

**otiom<sup>®</sup>**

**Localisation device that prevents people  
with dementia from becoming lost.**



**Designed for nursing homes and private individuals.**

# What is Otiom?

**Otiom is a revolutionary localisation device that prevents people with dementia from becoming lost. Otiom is designed for nursing homes or private individuals and is a result of a several year-long development project with caregivers, researchers, associations, municipalities, people with dementia and their relatives.**

With Otiom, caregivers create tailored safety levels which define the limits of where each resident should be. If a resident leaves the level, caregivers or relatives receive a text message alert and the Otiom-app shows them the resident's location.

Thanks to the newest technology, Otiom is the only solution in the market, that can locate people with dementia indoors as well as outdoors.

Otiom respects an individual's independence and dignity. It is not a surveillance device. Instead, it only alerts caregivers if a resident leaves their individual safety level.

Otiom is tough enough to withstand being put in a machine washing and will continue to operate if a resident falls into water. Plus the battery lasts for up to a month.



The **Otiom-tag** is worn by residents who are at risk of becoming lost. It can be worn around the neck, or sewn into clothing (machine washable).

**Battery life: Up to a month.**

### Dementia appropriate design

The Otiom-tag has a dementia-friendly design. It is neutral, pleasant to touch and has no confusing buttons or power outlets.



The **Otiom-app** is installed and administered by caregivers and relatives.



Available on IOS and Android App Store



Bluetooth Low Energy



GNSS - satellite covered



NB-IoT (Narrow Band - Internet of Things)



The **Otiom Home base** is central to the Otiom system. These low-cost devices can be located in any area to create a safe home zone that covers any size of home, from a single storey private residence to a multi-level nursing home with hundreds of residents.

As long as the person wearing the Otiom-tag is within the home zone, he or she is deemed safe and the entire Otiom system is in a dormant, -powersaving mode.

These easy to fit Home bases are designed to be fit-and-forget; with a **battery life of three years.**



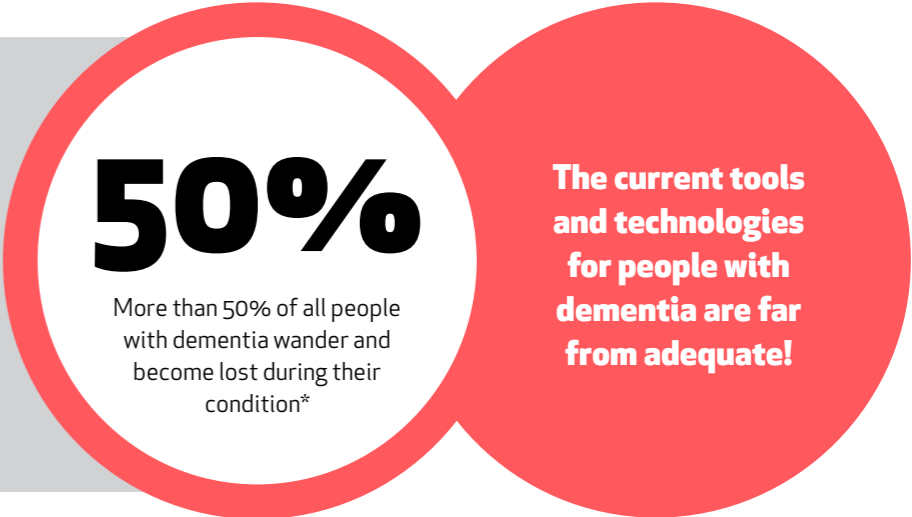


# The backstory



Over **47 million** people worldwide are living with dementia.

This number is estimated to double every 20 years. Reaching **75 million** in 2030 and **130 million** in 2050.\*



**Otiom was created to ensure we do not have to accept this as an inevitable risk for dementia sufferers.**

Otiom is the result of Denmark’s largest public-private innovation partnership. Over several years people with dementia, relatives, caregivers, aged care providers, associations, municipalities and universities have all taken part in this unique collaboration. All with the common goal of finding a low-cost, respectful and practical solution to prevent people with dementia from becoming lost.

**Otiom comes into being**

It was clear that existing tools and technologies (e.g. traditional GPS-trackers) were insufficient.

Together with our partners it quickly became apparent that what was needed is a solution that would allow people with dementia to move around freely, even to local shops or parks. But that would alert caregivers or relatives, and locate the dementia sufferer, if they became lost. In other words: More freedom and less fear and powerlessness.

Otiom uses the advanced new Internet of Things (IoT) technology. This technology makes Otiom more energy efficient than previous location systems (battery lasts up to 30 days), more reliable and it works both outdoors and indoors.

