

Assistive technology – devices to help with everyday living

Dementia makes aspects of day-to-day life more difficult for the person living with the condition, and in some cases it may also put them at risk. Around the home, things like repeatedly mislaying keys can be frustrating, while others like leaving the gas unlit can be dangerous. This factsheet looks at some of the devices and technologies that can make getting on with life easier for people with dementia and their carers. It also suggests the steps someone can take if they think that they, or someone they are caring for, could benefit from some of these.

Alzheimer's Society has worked with a number of other organisations to produce a Dementia-friendly technology charter that provides more information about assistive technology and how it can help people. This is available at alzheimers.org.uk/technologycharter

There are many different ways that devices can help people with dementia. This factsheet does not cover some basic items that can help people to cope with memory loss (eg a simple calendar, a noticeboard or sticky notes). For more information on these see Alzheimer's Society booklet 1540, **The memory handbook**.

Similarly, items designed for problems with mobility, continence, sight and hearing are not considered to be assistive technology. These include mobility aids, continence devices and pressure relief

mattresses. For information about these types of solutions see factsheet 429, **Equipment, adaptations and improvements to the home.**

What is assistive technology?

Assistive technology refers to devices or systems that support a person to maintain or improve their independence, safety and wellbeing. It tends to refer to devices and systems that assist people with memory problems or other cognitive difficulties, rather than those that are used to aid someone with mobility or physical difficulties. This factsheet summarises the types of device available in what is increasingly a fast-developing environment.

Many assistive technology devices are electronic, but the term does not just refer to high-tech devices. However, devices such as smartphones and tablets, coupled with widespread internet coverage, are making technology more accessible for everyone in ways that we couldn't predict just a few years ago. Widespread use of social media (such as Twitter and Facebook) also means that many people now live some of their life in a virtual environment, as well as in a more traditional face-to-face one.

All this means that the nature of assistive technology for people with dementia is changing. Technologies and 'apps' (applications or programs for smartphones and tablets) that have been developed for the general public are increasingly being used by people with dementia as well. Over time these mainstream technologies will probably replace many of the products that were developed specifically for people with dementia or disability.

Technology can be used in a variety of ways, and for a variety of purposes. It can support people in carrying out everyday tasks and activities, enhance a person's safety, support their social participation, and monitor their health. Assistive technology can help people who have problems with:

- speech
- hearing and eyesight

- safe walking
- finding their way around
- memory and cognition (thinking and understanding)
- daily living activities such as bathing and cooking meals
- socialising and leisure.

Assistive technology and dementia

Technology can give people with dementia help and support to remain independent, safe and socially involved. Carers may find it offers them support and reassurance as well.

What are the benefits?

While assistive technology may not be suitable for everyone with dementia, for some people it can bring benefits that help them to live well with the condition.

Assistive technology can:

- promote independence and autonomy
- improve confidence and quality of life for a person with dementia
- help manage potential risks in and around the home
- support a person with dementia to live at home for longer
- help with memory and recall
- support a person with dementia to maintain some abilities
- provide reassurance to carers and help them to feel less stressed.

What are the potential difficulties?

Using assistive technology has lots of potential benefits, but it also has its difficulties. Assistive technology can never replace human contact and interaction and it should never be used for this purpose. Doing so may lead to feelings of isolation and loneliness for the person with dementia. It is also important to be aware that assistive technology will not eliminate risk. It can only assist people in improving their safety and wellbeing, not provide perfect solutions.

Some assistive technology (eg telecare or remote monitoring) is focused on increasing safety and reducing risk. Products may not have been designed with the specific wants of the person with dementia in mind and, as a result, there may be less focus on this. Instead, it is expected that the person will adapt to the technology, not the other way round. Expecting the person with dementia to adapt, without listening to their views, can affect how keen they are to use the technology. This in turn will affect how successful it is.

Assistive technology can also be quite expensive, especially some of the more high-tech devices, although it is often possible to rent these. This can be helpful, as the device or system may only be helpful for a short period of time because the person's needs may change as the condition progresses.

Using devices or systems that monitor people, or that allow someone else to track them, may also raise ethical issues that should be considered. For more information see 'Ethical considerations' below.

What is available?

