



WHITEPAPER

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# Mobile social alarms provide freedom and safety for older people

# Foreword

It is estimated that there are currently 150,000 people living with dementia in Sweden (Swedish National Board of Health and Welfare, 2017). This condition can create major and painful turmoil in both those affected and their loved ones.

Life is rarely the same once someone has been diagnosed with dementia. Many cognitive functions such as orientation capacity, memory and judgement are affected. This is a contributory factor to why many people with advanced dementia often get lost and are reported missing. There are frequent reports in the news about searches being initiated.

In 2020, the Swedish Police produced 25,686 incident reports concerning missing persons (Swedish Police, 2021). 24% of those reported as missing each year are people with dementia (Söderberg & Wikström, 2019), and a disappearance can potentially be life-threatening.

Every year, the police carry out at least 300 rescue operations to search for people who have disappeared under such circumstances that there is a danger to their life or health (Swedish Police, 2019). That means one person being searched for nearly every day. These searches consume a lot of resources. Relatives in particular are plunged into great uncertainty, and the person affected experiences much disorientation.

This may sound gloomy, but there are glimmers of hope from solutions that could assist with disappearances and facilitate the search process through mobile social alarms and GPS watches.

In this white paper, Careium provides insight into the latest research in this area and discusses how search initiatives can be further developed in the future, with the aid of GPS alarms. Mobile social alarms such as Careium Secure® 480 and Careium 450 pave the way for senior citizens to be able to lead an independent and active life for longer. The alarm also increases the chances of being found quickly if the wearer gets lost.



## Careium 450

Careium 450 is a mobile social alarm with GPS positioning that provides peace of mind for both senior citizens who need extra supervision and their relatives. The user can activate an alarm when needed, and the product is also fitted with alarms that are triggered automatically, e.g. in the event of a fall or when the user leaves the home or a predefined safe zone. Multiple safe zones can be defined, and alarms can be sent to multiple recipients or to an alarm receiving centre. The Careium 450 is easy to carry at all times, either in the pocket or around the neck, and thanks to its waterproof properties (IP67), the user does not have to take it off when they take a shower.

- GPS positioning and safe zones
- Social alarms both in and outside the home
- Self-activated and automatically triggered alarms, also in the event of a fall



- Incoming and outgoing calls
- Tracking via A-GPS/GLONASS
- Location-based alarms (Geo-fence)

## Careium Secure® 480

Careium Secure® 480 is a water-repellent GPS watch with an attractive design, sophisticated tracking features and communication capabilities to enhance personal safety. The user can easily trigger an alarm in an emergency or when help is needed, by pressing the watch's alarm button. Some alarms are triggered automatically based on geographical location, e.g. when the user leaves home, leaves a predefined safe zone (known as a geo-fence) or if the battery is running low. The watch can be programmed with up to eight different safe zones and will send an alarm if the user leaves a safe zone.



## What problems do the Careium 450 and Careium Secure® 480 solve?

Regular physical activity is especially important the older a person becomes. Not only does it have a significant positive effect on memory, focus and reaction times, but it has also been clinically proven that physical activity reduces the risk of depression among senior citizens – both perceived and diagnosed (Swedish Public Health Agency of Sweden, 2016). Now, thanks to the mobile social alarm, users and their loved ones can enjoy greater peace of mind.





## 1. Sharp increase in number of searches

Missing People Sweden is a Swedish non-profit organisation that helps the police and relatives to organise searches for missing people.

In 2020, the organisation recorded an unwelcome record. Never before had so many searches been conducted around the country. During the year, Missing People Sweden organised a total of 454 searches, and increase of 58% on the previous year. One factor believed to be behind this increase in the impact of the pandemic on mental health (*Dagens Nyheter* 2021).

Despite the fact that so many people disappear every year, there is not enough research on the subject. We do not know at present how much a search process costs. Nor how proactive and preventive measures should be shaped in the care of people with dementia. A comprehensive research review of the subject is calling for more collaboration and increased methodology in order to develop the use of GPS systems, alarms and other technical aids.

**MISSING  
PEOPLE**

It indicates that further research in the area is necessary (Stenberg, Wolmesjö & Leicht, 2019).