\*Source International Alzheimer Association



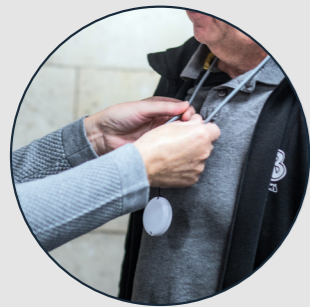
# How Otiom works

Otiom has been developed in close corporation with leading researchers in antenna and localisation technologies. It is a future-proof solution, that utilises the best established technologies as well as emerging technologies.

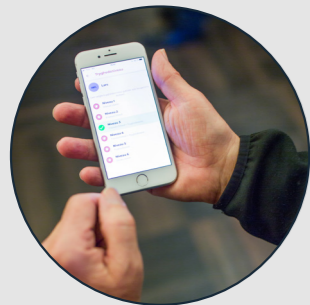
## Set-up



**1**  
Otiom Home bases are deployed throughout the nursing home, establishing a virtual safe area (home zone) for residents.



**2**  
Caregivers provide each dementia resident with an Otiom-tag. This is worn, placed in a pocket or sewn into clothing.



**3**  
The administrator (caregivers) sets the safe area for each resident in the Otiom-app.

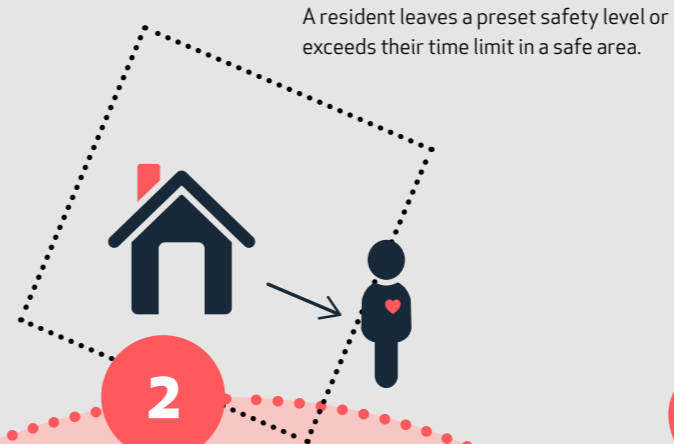
Otiom has now been set up.

## Alarm situation

Otiom is active and ready to alert caregivers / relatives, if a resident leaves his or her set safety level.



**1**



**2**



Caregivers receive an alert via text message and a location in the Otiom-app. One person must accept the alert, and bring back the resident.

**3**



All caregivers receive a stand-down text message, advising that the resident has been safely located.

**6**



The Otiom-app shows in which direction the resident is heading, and provides updated locations.

**4**



The proximity sensor in the Otiom-app advises the caregivers that the resident is close by.

The resident is located **QUICKLY, PRECISELY AND SECURELY.**

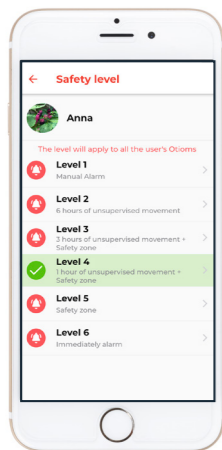
**5**



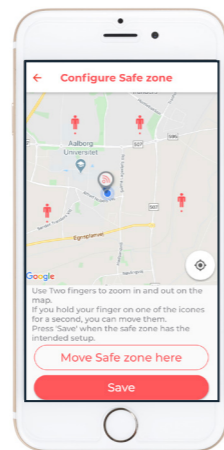
# Individual safety levels for residents

With Otiom, caregivers can create individual safety levels for each resident in their care based on their risk level and cognitive abilities. A safety level is a geographic and/or time-limited area where the resident can move freely without being monitored. If a resident leaves a designated level, a message is sent to selected caregivers, and the Otiom-app will indicate the location of the resident.

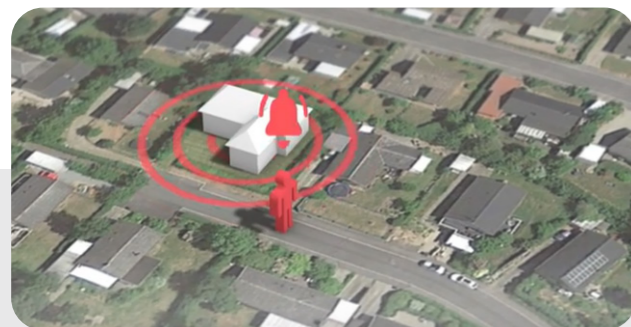
Safety levels can be outside or inside a building. Outside safety levels can include local shops, a park or limited to the perimeter of the nursing home's land. Caregivers can also choose whether there should be a time limit on how long the resident may remain in a particular level before an alert is activated. This extra feature provides additional safety for residents, who lose their sense of time, while out walking.