There are many different technologies that can be adapted to the needs of someone with dementia. Some pieces of assistive technology have been designed specifically for people with the condition but, as mentioned above, a lot of potentially helpful technology has not. Friends and family may already be using products or devices that could benefit a person with dementia.

This section gives an overview of some of the technologies, devices and services available, but does not go into detail about every type. Your local council social services, an occupational therapist or assisted living centre can provide advice and information on what is available locally.

Some types of technology may not be needed immediately, but it can be helpful to know what is available and what may be able to help in the future. Some of the devices may be used for more than one purpose, and how they are used will depend partly on the person who is using them.

Daily living

These are devices that help someone who has difficulties with memory loss, orientation or communication that are affecting their daily life.

Automated prompts and reminders

One type of reminder, based on a motion sensor, plays a pre-recorded voice prompt when there is movement nearby. For example, a sensor placed near the front door could remind someone to lock the door, or one in the kitchen could remind someone to turn the oven off.

Another kind of reminder does not detect movement but is set to play a message at a certain time. For example, someone may record a message reminding them to take their medication or telling them that they have an appointment. They could also set their phone calendar to remind them.

Technology now also allows family members or other people not living with the person with dementia to access a tablet in the person's home and support them with reminders. This means the person with dementia has a display of appointments, visitors and activities, as well as the reassurance of knowing where people who can help are and how to contact them.

Clocks and calendars

There are lots of products available to help people with dementia keep track of the day and date. Automatic calendar clocks can be helpful for people who lose track of which day it is. Many show both the date and day of the week. Some clocks also show clearly whether it is morning or evening. These can help prevent people getting confused about the time, particularly in the light summer evenings. Clock and calendar apps can also be downloaded for tablets, which you can set up to suit your own tastes and needs.

Medication aids

There are lots of different medication aids available. It may help to talk to a pharmacist about the best option. Simple boxes for pills (known as dosette boxes) have separate compartments for days of the week and times of day (eg morning, afternoon, teatime, bedtime). They can help people remember to take their medication on the right day and at the right time, especially in the early stages of dementia. Simple versions are available from the local chemist.

Automatic dispensers for pills that are taken regularly are also available. These are pre-filled – ask your local pharmacist whether they offer this service – and then locked. When the medication needs to be taken, the dispenser sets off an alarm and the right compartment opens, allowing the person to access their medication. The alarm may continue until the pills are removed from the dispenser. There are also devices that can send an alert to a friend or relative to notify them if the medication hasn't been taken, or if the device isn't working, has low battery or needs refilling.

Locator devices and solutions

These can be used to help someone find things they regularly misplace, such as keys or a wallet. A small electronic tag is attached to each item.

In one system, the person has a dedicated locator device and, if they mislay the item, they can click a button on the locator device to make the tag beep. The locator device will need to be kept somewhere obvious. These systems can be confusing and difficult to use for some people with dementia. They may be more helpful for carers, or when carers are able to support the person to use them.

An alternative (and less intrusive) approach is to attach a small tile to each item and link these to a smartphone using a simple app. One system like this stores the last place your phone 'saw' the tile. This location can then be displayed on the phone's map function.

Communication aids

These can support people with dementia to stay in touch with others. The most common type of devices are adapted telephones. These can be pre-programmed with frequently used numbers. The person can then call a friend or relative by pressing a single large button or a button with their photo on it. Some telephones are even designed so only preset numbers can be dialled. Many smartphones also offer this option using their touch-screen function.

Another option is video chat, where people talk to and see each other via a computer, tablet or smartphone. These technologies – which include the well-known Skype service – are free to use once both parties are set up, although you will need to have internet access.

For a person who has problems with speech, communicating using cards that combine pictures and text may help. Someone caring for the person might use these cue cards to offer different options for an activity, for example. The person would then point or nod to choose the one they want.

Talking mats is a popular app which takes this idea onto a tablet or computer. People can communicate how they feel, or who they want to spend time with – for example, by selecting the picture or symbol from the options offered. Talking mats is increasingly used to engage people with dementia living in care homes.

