

# DEMENTIA



**Let's overcome the loneliness  
of the elderly with company**



HANDBOOK

# **Let's overcome the loneliness of the elderly with company**

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**ERASMUS+ PROGRAMME**

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# 1. GENERAL INFORMATION ABOUT DEMENTIA

## 1.1 What is dementia?

Dementia cannot be prevented, but it can be slowed down. However, not all memory impairment is dementia. There is an expected decline in brain function with age, so some degree of forgetting is not unusual.

Dementia is a chronic, progressive deterioration of cognitive function. It affects sensory and motor functions, resulting in an impact on a person's overall functioning, including emotions and behaviour.

In the cognitive domain, dementia affects higher brain functions such as memory, thinking, orientation in time and space, reasoning, counting, verbal expression, judgment, performance of daily tasks, etc. The most common emotional problems that accompany people with dementia include mood disorders, anxiety and depression.

Dementia is not a disease, but a set of symptoms that manifest themselves in various diseases. It is understood as a biomedical, psychological and social disorder called Organic Brain Syndrome (OBS) that encompasses many different diseases (Stewart, 2004).

## 1.2 Symptoms of dementia

**Symptoms of dementia caused by Alzheimer's disease can affect several areas of functioning:**

Dementia can go completely undiagnosed before the first symptoms appear because most functions, such as motor skills, senses and speech, are not impaired. The first symptoms appear as difficulties with everyday activities at home or at work. The person may be confused, disoriented and have trouble performing new, unfamiliar tasks. Problems with behavioural changes such as social isolation and poorer emotion regulation, symptoms more commonly associated with depression, may also occur in the early stages. Symptoms are also manifested in episodic memory, executive functions and speech fluency. Problems and impairments in multiple domains simultaneously are also common (summarized in Kavcic, 2015):

- **Memory:** excessive forgetfulness observed in everyday activities: harder to retain new memories; losing things; forgetting where things are stored; buying the same things, asking the same questions, forgetting names, inability to remember agreements, etc.
- **Orientation:** difficulty in orienting oneself in time and space: not knowing what day or time of day it is, getting lost in familiar surroundings, not recognising the home environment, etc.
- **Perception:** problems with visual perception, speech and writing: difficulty reading, perceiving details, colours, space, not finding the right word, later speech impairment
- **Socialization: withdrawing** into oneself, avoiding social activities, meeting friends, giving up hobbies and other social activities that one has engaged in the past.
- **Emotional and behavioural changes:** there may be mood changes, the person may become more sensitive, less trusting, anxious, depressed, confused, but also aggressive, rude, irritable.

- **Poorer judgment and decision-making:** spending money unwisely, buying unnecessary things, naively entering into contracts; paying for things that are unnecessary.
- **Neglect of personal hygiene and appearance**
- **Difficulty with logical reasoning:** loss of ability to solve problems, understand concepts, control behaviour.

### 1.3 Why and how dementia develops in the light of neurological evidence

In dementia caused by Alzheimer's disease, short circuits in neuronal connections lead to atrophy of neurons in the brain and gradual loss of neuronal connections. As neurotic plaques spread to different parts of the brain, they destroy cells responsible for specific functions such as memory, speech, reading, orientation, emotion and balance. This results in a gradual decrease in a person's vitality. The progression of dementia can take decades. This progression is described by different stages of dementia: mild, moderate, advanced dementia.

- The damage usually starts in the hippocampus, the part of the brain where our memories are formed. From there, the disease spreads to the speech centre. This makes it increasingly difficult for a person with dementia to find the right words and maintain a conversation.
- Another area affected is the frontal part of the brain. The individual slowly loses the ability to solve problems, understand concepts, plan and control behaviour.
- Subsequently, the disease spreads to the area that is responsible for emotions. The individual may lose control of emotions and feelings. This is followed by the sensory area where sensory functions such as smell, taste, hearing and touch are located. In very advanced dementia, hallucinations may also occur.
- The part of the brain where an individual's oldest and strongest memories are stored is the area that dementia hits in its more advanced stages
- The final area affected is the ability to coordinate and balance, which may be followed by impaired breathing and heart rate regulation.