The Otiom-app provides quick and easy access for caregivers to see the individual safety level of each resident. The active safety level, is always highlighted in green.

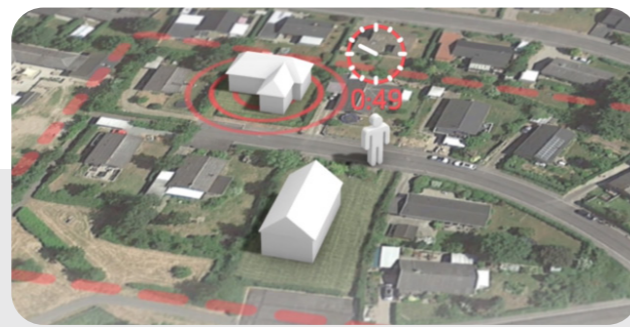


Six different safety levels allow caregivers to create custom safety zones for residents. It takes just a minute to create a new zone. New zones are activated right away.



## Otiom at highest safety level

At the highest safety level (level 6), Otiom alerts caregivers, when a resident leaves the nursing home or private home.



## Otiom at a mid-safety level

At lower Otiom safety levels, caregivers can create a unique zone around the local neighborhood, and also set a time-limit if needed. If the resident leaves the area or does not return within the set time limit, caregivers are alerted (level 4 shown).




Watch a video explaining the Otiom safety levels at [www.otiom.com/en](http://www.otiom.com/en)





# Otiom vs. conventional GPS-tracker



	 	<b>Conventional GPS-Tracker</b> 
<b>Device</b>	Neutral tag, no buttons, no noises, no distractions	Watch, shoe sole, brooch with buttons, adapters and possible two-way audio.
<b>Medical Device</b>	Medical Device, Class I.	N/A
<b>Battery life</b>	Up to one month	24-48 hours
<b>Surveillance</b>	Non-intrusive monitoring	Constant
<b>Locate residents outdoors</b>	GNSS (includes GPS), NB-IoT, Bluetooth	GPS and GSM
<b>Locate residents indoors</b>	✓	N/A
<b>Waterproof and Machine washable</b>	✓	N/A
<b>Damage resistant</b>	✓	N/A
<b>Individual safety zones for each resident</b>	✓	N/A
<b>Message when recharging is necessary</b>	✓	N/A
<b>Wireless charging</b>	✓	N/A
<b>Instant alert for multiple caregivers</b>	✓	N/A
<b>Cost</b>	Low purchase or rental costs and low data costs	High purchase cost, high data costs, high rental costs

N/A: Information not available. Some features may be partly available on some products and additional costs may occur.

# Otiom technology



## Conventional GPS-trackers

Conventional GPS-trackers are built around a GPS receiver, - such as a smart-watch or electronic shoe-sole, that is carried by the person with dementia.

Traditional GPS-trackers usually transmit their location continuously (24/7) via 2G or 3G signals. Since GPS, 2G and 3G transmission all have high power consumption, GPS-trackers often require charging on a daily basis.

Caregivers view the location of the person wearing the GPS-tracker via a mobile app or computer. In most cases, caregivers are required to actively monitor the app or computer on a regular basis. This is less reliable and more labour intensive.

## Otiom

Otiom uses Global Navigation Satellite System (GNSS) to determine outdoor locations. GNSS includes a large network of satellite systems from many different countries, including GPS, GLONASS, Galileo and Beidou.

The Otiom-tag transmits via the new Narrow Band - Internet of Things (NB-IoT) network. NB-IoT often has better coverage than GPS and use up to 30 times less power.

Otiom also uses Home bases to provide coverage inside your buildings. These are small, cost-effective and

low-powered Bluetooth transmitters, that are placed around the nursing home or private home, creating a virtual home zone. As long as the person wearing the Otiom-tag is within the home zone, they are deemed safe and the Otiom system is in a dormant, power-saving mode.

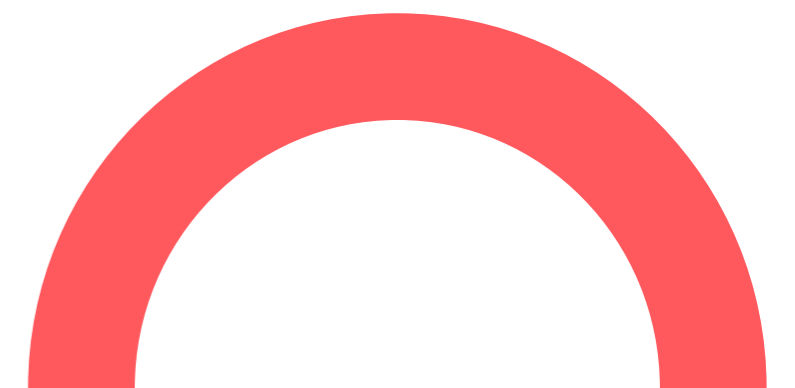
When the person with the Otiom-tag leaves the home zone, the system is activated, and can be set up to send instant alarms and locations to caregivers. Caregivers can also manually activate the system and locate the resident, via the Otiom-app. Due to its unique combination of technologies, the Otiom-tag can maintain battery power for up to a month.