There is far more international research and knowledge concerning disappearances and searches. A British study shows that in at least two thirds of cases where people with dementia had gone missing, they found their way home by themselves or were found by relatives or healthcare and nursing staff (Shalev Greene et al, 2019). These disappearances rarely or never come to the attention of the police. In other words, there is considerable under-reporting of missing people with a dementia diagnosis. The study also showed that loved ones felt that their close relatives who have dementia may have got lost on several different occasions, and that this is a frequent occurrence. One close relative stated in the study that their relative had gone missing around 25 times. Many close relatives described how this created agonising emotions and a high level of anxiety every time they did not know where their relative actually was.

In the Swedish research review, parallels and similarities are drawn to the UK, and the researchers behind the study suggest that, in Sweden, it is also common for people with dementia to disappear – without the police being involved. Instead, carers go to search for them, and only alert the police later (Stenberg, Wolmesjö & Leicht, 2019). Irrespective of the outcome, or if the police are involved, or the person is quickly found, locating the person can take up major resources in terms of both finances and time. Time that could instead have been invested in valuable meetings and care.

## 2. "GPS alarms can facilitate searches"

According to Hasse Lagervall, one of the leading figures behind Missing People Sweden, searches would be made easier with the aid of more digital solutions, such as alarms with GPS functions.

He believes that people with dementia who go missing are a major problem and that many missing person cases involve them. At an early stage of the condition, relatives or staff have not always known the person has dementia, and their life has therefore continued as usual. The condition's course can vary greatly between individuals, which makes it difficult to make preparations to prevent disappearances, he explains.

"Home care services may not always notice that the condition has developed. Then suddenly, they call in and the person has left their home, and several hours have passed, as many people only have home care visits once a day. That's really bad. Especially in Sweden, where it's so cold during the winter."

One might not realise that someone is missing until 20–24 hours have passed. When someone has disappeared, every single minute counts. Many older people have underlying conditions, such as diabetes, which require medication. The situation can therefore quickly become very serious. GPS alarms can facilitate searches and enable people with dementia to be located more quickly.

"It was my mother-in-law, who disappeared several times as she grew older and developed dementia, that made me realise that there were failings in the procedures. It was then, in 2013, that I started to get involved in the organisation. The whole operation is based on compassion. Everyone can contribute something."

"In the future, I hope that fewer people will experience the anxiety involved when a relative is reported missing, because it's painful. Collaboration and cooperation can be improved to make searches even more efficient, so that the anxiety caused when someone is missing can be minimised or avoided altogether."



### 3. Satisfied user of GPS alarms

At present, around 60% of municipalities offer GPS alarms within elderly care. The latest statistics from the Swedish National Board of Health and Welfare show that in total around 203,000 people over the age of 65 had a GPS alarm (Swedish National Board of Health and Welfare, 2021).

Arne Andersson is one of the users who had a mobile social alarm and was very satisfied with the outcome.

When he started suffering from Alzheimer's Disease and had problems with his memory, his life took a different direction. Once, when he was out in town, he suddenly forgot how to get home. It was a frightening experience that made him not want to go out on his own any more. His daughter and wife described how it made Arne become passive and lose his joy in life. But thanks to a GPS watch, he got his freedom and joy in life back, and was no longer afraid to go for walks and bike trips on his own.

"The first thing I do in the morning when I get up is to put on my GPS watch, and then we don't have to worry at all about where I am. I just can't express how grateful I am. Thanks to this great technology, I can go out. I'm not going to let anyone take it away from me," emphasises Arne. (Trelleborgs Allehanda, 2015).

Arne's wife and daughter also felt less anxiety in everyday life, thanks to the GPS watch. If Arne got lost or needed help, he could press a button on the watch. Then he called his wife's mobile phone. If she did not answer, the call was passed on to his daughter. If none of them answered, the call was passed on to Arne's son. All three were able to track where Arne was via a computer.

"If he stays in one place for a long time, we can call him and check if he's OK. Or go there and pick him up," said Arne's daughter (Trelleborgs Allehanda, 2015).

A report from the Swedish National Board of Health and Welfare confirms the perceptions of relatives that GPS alarms contribute to a greater sense of security and reduced anxiety. The same report shows that the alarms also create a calmer work environment for staff in special care homes, as it is easier to find people who have wandered off on their own. (Swedish National Board of Health and Welfare, 2018).