### 1.4 Characteristics of the stages of dementia

#### **Mild dementia:**

- A person is still capable of independent living: to perform work, drive a car, take care of himself in all activities.
- The usual length of this phase: 3 to 5 years.
- Initially only mild memory impairment, difficulty learning new things? and thinking.
- Mild Attention Deficit Hyperactivity Disorder (ADHD) manifests itself by a person being unable to follow a conversation, especially in a large group, withdrawing from society and losing interest in things they used to enjoy.
- Later, forgetfulness, emotional withdrawal and often sadness and numbness come to the fore.
- Memory disorders come to the fore when a person forgets that he or she is forgetting, and when relatives remind them, they become angry, withdrawn and suspicious.
- The person complains of memory problems: forgetting names that he or she used to know well.

- When travelling in unfamiliar places, one can get lost.
- Colleagues and people around him begin to suspect trouble.
- The person in question has read the book, seen the movie, been to the event, but remembers little about it.
- Loss or misplacement of items.
- Clinical tests may show problems with concentration.
- Objective indicators of memory problems can only be demonstrated by formal tests. There may be a reduction in performance at work and in social interactions.
- There is denial of the problem and mild anxiety.

### **Moderate dementia:**

- Limited knowledge of general and more recent topics (e.g. who is the president of a country, which is the capital, who is a famous author, etc.).
- The usual length of this phase: 3 to 12 years.
- Communication difficulties
- Difficulties with everyday tasks, hygiene, using gadgets, electronics, etc..
- Inability to repeat important information from everyday life, such as address or phone number, names of loved ones, school, etc. frequent disorientation in day, place, season.
- He still knows his home and has memories of his personal history (episodic memory, declarative memory).
- Some activities can still be done by the individual alone.
- Loss of ability to travel, handle money, etc.
- Inability to perform complex tasks.
- Emotional sensitivity and avoidance of difficult situations: the dominant defense mechanism is denial, excessive jealousy, delusions, aggression or apathy, anger, impulsivity.
- The person cannot function without help, needs guardianship, cannot live independently.

### **Advanced dementia:**

- Neuritic plaques and neurofibrillary tangles present on most of the brain.
- The person forgets the names of relatives, can remember his own name, but has difficulty with other family members – he cannot distinguish relatives from strangers.
- Slow forgetting of all recent events and experiences.
- One can recall only a few events and knowledge from life.
- Problems counting forward or backward by tens.
- Disruption of the daily rhythm: sleep disturbances.
- Changes in personality and emotions may include delusions, apathy, obsessive symptoms, fear or loss of appropriate behaviour.
- All verbal skills are lost. Often the person in question doesn't speak at all or just babbles.
- The person needs help with activities of daily living, incontinence, feeding and toileting.
- Loss of basic psychomotor functions; gradual loss of walking ability, brain loses ability to tell the body what to do.
- At the end of the period, human functions are only vegetative.

## 2. HOW TO HELP PEOPLE WITH DEMENTIA?

### 2.1 Maintaining vitality through activity

If you introduce various cognitive, sensory, motor or speech exercises into your life or the lives of your loved ones, they can have a positive effect on stimulating neural connections, improving the quality of life of older people and can slow down dementia.

Mental activities can slow cognitive decline or reduce the risk of cognitive decline. These activities promote the growth of new nerve cells and connections between nerve cells. Mental activities or various cognitive training can improve brain function not only in young people but also in older people, whether the training is done on a computer or through various aids and activities. If a certain cognitive area is strengthened, such as attention, the effects of training are transferred to other areas such as memory, visual and auditory perception, and endurance (Kavčič, 2015), because each area is connected to several areas in the brain. Sufficient commitment to the task and performing the exercises continuously or continuously for a certain period of time is also important for success. Cognitive or mental training refers to processes:

- synaptogenesis, in which new synapses are formed,
- neurogenesis, or the formation of new neurons,
- which, increase the growth factor of the brain, where we strengthen the neural network, create a new network and connect existing networks with new ones.