## Locating residents indoors

For indoor location, Otiom features a unique proximity sensor, embedded in the Otiom-app.

To locate a resident indoor, caregivers simply open the app and select the person they want to locate. When in Bluetooth range (up to 140 square metres), the app will indicate the distance to the person.

This is particular useful if a resident with dementia is lost or hiding inside the nursing home.





# For nursing homes

Otiom Home bases are installed throughout the nursing home. Usually with one base per dementia apartment, in hallways and common rooms. The bases connect together to create a virtual home zone.

Caregivers provide one or two Otiom-tags for each resident, who is at risk of becoming lost.

Caregivers can also choose to be alerted when a resident departs the nursing home, or – they can set up specific safe areas for individual residents.

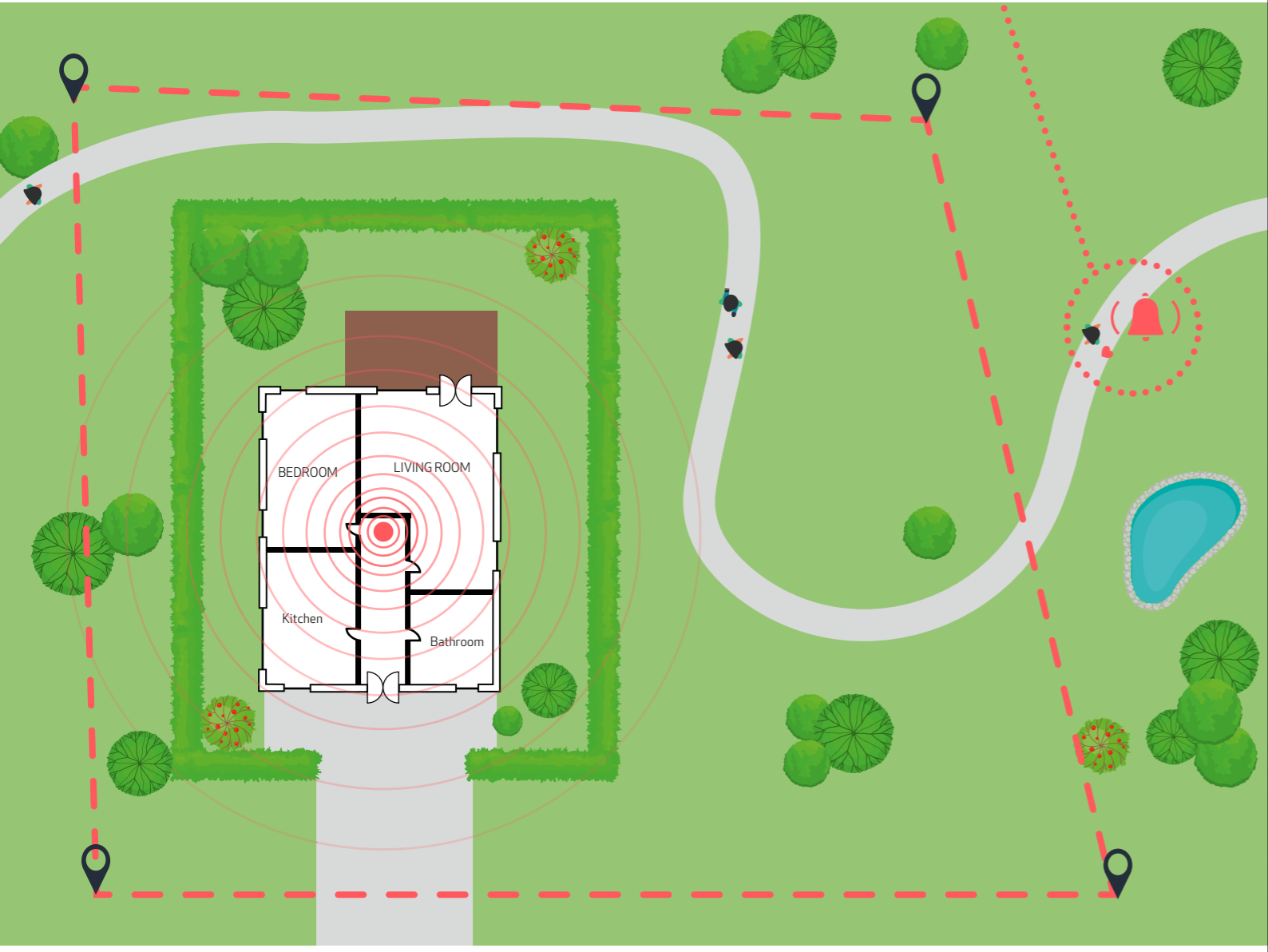
The number of Otiom Home bases required, depends on the size and number of floors of the nursing home.