Safety

Safety is a big concern for people with dementia and their carers, especially if the person lives alone. Technology that supports someone to remain safe can help them to stay living at home for longer. Often safety devices can be linked to telecare systems (see 'Telecare' below). Technology designed to support a person's safety includes the following:

- **Automatic lights** that come on when the person is moving around. They can help to prevent trips and falls.

- **Automated shut-off devices** that can stop the gas supply if the gas has been left on, or turn off a cooker if it's been left on. These may need to be installed, which may cost money, and there may be costs for reconnecting the gas supply.
- **Water isolation devices** that can turn off a tap if it's left running, preventing flooding.
- **Special plugs** that allow users to choose a certain water depth in a sink or bath. If the water goes above that level, the plug opens and the water drains. They can also include a heat sensor that changes the colour of the plug when it reaches a certain temperature. This can help prevent floods and scalds.
- **Fall sensors** that can register if a person has fallen.
- **Telephone blockers** that can be used to stop nuisance calls.

Safer walking

People with dementia may have a need to walk about. Often this is not a problem for the person – they may find it a positive experience, and walking can have both physical and psychological benefits for them. However, there may be times when walking does present risks, such as the person getting lost or leaving the house during the night when they are not appropriately dressed. Carers may find this walking behaviour difficult.

Some people may consider safer walking devices or apps. These need to balance the aim of keeping a person safe with restrictions to their privacy. Types of safer walking device include:

- **An alarm system** – This provides an alert when someone has moved outside a set boundary (eg the front garden). These devices cannot locate a person.
- **Tracking devices or location monitoring services** – These use satellite or mobile phone technology to locate and track the person. The types of devices include watch-based devices, smartphone apps, key rings and pendants. These are generally used when there is a particular risk of the person getting lost or going missing.

The location of the person carrying the device can be viewed on a computer, tablet device or mobile phone. Many tracking devices also allow the person to press a panic button if they get lost. Many new mobile phones also have location finder technology. This could be considered instead of a stand-alone tracking device. When purchasing a device to enable safer walking, it is important to consider how reliable it is. For example, will it work when the person is indoors, and how often will it need charging?

The signal required for tracking devices to work can be patchy, which means the device may not work in all areas. Some of the devices can be difficult to use (especially for a person with dementia) and the person may not want to wear a device or risk forgetting that they should have the device with them. The person with dementia may also not be able to respond appropriately when an alert happens (eg being told to stay where they are).

Safer walking technology can enable some people with dementia to have greater freedom and independence, and can ultimately reduce the use of unpleasant solutions such as drugs and physical restraints. It may also mean that carers worry less about the person's safety. The use of safer walking technology has many possible benefits, but it also raises important ethical questions around capacity and consent (see 'Ethical considerations' below).

Telecare

Telecare usually refers to a system or devices that remotely monitor people living in their own home, enabling them to access support or response services when necessary. The various pieces of technology are connected via a telephone line or over the internet. Telecare systems can include community alarms, sensors and movement detectors, and video conferencing.

Telecare systems are often used to support independence and personal safety. They may help to reduce the risks associated with living alone, and can be useful for people living with dementia. Telecare can provide assistance to the person to help them to do

things (eg a phone call to remind them to take their medication). It can also alert others of dangerous situations (eg if they were to have a fall or leave the gas on). Sensors around the home can be linked to a nominated person or call centre. The system monitors a person's activities and can trigger an alarm to the person or call centre if a problem occurs. The alarm can also be triggered by a person pressing a panic button or community alarm.

Telecare has traditionally been provided by a community alarm or monitoring service provided through social services. However, it is now possible to set it up privately.

Telecare comes in various forms and may be used for a range of situations:

- **Community alarm** – This is a pendant worn by the person that they press if they become worried or if there is an incident (eg they have a fall). The person will need to remember to wear the pendant.
- **Medication reminders** – An automatic pill dispenser can be linked to a call centre. If the medication isn't taken at a set time, an alert is raised and the person is contacted to remind them to take their medication.
- **Floods** – Sensors can be fitted on skirting boards or floors in the kitchen or bathroom. If taps have been left running and cause a flood, the system will shut off the water and raise the alarm.
- **Extreme temperatures** – Sensors will send a warning signal if the temperature is very low, very high, or changes suddenly. This can be useful in the kitchen – for example, to detect a pan that has boiled dry. It can also detect if the temperature in a room is low enough to pose a risk of hypothermia.
- **Absence from a bed or chair** – A sensor is placed on a bed or chair. If a person gets up and doesn't return within a pre-set time, or if they don't get up in the morning, an alarm is raised.
- **Getting up in the night** – Sensors placed by the bed can be used to activate an alarm when the person gets up in the night – for example, to alert someone to help them get to the toilet. Similarly, lights with movement sensors can switch on if a person gets out of bed or enters a room.