We talk about brain plasticity, which allows an individual to use the additional brain capacity created by training (Kavčič, 2015).

Therapy should be started as soon as possible, as the effect is highest in the early stages of the disease. However, you will need time to train, a commitment to really want to help and the knowledge of how best to help and with what.

### 2.2 Effects of therapies at different stages of dementia

#### **Mild dementia:**

- Preventive activities have the greatest impact: cognitive exercises (strengthening attention, memory, problem solving, etc.), sensory exercises, sensorimotor exercises, physical activity, healthy nutrition and healthy lifestyle.
- Helping the person to plan daily activities: monitoring daily activities, taking medication, carrying out activities, managing finances, planning important events, daily tasks, etc.
- Planning for the future, dealing with legal formalities, talking about care, life in a home for the elderly.



### **Moderate dementia:**

- Carrying out activities in an individual manner with a person guiding them and reinforcing the skills learned.
- Perform activities to stimulate recall of the past, simple activities to strengthen motor and sensory skills, activities to retain and strengthen all types of memories (implicit, episodic, semantic).
- Guided activities to support exercise.
- Ensuring appropriate communication and socialization.

### **Advanced dementia:**

- Perfect and continuous care.
- Perform activities that improve sensory perception, relax and calm a person.
- Do not forget about activities to preserve existing functions.

## **2.3 Good contact and appropriate communication are key to helping a person with dementia**

People with dementia are more emotionally vulnerable, so how we approach them and communicate with them is important so as not to deepen their distress.

When communicating, it is important to note what the person with dementia wants to say in the conversation, even if what they say is not always accurate. For example, the person with dementia asks when lunch is, and we know they ate lunch half an hour ago, but they don't remember. Because we know that the memory for storing new information has deteriorated, it is right to answer the question in a way that makes her feel accepted and satisfied. For example, we can say that lunch will be early. This does not mean that we have lied to the person, but only that we have entered into his world of perception and thus approached him. Facing the truth is inappropriate for the person with dementia because it deepens their suffering. Generally we answer every question the person with dementia asks, even if it is the third time in a row, and we do not mention how many times we have already done so in the same hour/day.

Naomi Feil (Hülsen, 2007) has developed a specific method of communicating with people with dementia that she calls validation or empathic understanding.

Only one person should ever talk to the person with dementia. Approach the person from the front as this allows them to use all their senses and feel safer. Eye contact is also extremely important to establish interpersonal trust. The words you use should always be simple, sentences short and concise, instructions straightforward, speech slow and clear and voice of appropriate intensity for the situation. Also take care to encourage the person to speak and not to correct them. Use touch only if the person allows you to do so. Avoid saying 'you must', 'you must not' and do not argue with the person even if you know you are right. In all this, you must also be aware of various distractions: the sound of the radio, the television, you must be in the same room and not speak from far away, etc.