# For private homes

In private homes, one or two Otiom Home bases and one or two Otiom-tags are all that is needed, to create a secure home environment.



**Level 4**  
One hour of unsupervised movement in self-defined safety zone.

- Otiom Home base
- Safety Zone
- Person wearing an Otiom-tag





# Independently tested

Otiom was independently tested by UCN University of Applied Sciences in Denmark. Tests were carried out in conjunction with dementia nursing homes and their staff.

## Otiom provides greater security and safety for caregivers

"All of the staff at the nursing homes agree or predominantly agree, that they experience greater safety using Otiom, because it allows for settings that are suitable for the individual resident. Finally, most of the employees (72%) agree or predominantly agree that they experience greater safety with Otiom due to the fact that it sends a message when it needs to be recharged."

- Extract from the UCN University's summary report.



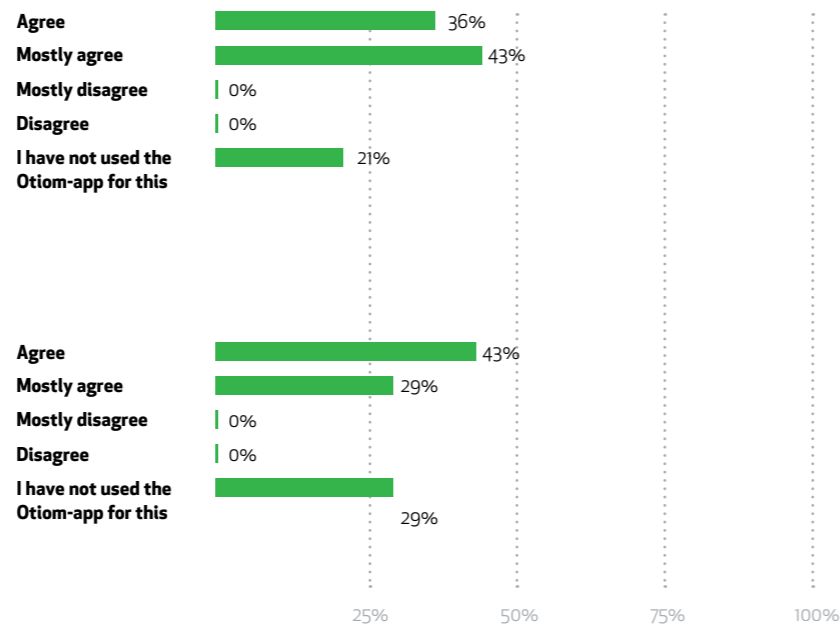
"The purpose of the report was to compare the advantages and disadvantages of using Otiom, rather than the conventional GPS devices, that are normally used. The opinions of the caregivers are based on Otiom being used normally in their workplace."

Vivi Fog Wogensen, UCN University of Applied Sciences.

## Test results

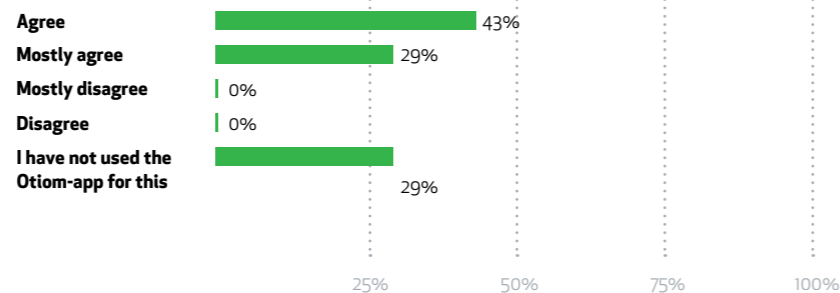
### Otiom makes it easy to track a resident lost indoors

The vast majority of employees (79%) agree or predominantly agree that the Otiom-app makes it easy to track a resident lost indoors. The remaining employees did not use the function.



