

LOCATING DEVICES

When a person has Alzheimer's or a related disease*, memory, judgment, reasoning, and communication abilities eventually become seriously impaired. These changes in the brain can cause a person with the disease to become confused in familiar places and get lost. This is a serious issue as, for example, a person with Alzheimer's disease who is lost for more than 12 hours, has a 50% chance of being injured or dying¹. People with Alzheimer's disease should have the opportunity to move about as freely and independently as possible, however, at some point, a balance will need to be achieved between independence and safety.

Wandering is a common behaviour for a person with Alzheimer's disease and may result from the desire to move about, search for someone or something, remove themselves from their current surroundings, or respond to a physical need, such as hunger or the need to use the washroom. In itself, wandering is not a harmful behaviour and when done in a safe environment, can be a healthy outlet for a person with Alzheimer's disease. Helping to make wandering a safe activity involves looking at all the potential triggers of the behaviour. By determining what may be contributing to the behaviour, it may then be possible to find ways to make it safer. For more information and suggestions, see the Managing Wandering page at www.alzheimer.ca.

Another helpful strategy is registering yourself or the person you support with the Safely Home® Registry. Safely Home® is a nationwide program designed to help find a person who is lost and to assist in a safe return home. Once registered, information on wandering, ID cards and a simple identification bracelet (not a tracking device) inscribed with a unique ID number are provided for a fee of \$35. Police anywhere in Canada can then access this information. For more information on the Safely Home® program and how to register, see the Safely Home® Registry section at www.safelyhome.ca or contact your local Alzheimer Society.

In addition to strategies for learning about wandering and the Safely Home® program, there are new and emerging technological approaches that can be of assistance to people who are likely to wander. Locating devices are electronic tools that can be used to follow a person's movements or to identify a person's location. No device or system can guarantee that a person with Alzheimer's disease will not become lost or that they will be found. However, the use of locating devices may represent one part of a family's overall strategy to keep you or the person you support safer.

Please note: the field of locating devices is highly technical and detailed and a substantial amount of information has been included in this information sheet. Additionally, the equipment used to support some of these devices (e.g. a computer) may not be practical or readily available for some people.

Ethical Considerations

In determining if locating devices are appropriate for you or the person you support, the benefits and drawbacks of various technologies must be considered along with the safety needs and the wishes of the person with Alzheimer's disease. It is important to first understand the person's lifelong values and wishes about issues such as personal freedom and dignity, independence and safety. And, it is preferable to know how the person with the disease feels

*Alzheimer's and related diseases include Creutzfeldt-Jakob Disease, Lewy body Dementia, Frontotemporal Dementia and Vascular Dementia. For ease of reading, "Alzheimer's disease" is used throughout this sheet to represent these conditions.

¹ Koester R.J. (1999) *Lost Alzheimer's Disease Search Management*. dbS productions, Charlottesville, VA.

about locating and/or other monitoring devices. The Alzheimer Society strongly encourages people recently diagnosed with Alzheimer's disease and their family members to have these discussions early as one part of planning for the future.

Prior to deciding whether the use of a locating device is right for you or the person you support, you may want to consider the following questions:

- Throughout their life, what value has the person with Alzheimer's disease put on their freedom and independence versus their safety and security?
- How do these values influence the decision to use a locating device?
- What effect, if any, will there be on personal dignity? How important is this?
- At what point would it be agreeable to start using a locating device?
- Are there legal issues to consider if the person is no longer able to have input into the decision?

Some may view wearing a locating device as a way to increase personal freedom and safety while giving family members and caregivers more peace of mind. Others may feel it is an invasion of privacy. As well, relying on a locating device may lead family members or caregivers to check in with the person living with Alzheimer's disease less frequently. This could lead to less human contact and the person becoming more isolated.

Alzheimer's disease inevitably brings with it a number of ethical issues. Making decisions around these issues can be difficult but with inclusion of the person with the disease, forethought, early planning, support from your local Alzheimer Society and family discussion, the best possible options can be explored.

Types of Devices

Locating devices that help find a person who is lost are new to the field of Alzheimer's disease. However, this technology is rapidly developing and more and more, we will see these kinds of devices becoming tailored and available to people with the disease.

Locating devices use a transmitter installed in items such as a wristband or cell phone. A wristband, for example, can be worn by the person at all times and does not require the person to operate the device in any way. A cell phone, on the other hand, does require the person to remember to carry it, know how to use it etc. Depending on the person, this may not be a practical solution.

Whatever type of device is used, it is carried by the person and relays radio signals back to a receiver that identifies the location of the person. Methods of locating vary with different devices. Some may rely solely on the caregiver to receive a call or alert and start a search. Other devices may offer a more sophisticated system which may include the use of a computer, telephone, cell phone, call centre operator and/or direct contact with authorities. In addition, some systems send out an alert when a boundary is crossed (a predetermined, adjustable "geofence").

