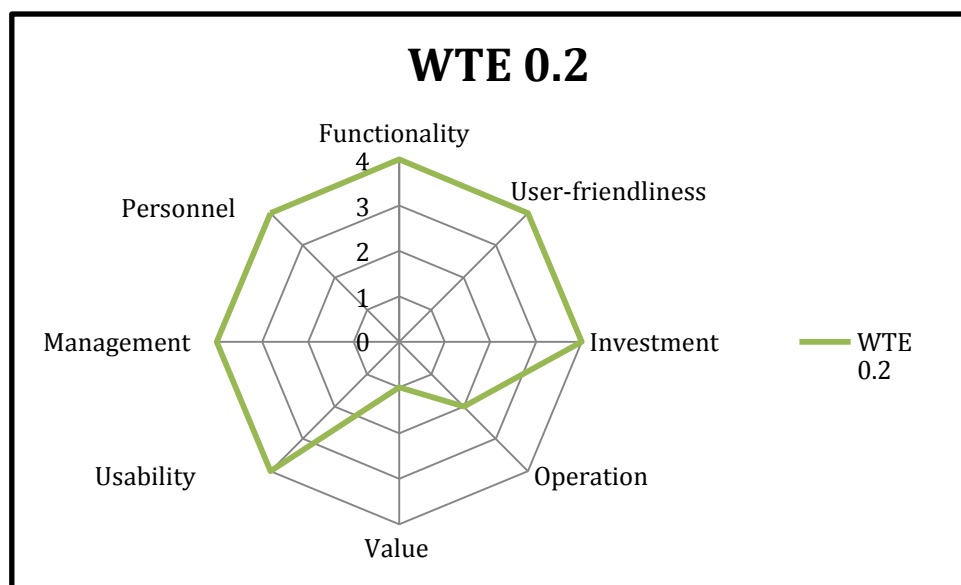
Can the technology be used without restructuring or the purchase of other products?

The answer to the above is yes. To use the Raizer merely requires enough room to undertake the lift.

Arbejdsmiljø København's assessment

Does not directly require other products or restructuring.

Conclusion



The Raizer is not intended to make people more independent or improve their quality of life. Patients are positive about the Raizer — they experience a secure lift. Many would rather be lifted by the Raizer than, for example, by an Elk or a mobile lift with a sling.

The Raizer is a fine tool which offers staff in both home nursing services and at care centres a better working environment when lifting people up after a fall. With a thorough assessment of the patient's resources risky working postures can be reduced, making it possible to avoid injury and occupational illness. The Raizer weighs a lot and is not easy to transport by bike. A good solution needs to be found for home care nurses who use bikes as their transport. In relation to the psychological working environment, the use of the Raizer results in most cases in less stressful situations.

The Raizer does not require extensive skills development, but all staff need to be thoroughly introduced to it and have tried it themselves. They need to be confident in using it, especially where the lift is being performed by one person.

All staff interviewed said that they could lift people on their own using the Raizer under certain circumstances, such as when the fallen person was able to cooperate. Those interviewed estimated that in 75–80% of cases where the Raizer was useable the lift could be performed by a

single person. Therefore, there is potential for saving resources in going from 2 to 1 members of staff. The potential is greatest in home nursing services where time can be saved on transportation, waiting time for colleagues and on the lift itself. Resources can also be saved at the care centres by one staff member undertaking the lift. In all cases a qualified nursing assessment is needed for the person who has fallen. Based on this assessment, a decision can be taken on whether the person can be lifted by a single user of the Raizer. This will require the fallen person being able to cooperate and not needing to be moved to make room for the Raizer.

If one staff member must perform the lift with the Raizer, it requires a change in existing procedures for lifting in the event of a fall. If it is a case of an emergency call, one can for example consider that the first assessment of the fall situation is made by the transfer of information from Døgnbasen to the home nursing services. If it is a simple fall, one member of staff can be dispatched to perform the lift. In many cases there will still be a need for two staff members being present, until a qualified nursing assessment has been made of the fallen person. Then in some cases one member of staff can undertake the lift single-handedly. Any “up from the floor” move requires a thorough assessment first, in order that no staff member is put in a situation where they lift the person, or adopt risky working postures. For these reasons it is of crucial importance that in relocation policies, guidelines for relocation or other written procedures it is clearly stated how staff are to handle a fall, so that no-one feels pressured into performing the lift alone.

Possible Raizer lifting scenarios by a single person:

- 1) Emergency call from the patient: A nurse is sent out to them
 1. Qualified assessment of the patient’s condition and lift by one person
 2. Qualified assessment of the patient’s condition and assistance is called for performing the lift
- 2) Nurse discovers a fall during a planned visit, makes a qualified assessment of the patient’s condition and performs the lift by her/himself
- 3) Known patient with repeated falls: Nurse drives out to the patient, makes a qualified assessment of the patient's condition and performs the lift by her/himself
- 4) An elderly person with a healthy spouse or resident children is granted a Raizer as an aid, and the spouse or children perform the lift.