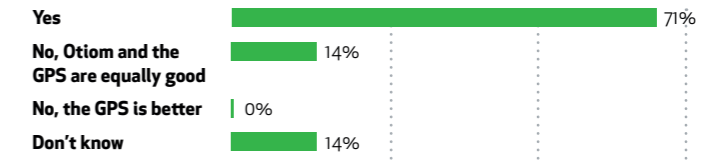
### Otiom makes it easy to track a resident lost outdoors

The vast majority of employees (72%) agree or predominantly agree that the Otiom-app makes it easy to track a resident who has become lost outdoors. The remaining employees did not use the function.



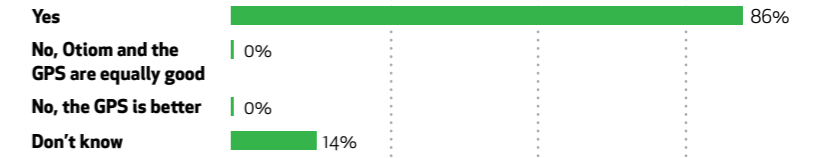
### Otiom is seen as less disturbing for residents to wear than a GPS device

Caregivers perceive Otiom as a device that provides more options for placement on the resident than their current GPS unit. At the same time they also find Otiom less troublesome for residents than the GPS unit.



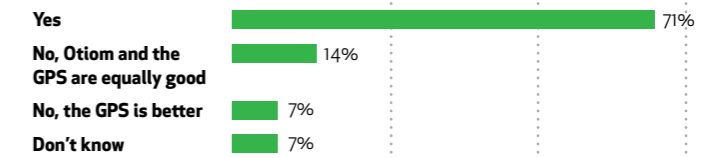
### Otiom retains battery better than the GPS unit

All employees who have experience with battery levels/time agree that Otiom retains battery better than GPS units. The remaining employees did not use the function.



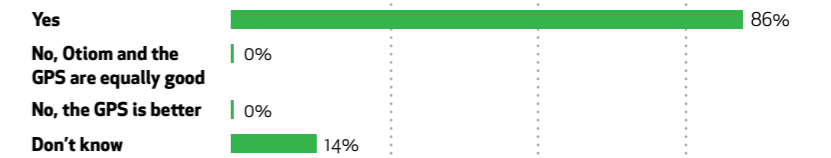
### Otiom is more accurate than GPS, when tracking a resident outdoors

Most employees (71%) believe that Otiom is more accurate when tracking a resident outdoors.



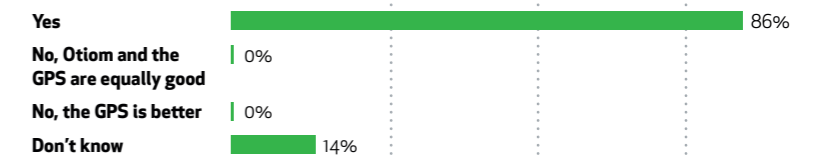
### Otiom is more accurate than GPS, when tracking a resident indoors

The vast majority of employees believe that Otiom is more accurate than GPS for tracking a resident indoors. This outcome was expected, since the GPS device cannot track resident indoors.



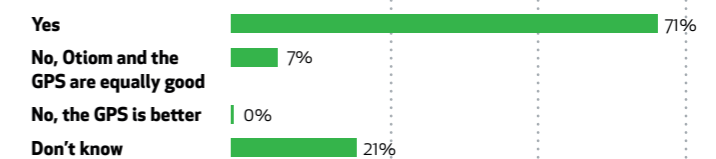
### I generally have an easier time using Otiom than the GPS

The vast majority of employees (86%) say that they found Otiom easier to use than the GPS. Overall, the review of data indicates that the Otiom system requires less time and effort from staff compared to the GPS system.



### I generally trust Otiom to do the right thing (eg. send correct alerts and maintain a signal) than the GPS unit

Most of the employees (71%) generally trust Otiom to do what it is supposed to do - as compared with the GPS unit. A few believe that the two systems are equally good, or did not answer the question.



# 9 Otiom facts for decisionmakers

1

## Otiom locates people indoors as well as outdoors

Otiom is the only solution, that allows caregivers to locate residents indoors as well as outdoors. This is especially helpful, when a resident is hiding in a room, or has wandered off on a trip or outing.

2

## Up to one month between battery charges

With Otiom, caregivers don't need to manually check battery levels all the time. If a resident remains within the boundaries of the nursing home, the Otiom-tag can maintain battery for up to a month.

4

## Caregivers are automatically notified when something important happens

Caregivers can easily configure Otiom to alert all staff on duty. It also sends out an alert when it's time for charging.

3

## Personal safety levels for each resident

Caregivers can easily create individual safety levels for each resident. A safety level is a geographic and/or time-limited area, where the resident can move freely, without being monitored.

