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# How fall alarms work





# A guide to fall alarms

Some Taking Care personal alarms include built-in fall detection. These fall alarms make an alarm call to our Emergency Resolution Team automatically when a hard, uninterrupted fall is detected.

Like all fall alarms on the market, there are some types of falls that will not trigger a call from your Taking Care fall alarm. In this guide, we look at the benefits of fall alarms, how they work and under what circumstances a fall may not trigger an alarm call.

## The benefits of having a fall alarm



Fall detection is a potentially life-saving feature in an alarm. If someone is unable to press their alarm button to get help in the event of a fall, for example, if they are knocked unconscious, too disorientated to seek help or have a serious injury, the fall alarm will automatically detect the fall and make an alarm call.

This is particularly valuable to someone who lives alone or has a history of falls. An immediate response is crucial, especially if the person is unable to get up or call for help themselves. A faster response can prevent medical complications and improve health outcomes.

Without assistance, someone may not be found until a carer visit or welfare check. In some instances, this can be days. Hypothermia, dehydration, blood loss and fractures are a real danger and unfortunately falls can be fatal. Data from Age UK's "[Later Life in the United Kingdom](#)" shows falls result in the equivalent of thirteen deaths per day in the UK.

Taking Care's fall alarms are monitored 24 hours a day by a specialist Emergency Resolution Team in the UK. There are no phone numbers to remember in the event of a fall and the Emergency Resolution Team answer alarm calls any time of the night or day.

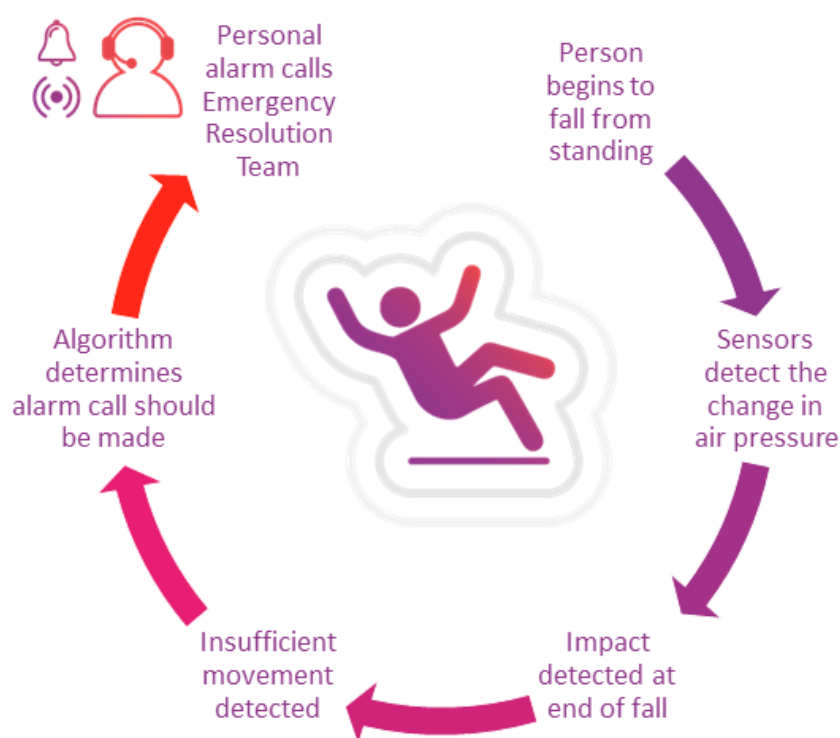
*“The reassurance this service provides is invaluable to family members and their older loved ones, providing the confidence to remain living independently and safely at home for longer.”*

## How fall detection works

A fall alarm consists of sensors, typically accelerometers and gyroscopes, and a sophisticated algorithm designed to react to a sudden free fall from a standing position, followed by a significant impact and no movement.

The algorithm is designed to balance sensitivity with practicality. Too many false alarms from moving around or sitting down would be impractical and counter-productive, disrupting the wearer and discouraging them from using the fall alarm.

### What happens when someone falls?



When someone falls from a standing position, several things quickly happen to detect a fall:

- The sensors detect the change in air pressure from a falling motion.
- The algorithm determines if an alarm call should be made, typically using the strength of the downward motion, the change in air pressure, the impact or shock at the end of the fall and the immediate period after the impact. If there is insufficient movement after impact, this confirms a fall has occurred and is not a false alarm.
- When the falls criteria are met, the fall alarm automatically makes an alarm call without any intervention required.

The Emergency Resolution Team will answer the alarm call and will know who is calling and where they are. They will have access to any medical information shared and nominated emergency contacts. The Emergency Resolution Team will speak with the alarm user directly through the alarm equipment and will call their contacts or the emergency services, depending on the nature of the call or if there is no response from the alarm user.



## Why a fall may not be detected

Certain types of falls are less likely to trigger the fall detection algorithm criteria.

This is true of all fall alarm products available and for this reason we always recommend pressing the button on the fall alarm pendant to call for help if possible.

- Some types of falls may not be detected, such as slumping or falling from a sitting position, or if the fall is broken, such as if the wearer holds on to something.
- Wearing the fall alarm inside clothing, including a jumper or coat, can restrict the sensor's functionality. The fall alarm needs to move freely to detect a fall and clothing can restrict this. Therefore, your fall alarm should always be worn outside of clothing.
- Falling backwards may not be detected because the pendant is protected from the change in air flow and pressure. For this reason, backward falls are less likely to be detected when the pendant is worn around the neck.
- Similarly, wrist-worn fall alarms may be affected if the arms are cradled to the chest or covered by clothing during a fall.
- The height of the person can also affect whether a fall is detected. The algorithm may not trigger an alarm call if the person wearing the fall alarm is less than 1.2 metres / 4 feet tall.