- **Leaving the home** – A system may be set up to trigger a response if the front door is opened, perhaps during specified times (eg at night), or if a person does not return within a specified time.
- **Devices to monitor daily activity** – These are unobtrusive movement sensors that can oversee a person’s activity in their home over a period of time. They can sometimes help relatives or community services get a better idea of a person’s activity during the day and night. This can allay fears that the person with dementia is not coping well, and may help others to step back and not become too closely involved. Alternatively, it may show that the person needs more assistance and can be used to start discussions about the type of support that may help. An alert can easily be set to tell the person monitoring if something unexpected happens, such as a visitor at an odd time or the person leaving their home in the middle of the night.

More information on what is available in the person’s local area will be available from their local authority, local assisted living centre, or by searching online.

As with tracking devices, using telecare systems poses ethical challenges (see ‘Ethical considerations’ below).

Devices to support engagement, social participation and leisure

While assistive technology has traditionally been used to help people with dementia remain safe and continue with everyday activities, it is increasingly being used to support a person’s social life and provide opportunities for activities and enjoyment. This can help them to maintain their relationships, skills and wellbeing.

With the increasing availability of tablets, smartphones and apps, there are many new options to help people stay in touch and engage with those close to them. They also offer opportunities for activities, which is important for supporting the wellbeing of a person with dementia. These can include reminiscence, creative activities (eg music), video calling and life story work.

Other types of assistive technology that can be used for leisure include:

- **digital photoframes** – these can be programmed to show a slide show of photographs and may help support conversation with others
- **puzzles and games**
- **sensory stimulation** – devices that use touch, sound and light (eg a sensory cushion)
- **electronic games and apps** (eg a video-sharing app to support discussion about the past)
- **mental stimulation** (eg ‘brain training’ devices)
- **easy to use equipment** (eg music players and radios).

A tablet used to deliver these can itself become a topic of conversation, and so lead to more interactions for the person. This is particularly true for ‘intergenerational’ interactions, where the shared experience of the technology gives a younger person a connection that might otherwise not have existed.

Finding the best solution

It is important that anyone considering assistive technology has clear information on what is available. The bodies listed in ‘Other useful organisations’, as well as the companies that make the devices, may be able to help with this.

People respond differently to different devices, and the products should meet the needs of the individual as best they can. Choosing a piece of assistive technology is not always easy, but it is important to find the best solution. Decision-making should be shared, and the person with dementia should be supported and involved as much as possible in discussions and choices.

If someone has been using a device (eg smartphone or tablet) before they developed dementia, then a solution based around this technology may be easier for the person to adopt.

Many devices can be bought independently, but before doing so it is advisable to seek professional advice. An occupational therapist, adult social services assistive technology or telecare team (contact your local council), or a local assisted living centre will all have expertise in this area. Your GP or social worker is less likely to have the detailed expertise themselves, but they should be able to help you find an expert and get an assessment. Even if these professionals can't offer the devices directly, the person with dementia may find that they are eligible for an assessment, or are able to get help in finding the best device or financial assistance.

Things to consider when looking for assistive technology

There is no one-size-fits-all approach to choosing assistive technology – what works for one person may not work for another. For example, one person might find it helpful to have a recorded message reminding them to take their keys with them, while another person might find this confusing. It can help to think carefully about the person's specific needs and capabilities, and consider what the benefits of using the technology might be.

It is important to make sure the technology is supporting the person and not restricting them. It is also a good idea to look at the person's living space and see if there are adaptations to the environment that may help (eg making sure there are good lighting levels and removing trip hazards). For more information see factsheet 429, **Equipment, adaptations and improvements to the home**.