5

## Prevents residents from becoming lost

Unlike previous systems, Otiom proactively help residents before they are aware they are lost or at risk. Caregivers can locate and guide them home before they realise, they are unable to find their way back. This prevents accidents, panic and provides great all-round safety.

6

## From caregivers to caregivers

Caregivers can feel safe knowing that residents, relatives, researchers and professionals, such as they themselves, have all been involved in the entire development process.

8

## Easily keeps track of multiple residents

With the Otiom-app caregivers can easily manage and keep track of an unlimited number of residents.

9

## Durable and machine washable

Otiom is completely waterproof and withstands being washed in a washing machine or damaged in a fall.

7

## Otiom doesn't monitor residents unnecessarily

Otiom allows residents to live their life without being monitored 24/7. It only monitors residents, if they depart the safety levels, that are set by caregivers.



**Anni G. Walther**

Initiator, The Otiom Project and  
DanAge Chairwoman



## Otiumgården nursing home



"The Otium-tag has been designed in a white colour and round shape. This is an advantage as it allows the resident to wear it discreetly on his or her clothes. The key advantages of Otium are long battery life, and that it automatically advises caregivers when it requires charging. Otium also alerts staff when a resident leaves the safety level, he has been given. When this happens, Otium very accurately shows where the resident is located. The resident can be located and brought back to the nursing home."

**Lotte Lund Jakobsen, Manager**

### Otiumgården nursing home

Otiumgården is a leading Danish nursing home, in Northern Denmark.

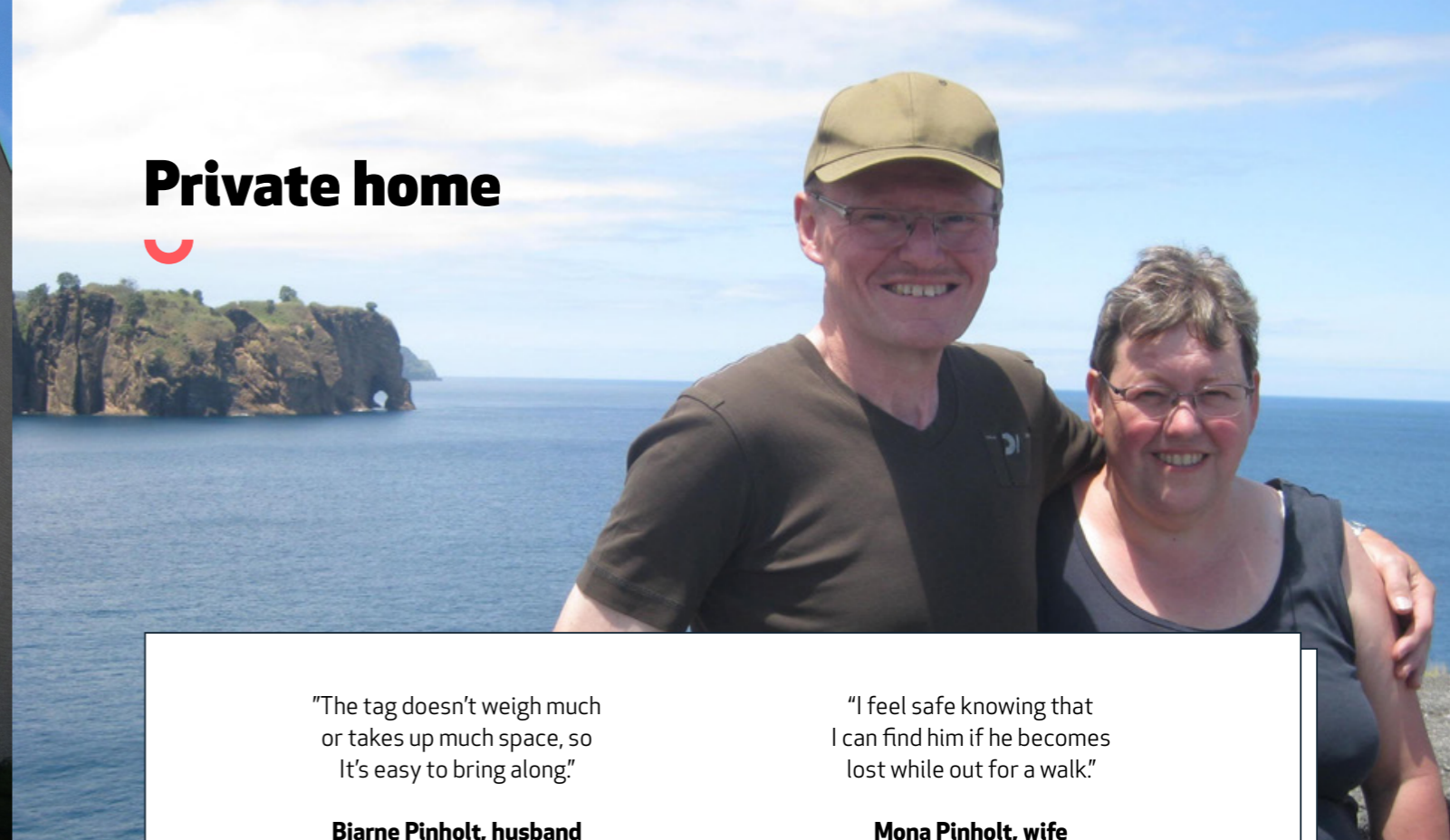
Otiumgården features 43 spacious private apartments, a community house with a large activity centre and banquet hall, all surrounded by gardens and open walking areas.

