

## Safe at home – Home sensors, activity tracking and remote monitoring

For those of us who would like to remain independent and continue living at home but who also need a little extra help and reassurance, simple Technology Enabled Care (TEC) solutions can often be used to provide that extra peace of mind for ourselves and our loved ones.

The following devices can all be used to improve safety in the home and if connected to Telecare or pager systems, some can also send alerts to family, friends, or carers to automatically let them know you may need help (see Telecare for more details). Some newer types of TEC can also link directly to smartphone apps or web-based dashboards, so that loved ones or carers can see you are safe.

### Household Sensors

Household sensors are commonly used to help detect gas, smoke, carbon monoxide, extreme temperature, and floods, but can also be used to detect movement, epileptic seizures. Sensors can also be used to help reduce the risk of falls by automatically turning on lights when a person walks past one during night or for example, can alert a carer or family member when a person gets out of bed or goes outside at night.



**Movement sensors**, also known as PIR (passive infrared sensor) sensors, help to detect movement by recognising when someone passes by an infrared beam of light. Most can be linked to Telecare or pager systems depending on your needs. They are placed at key points within your home and will send an alert when triggered or if not triggered for an extended length of time. PIR sensors are particularly helpful if you tend to wander or get out of bed at night and are at risk of falling. And do not worry if you have pets, the sensors can be positioned so an alert is not accidentally triggered!



**Door sensors** can be used to help ensure your safety by raising an alert if you go through a door, for example leaving the house at night. The sensors can be used on both internal and external doors and can be connected to a Telecare monitoring service, a pager system or via a smartphone app. Some can be set-up to play pre-recorded messages e.g., to remind you to take your keys and mobile phone and lock the door behind you). They are particularly useful if you are likely to leave home and you are at risk of becoming lost or you are worried you might fall if you try and do things unaided e.g., getting out of bed at night).



**Automatic lights** can be programmed to come on when they sense movement and go off again when no movement has been detected for a set amount of time. They can be particularly useful for people who are at risk of falls, especially if they tend to get up at night and struggle to find the light switch. The lights can be set-up to come on automatically and programmed to turn off after a set amount of time. You may have come across similar devices in people's garden as they are commonly used to light-up pathways at night.

### **Automated shut-off devices**

These devices can be useful to people with memory loss or cognition problems, but you will need to have them installed which may cost money. Check with social services or your local fire service for more information as there may be local schemes available or organisations who can do this for free.

**Gas isolation devices** can help to prevent a risk of fire or carbon monoxide poisoning by automatically stopping the gas supply or turning off a cooker if the gas has been left on.

**Water isolation devices** can help to prevent flooding by turning off a tap left running.

### **Activity monitoring systems**

Activity monitoring systems can be used to track your movements and detect changes in daily activity or behaviour that can help to highlight any potential deterioration or increased risk (e.g., risk of a fall) and facilitate preventative action. Activity is recorded throughout the day and the data is displayed as activity charts that show your daily activity. This can be accessed via simple web-based dashboards or smartphone apps, with any changes in behaviour identified and advised to loved ones or care providers. Activity monitoring systems are non-intrusive and do not use cameras to monitor or record your activity but can offer a simple solution to provide reassurance to you and your loved ones and help you remain living independently at home for longer.



**Sensor-based activity monitoring systems**, use a series of motion sensors to monitor and track activity. They can be particularly useful in helping to assess how well a loved one is managing at home on their own (e.g. after a stay in hospital) and when used as a pre-assessment tool, they can help in identifying activities the person finds challenging, meaning appropriate help and support can be provided where needed and often before an incident occurs.

Sensors are easy to install and can be used to monitor and track activity such as how often you use appliances in your home (e.g., kettle, microwave, fridge), how frequently you visit certain rooms (e.g., kitchen, bathroom, etc.), or how often you leave the house.

### **Remote monitoring systems**

Remote monitoring systems are new to the TEC market and aim to provide round-the-clock “live” monitoring of a loved one whilst at home or in a residential placement. Some systems currently being reviewed and assessed by Bristol City Council do not use cameras as standard and instead use sensors that will either “look” (radar imaging) or “listen” (acoustic monitoring) for specific incidents such as a fall. Acoustic monitoring can also be linked to cameras, so that should an alert be raised, the monitoring team can access the camera to check on you and provide an appropriate response without disturbing you unnecessarily. Not all these systems will be suitable for use in your own home but for more information, please see “New TEC.”