## Product-specific limitations



The Taking Care Anywhere location-aware pendant must be worn around the neck for the fall detection algorithm to work as intended. This is because the pendant must be able to freely detect the movement of a fall.

Mobile devices, including GPS devices such as the Taking Care Anywhere location-aware pendant, should not be worn around the neck if you have a pacemaker. For this reason, if you have a pacemaker, we will disable the fall alarm functionality when you order Taking Care Anywhere and you should not wear the device around your neck.

## False alarms

False alarms can still be triggered, despite the clever technology. Rest assured, the Emergency Resolution Team will answer all calls and a false alarm is a good opportunity for our team to check the equipment is working and the alarm user is well.

A false alarm may be triggered by:

- Movement that is similar to a fall
- Not wearing the fall alarm as recommended and in a way that makes it more prone to misinterpreting movement

“Very rarely, a false alarm may be due to faulty equipment. If you have any concerns, let us know and we will replace the fall alarm if it is not working correctly.”

## How to cancel a fall alarm

Fall alarm calls can be cancelled by the alarm user.

**Taking Care Anywhere:**

- The Taking Care Anywhere location-aware pendant has a pre-call sequence when a fall is detected



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- The pre-alarm will sound for 10 seconds, announce “Fall detected” and the pendant will flash
- This gives the alarm user the opportunity to cancel the call by pressing and holding the button on the front until the location-aware pendant announces “Cancelled”

#### **Digital Fall Alarm:**

- When the Digital Fall Alarm detects a fall, the pendant will beep as it makes the alarm call.
- The call can be cancelled during the first 15 seconds by shaking the pendant from side to side until it is silent.

## **Frequently Asked Questions**

### **Can I test the fall alarm or simulate a fall so I know that it works?**

We do not recommend this because of the sophistication of the fall detection algorithm. Testing your fall alarm quarterly by pressing the pendant button and speaking with the Emergency Resolution Team is sufficient.

### **Can the sensitivity of the fall alarm be adjusted?**

It is not possible to adjust the fall alarm sensitivity yourself. We recommend contacting our Customer Services Team if the fall alarm is too sensitive. If the device is faulty, we will supply a replacement fall alarm free of charge.

### **Do different fall alarm products vary in sensitivity?**

Different fall alarm products may use slightly different algorithms and sensors, however most work in a similar way. By testing new products as they become available, we are confident our fall alarms provide the best possible fall detection.

### **Do I need to keep the fall alarm pendant clean?**

It is normally sufficient to wipe the pendant with a dry cloth in most circumstances if it is dirty. Water or cleaning products may damage the pendant.



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## How often should I test my fall alarm?

We recommend that all our personal alarms are tested quarterly by pressing the pendant button and speaking with the Emergency Resolution Team. There is no need to perform any additional tests with a fall alarm. We suggest choosing an easy to remember date, such as the day of your birthday or another memorable event.

## Do fall alarms need time to learn how the wearer moves?

No, fall alarms work straight out-of-the box and do not need to be specifically configured for each person.

# Fall alarm features

- **Personal alarm button:** Fall alarms also have a button that can be pressed to call for help, just like a standard personal alarm. Fall alarms can be used for any emergency, not just for falls.
- **Different wearable options:** Fall alarms may have different wearable options and straps, such as around the neck as a pendant or on the wrist like a watch.
- **Where they work:** In-home fall alarms work in the home and garden, typically up to 300 metres / 984 feet from the base unit which is used to make an alarm call. Out-and-about fall alarms use mobile networks such as 4G and will connect to the strongest available mobile network. This provides excellent coverage and they will work anywhere in the UK where a suitable mobile network is available.
- **Talking pendant:** An in-home fall alarm will have a powerful speaker and microphone built into the base unit. With an out-and-about fall alarm, you can speak directly with the Emergency Resolution Team through the pendant.
- **GPS-location aware:** An out-and-about fall alarm will include GPS technology. This allows the Emergency Resolution Team to see the GPS coordinates of the device when an alarm call is made so they can direct help quickly and accurately. Out-and-about fall alarms may include other GPS functionality, such as geo-ringfencing, so family members are alerted when the device moves outside of pre-set locations.
- **Ease-of-use:** Fall alarms are designed to be easy to use. They normally have one easy to press button to call for help and a way to cancel an alarm call in the event of a false alarm.
- **Comfort:** Fall alarms are comfortable to wear so they can be worn all day.
- **Long-battery life:** This is important for reliability. An in-home fall alarm will not need charging as the battery will last for 2 years with typical use. The alarm's built-in self-test will alert our Emergency Resolution Team when the battery is running low and we will arrange to replace it free of charge. An out-and-about fall alarm battery will last up to 2 months and the device will have low battery notifications.
- **Water resistance:** Falls are common where it is slippery such as bathrooms. Many fall alarms are water resistant so they can be worn in the shower where the risk of falling is higher.



# We're here to help

Our Customer Services Team are happy to help if you have a query about your fall alarm or any of our products.

Call **0800 085 7371** or visit [www.taking.care](http://www.taking.care)

You can speak with our Customer Services Team Monday – Friday, 9am – 5pm.

As we get older, we should be able to continue doing the things we love and living life the way we want to. Our articles and guides are available to read online or delivered straight to your email inbox.

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