The apartments are set in two separate three-story buildings. One of them is an apartment building, specifically built for residents with mid-to-late stage dementia.

Otiumgården provides the best possible service to residents. This is achieved by getting to know the life, habits and attitudes of each resident personally. Each resident is seen as an individual and this is reflected in the care provided.

Staff and management at Otiumgården have been part of the development and testing process from the early-development stages of Otium. They have identified care needs and advice, and maintained a close dialogue with residents and their relatives about the practical safety solution they need. This has enabled Otium to design a system that offers the highest level of safety that still respect the resident's privacy, while giving caregiver reassurance and the freedom to care more and monitor less.

## Private home



"The tag doesn't weigh much or takes up much space, so It's easy to bring along"

**Bjarne Pinholt, husband diagnosed with dementia**

"I feel safe knowing that I can find him if he becomes lost while out for a walk."

**Mona Pinholt, wife**

### I don't just want to sit in a corner

Barely a year ago, Bjarne Pinholt was diagnosed with dementia and he became disorientated and lost while on holiday in an unfamiliar location. Shortly before a public dementia advisor suggested they try using Otium, Mona had to locate Bjarne, who had lost all sense of time on one of his long walks close to home. But Bjarne will not give up a life of long walks and personal freedom. That is why Otium now means a lot to Bjarne and his wife, Mona.

"One evening Bjarne went for a walk before dinner. An hour and a half passed and it was getting dark. I became very uneasy. I hurried down to his brother, who lives nearby, to see if he was there. He wasn't. So we went out together to look for him," Mona says.

When it got dark, Bjarne sensed that something was wrong, and by following the waterline, he managed to figure out where he was.

"I know where all of this is heading, but I'm not the type of person, who places myself in a corner and feels sorry. That doesn't help me. I want to live my life, as I always have. That is my goal," says Bjarne.

Mona fully supports his goal. So when the public dementia advisor offered Otium to Bjarne and Mona, they had no reservations.

"After all, it shouldn't limit Bjarne's freedom that I am uneasy about where he is" says Mona.

"It definitely gives a sense of security to know that she can keep up with my movements. The tag doesn't weigh much or takes up much space, so It's easy to bring along" says Bjarne.

Both Mona and Bjarne recommend Otium to others with dementia: "We regularly hear about people who wander and become lost, so it will be a huge advantage to get Otium used widely," says Mona.





## Our Manifesto

It is estimated that half of all people suffering from dementia wander and become lost due to their condition.

Nobody should have to accept that.

When someone we love begin showing signs of dementia, friends and relatives often find it difficult to know what to do. The thought of them wandering and not being found in time is terrible. However, we have natural reservations about monitoring and tracking people, who haven't asked for it. This has been a dilemma up until now.

At Otiom, our focal point is 'freedom'. Both for people with dementia and their relatives. Freedom to do as they please, and freedom from worry for caregivers. With Otiom, we have created a solution that does not disrupt daily routines. Relative or caregivers no longer have to worry about charging a product, logging on to an app, or checking a screen all the time. And someone with dementia does not have to wear a new watch or suddenly only stay indoors.

We have developed Otiom on the basis of the advice from caregivers and families and the analysis, of the needs of people with dementia, relatives and caregivers. This many inputs have been pivotal to us because people should not wander – and if they do, they must be found, quickly and safely! For this reason Otiom is designed to work indoors as well as outdoors – without constantly monitoring our loved ones. At the same time, the use of the latest technology provides much longer battery life.

Otiom is designed and made in Denmark, to ensure it meets the quality and functional expectations of European aged care providers and their communities.

Otiom is the considerate solution that provides freedom for caregivers, relatives and people with dementia, while ensuring that if they get lost they will be found quickly, avoiding distress for the lost person and caregiver, and quickly returning them safely.

otiom®



otiom<sup>®</sup>

---

Alfred Nobels Vej 21 A  
9220 Aalborg  
Denmark

info@otiom.com  
+45 3696 1010

---