Dementia is often described as "the relatives' disease" (Swedish Brain Foundation, 2021). When a close relative develops dementia, it causes major psychological strains. Many people worry about the health and well-being of their close relatives. Thanks to technical aids such as mobile social alarms and GPS watches, these concerns can be alleviated.

## 4. Raising awareness of devices

Why aren't there more GPS alarms in the municipalities, if this can make everyday life easier for so many people?

The most common answer to this question, according to the Swedish National Board of Health and Welfare's summary, is that the municipalities are not informed that these alarms exist (Swedish National Board of Health and Welfare, 2018). This confirms another study conducted at Örebro University. The thesis shows that people with dementia, their loved ones and staff working in elderly care do not use digital aids due to the lack of information (Tsertsidis, 2021). The author behind the study, Antonios Tsertsidis, believes that more knowledge among staff about the digital aids available would help more people with dementia to benefit from them.

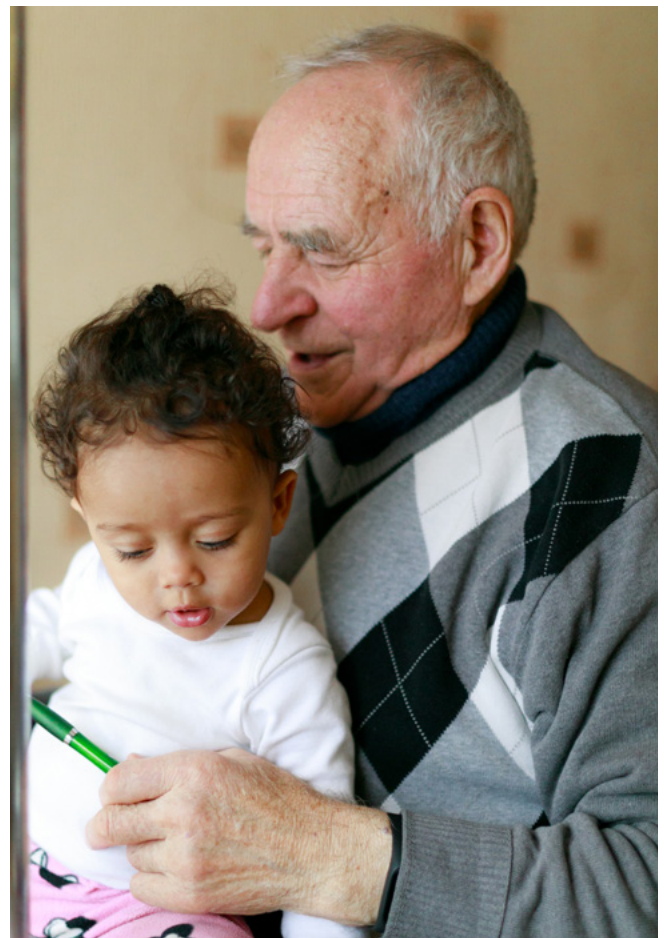
"My conclusion is that people with dementia should have a greater influence on the prescription process. They could be introduced to a number of aids at an early stage of the condition, receive the right information and support, but also participate in drawing up guidelines on the prescription of aids and new technology.

"Furthermore, most people are informed about the technology that could make everyday life easier at a late stage of the condition, when it is no longer as useful," says Antonios Tsertsidis (Senioren, 2021)

It is known that dementia cannot be cured, but life can be made easier for sufferers, by using digital aids that support cognitive functions during the course of the condition. Not least, digital aids can also ensure that those affected can stay at home for longer and achieve a better quality of life. This is shown in several studies. Let us be even better at seizing all these opportunities, so that more people can experience

a rich and dignified ageing process. This is also important and relevant, given that the number of inhabitants over the age of 80 will increase by more than 50% between 2019 and 2030 (Swedish National Board of Housing, Building and Planning, 2020). And by 2050, it is expected that 250,000 people will be suffering from dementia (Swedish Dementia Centre, 2020). A growing elderly population presents new challenges.

Independence and security for senior citizens, as well as care and nursing in new and effective ways, are just a few. Together, we can embrace the future and these challenges through welfare technology that improves and transforms the lives of senior citizens.





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