When choosing assistive technology, some things to consider include:

- whether there is definitely a need for assistive technology, or whether there is another solution
- the degree of memory loss and types of difficulties the person has
- the person's needs, preferences and ability to use devices, and how these might change over time
- whether the person has any other conditions that may affect how they use the technology (eg poor sight or hearing)
- the level of support the person can rely on

- how well the technology will fit in with the person's usual routines
- whether the technology requires a phone line or internet access
- the cost of the technology – some devices are expensive, but the cost of mainstream technologies are falling in many cases.

You can also find a list of questions to consider when choosing a solution in the Dementia-friendly technology charter.

It is also worth being aware that the earlier the technology is introduced, the more successful it is likely to be. This is because the person will have more time to get used to it before their dementia gets worse. Some people with dementia choose to refer to the use of assistive technology, particularly tracking technology, when they are documenting their wishes for the future (advance care planning).

Ethical considerations

Assistive technology can have considerable benefits for people with dementia, but it also has some potential negative aspects, and there is a risk that it can be misused.

It is important that assistive technology is always used for the right reasons. It should be primarily for the benefit of the person with dementia – to enhance their independence, safety and daily living. In practice it will often also benefit the carer, but it is important that the person's needs are put first. It is also important that they are clear about the purpose of the technology and how they might benefit from it.

Assistive technology should not be used simply as an easy way for a carer to monitor a person with dementia without their consent or interests being considered. Nor should it be seen as a replacement for the human interaction that carers, friends and relatives provide.

Consent is particularly important. When choosing to use assistive technology and selecting the systems or devices to use, the person with dementia must be involved in any decisions, and their consent must be sought and gained, wherever possible. In some cases this

may not be possible, if the person doesn't have the ability to make decisions for themselves (known as 'capacity'). In these cases, decisions need to be made in the person's best interests, and must also be the least restrictive option.

This is a particular issue with safer walking technologies. If someone doesn't have capacity to consent to carrying such a device, the carer may not explain the true purpose of it or may conceal it (eg in clothing). This is a threat to the person's privacy, and is therefore not the least restrictive option.

The Mental Capacity Act (2005) sets out the law around making decisions in these situations, and also provides some guidance on how people can make them. For more information see factsheet 460, **Mental Capacity Act 2005** and factsheet 484, **Making decisions and managing difficult situations**.

Ultimately, nobody should be forced into using technology they don't want, and technology should only be used when it's needed or wanted. Each person's individual needs should be considered carefully when weighing up the pros and cons of any device.

To see an extensive range of assistive products, including both assistive technology and equipment and adaptations, see Alzheimer's Society's Daily living aids catalogue at shop.alzheimers.org.uk/page/daily-living-aids-catalogue/

Other useful organisations

AT Dementia

Trent Dementia Services Development Centre
Institute of Mental Health
University of Nottingham Innovation Park
Jubilee Campus, Triumph Road
Nottingham NG7 2TU

T 0115 748 4220

E info@trentdsdc.org.uk

W www.atdementia.org.uk

An online information resource on assistive technologies (including telecare) for people with dementia. Includes a self-help guide offering advice about assistive technologies – see asksara.dlf.org.uk

Disabled Living Foundation

Ground Floor, Landmark House
Hammersmith Bridge Road
London W6 9EJ

T 0845 130 9177 (helpline 10am–4pm weekdays)

E info@dlf.org.uk

W www.dlf.org.uk

Charity that provides information about finding simple solutions, such as mobility aids. Offers a loan library of simple electronic aids that people in England can borrow for two weeks to see if they work. (See www.dlf.org.uk/library)

Foundation for Assistive Technology (FAST)

302 Tower Bridge Business Centre
46–48 East Smithfield
London E1W 1AW

T 0300 330 1430

E info@fastuk.org

W www.fastuk.org

Charity that works with the assistive technology community to get well-designed, useful inventions on to the market faster. Provides an online database of assistive technology research, events and contacts.

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This factsheet has also been reviewed by people affected by dementia.

A list of sources is available on request.



Alzheimer's Society National
Dementia Helpline

England, Wales and Northern Ireland:
0300 222 11 22

9am–8pm Monday–Wednesday

9am–5pm Thursday–Friday

10am–4pm Saturday–Sunday

alzheimers.org.uk

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