Global Positioning System (GPS):

- uses radio signals, transmitted from satellites to electronic receivers to identify the location of a person wearing a transmitter
- comes in the form of personal devices and are also built into some models of cars
- relies on battery power but, depending on the sophistication of the device, may also include the use of AC power, computers, internet connections, standard telephone service, cell phone service and call centre operators

- is exact to within a few metres
- is intended for outdoor use but may not be able to pinpoint the location of persons if the satellite signal is affected e.g. under bridges, with electrical interference or in very dense bush
- typically will not work in buildings, underground or underwater
- some systems allow the caregiver to track the person using an Internet map while others allow caregivers to define safe boundaries for the person (a signal will be sent if the person goes outside of the set boundaries)
- also available is A-GPS (Assisted Global Positioning System) which uses an assistance server (cell tower) to reduce locating time

Radio Frequency (also known as RF, Frequency Modulation or homing device):

- uses radio signals to determine a person's location
- can be used indoors
- can pinpoint a person's location but has a short range – usually less than five kilometres

Cell Phone:

- on newer models, the user can activate a locating system, usually by dialing 911
- relies on the person to carry the phone and know how/when to use it

Deciding on a Device

In order to decide what type of device might best serve your needs, consider the following:

- Where will the technology likely be used (in a private residence, a care facility, indoors, outdoors or in multiple locations)?
- Where will a search likely take place (within a building, outdoors, in an urban or a rural area, in a tree covered or open space, near water)?
- Which devices are most appropriate for these settings?
- How much freedom of movement will the device allow?
- If necessary, will the person with dementia be able to use the device?
- Who will be doing the monitoring or locating: family? caregiver? police? outside organization?
- In addition, you should evaluate the device for user-friendliness, cost, reliability, accessibility, comfort, and whether the device is discreet/invasive and acceptable to the person wearing it.

Note: Researchers at McMaster University in Hamilton, Ontario have written a report entitled “The Locating Technology Project” (August, 2006) in which five locating technologies were field-tested to determine their capabilities, potential, advantages and disadvantages. Their success rates, reliability percentage, appropriateness of meeting user needs and safety were also evaluated. Although these five technologies are only a sample of potential devices, the report is an excellent starting point to learn about locating technologies. See the full report at:

www.srs-mcmaster.ca/Portals/20/pdf/LTP_Report.pdf and a consumer tip sheet at www.srs-mcmaster.ca/Portals/20/pdf/Locating_Technology_Tip_List.pdf

References and Resources:

- ¹ *Alzheimer Society of Canada. Safely Home® Program. Contact your local Alzheimer Society or visit the Alzheimer Society website at www.alzheimer.ca*
- ² *Alzheimer Society of British Columbia. (October 2007 newsletter). In Touch--Special Edition on Locating Devices. www.alzheimerbc.org/intouch.php*
- ³ *McMaster University, School of Rehabilitation Science. (2006). The Locating Technology Project. www.srs-mcmaster.ca/Portals/20/pdf/LTP_Report.pdf*
- ⁴ *Hughes, J. (2002). Electronic tagging of people with dementia who wander. www.bmj.com/cgi/content/full/325/7369/847%20*
- ⁵ *Alzheimer Society of Canada. SEARCH is an EMERGENCY – Pre-plan manual for the search and rescue of missing people with Alzheimer Disease and related dementias.*

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Alzheimer Society

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LOCATING DEVICE CHECK SHEET – ALZHEIMER SOCIETY

We suggest that you use this check sheet to compare various locating devices. Make a copy for each device you are considering and leave one blank to use as a master copy. Most of these questions can be answered by the device salesperson, however, you may also want to speak to someone currently using the device.

Device

Device type: _____

Device name: _____

Model number: _____

Manufacturer: _____

Affordability

Purchase cost of unit: _____

Cost of replacement batteries: _____

Other costs such as monthly fees or service calls: _____

Reliability

Has this device been independently tested? YES NO

If yes, where and by whom did this testing take place? _____

Is this device endorsed by:

- Policing services YES NO
- Search and rescue units YES NO
- Facilities caring for persons with Alzheimer's disease YES NO

Will this device work when the person:

- is immersed in water? YES NO
- is out of a specific range? YES NO
- is away from a pre-determined area or leaves a building? YES NO

Will this device provide an alarm when the person:

- removes the device? YES NO
- falls? YES NO
- is near water? YES NO
- is immersed in water? YES NO
- is out of a specific range? YES NO
- is away from a pre-determined area or leaves a building? YES NO



Does this device incorporate:

a geofence? a panic button? two-way communication?

Is the device durable? YES NO

Ease of Handling/Use

How often does the battery need recharging and/or replacing?

Are special skills/knowledge/training required to use, maintain and clean this device? YES NO

Is the system portable – i.e. is it effective when one travels on vacation? YES NO

Must the caregiver have knowledge of the area that the device covers? YES NO

Is a map required? YES NO

Does the technology require other equipment such as a computer, internet or cell phone? YES NO

If yes, what technology?

Can the device be easily removed, lost or forgotten by the person? YES NO

Service

Is a trial period offered? YES NO

How long is the warranty effective?

What does it cover?

Is there a trade-in policy for upgrading? YES NO

Is there a “loaner” unit that can be quickly accessed? YES NO

Wearer satisfaction

Is the device comfortable to wear? YES NO

Is the device discreet? YES NO

Is the device acceptable to the person wearing it? YES NO

Notes:

For more information on Alzheimer’s disease, wandering and the Safely Home® Program, see www.safelyhome.ca

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