**Before you start communicating with a person with dementia, it's a good idea to pay attention to a few things:**

- Maintaining eye contact and having to keep your head at approximately the same level. It is best to sit at the table opposite the individual. If he is sitting and you are standing, you must lean down towards him. It is important that he or she can see your face.
- Your speech should be clear and loud enough. Notice how quickly the person with dementia speaks. It is important to speak at their pace. Use simple and understandable sentences.
- It is necessary to give the person a choice as to whether they want to talk about a certain topic at all. Do not ask for facts such as dates, places, names of people, but for their opinion. Don't ask where and when she went on holiday last year, but ask: "Where would you like to spend your holidays? In the mountains or maybe by the sea?" She may answer just "yes".
- You should be careful not to give her too many options, as it might confuse her.
- Asking her where she feels comfortable and why. Don't ask too broad and open-ended questions.
- You must conduct the interview with sensitivity and ask follow-up questions when necessary.
- Never impose your views.
- The person's opinion matters, they have their own logic and need to feel that they are always right.
- Never communicate childishly with people with dementia. These are adults who have had a lot of life experience and still have a lot of retained knowledge.
- If you are not family or friends, always address them with respect. It is important to reassure them through communication that they are safe and still important.
- We must see the person, not the disease, and he must be your equal partner.

**2.3.1 Communication in the different stages of dementia**

	<b>TYPICAL BEHAVIOUR</b>	<b>COMMUNICATIONS</b>
<b>FIRST LEVEL</b>	<p><b>Denial of problems</b></p> <ul style="list-style-type: none"> <li>• Apology for forgetting</li> <li>• Denial of impaired vision, hearing, mobility</li> <li>• Denial of emotions and feelings of loneliness, fear, joy</li> </ul> <p><b>Resistance to change</b></p> <ul style="list-style-type: none"> <li>• Upset when things aren't always in the same place</li> </ul> <p><b>Refusal of eye contact</b></p> <p><b>Accusing others</b> (of theft, backstabbing)</p>	<p><b>Centering/focusing attention</b></p> <ul style="list-style-type: none"> <li>• Giving the person full attention and not burdening them with your own feelings, worries and prejudices</li> <li>• Not naming feelings: e.g. "I feel like you're upset"</li> <li>• Being aware that touch is only a request or in response to touch</li> <li>• Don't point out flaws, don't correct a person</li> <li>• Avoiding questions about why or how, because they require justification that the person with dementia cannot provide</li> <li>• Do not ask questions about details, they are often too complicated and make the person feel uncomfortable</li> <li>• Better to ask questions in a way that allows the person to answer yes or no</li> </ul>

<p><b>SECOND LEVEL</b></p>	<p><b>Temporal disorientation:</b></p> <ul style="list-style-type: none"> <li>• The person loses track of time, confuses persons from the present with persons from the past</li> <li>• She may think her parents are still alive/ her children are still young</li> <li>• They want to return to their previous home (often to their childhood, youth, their parents' house)</li> <li>• Sometimes he doesn't recognize his last residence</li> <li>• <b>Long-term memory</b> is still retained, but <b>short-term memory</b> is sometimes lost</li> <li>• Sometimes he hears voices, sounds from the past, sees his own images, smells</li> <li>• Gaze is unfocused, eye contact is lost</li> <li>• <b>Speech</b> can be quiet, slurred. The person may invent new words, because she is unable to find the right words</li> <li>• Because of the misunderstanding of the environment, one is often in conflict with it</li> </ul>	<p><b>Validating behaviour/therapy:</b></p> <ul style="list-style-type: none"> <li>• The goal is to take the person seriously regardless of the truth of their claims</li> <li>• Watch the pitch of the voice to keep it at the same level as the person with dementia</li> <li>• Allowing and encouraging the person to talk about their memories while they are still able to do so</li> </ul>
<p><b>THIRD LEVEL</b></p>	<p><b>Repeated movements:</b></p> <ul style="list-style-type: none"> <li>• Rubbing, walking, rocking and making different sounds, crying, calling, humming, mumbling or singing</li> <li>• The person rarely recognises familiar faces, e.g. relatives, neighbours, care staff, and occasionally reacts to people and things from the past</li> <li>• The sense of „I“ is often lost</li> <li>• The person responds to touch and direct gaze, but quickly averts their eyes</li> <li>• A person can no longer (or only with difficulty) perform familiar activities and often suffers from incontinence</li> </ul>	<p><b>Validation behaviour/therapy</b></p> <ul style="list-style-type: none"> <li>• We use words with multiple meanings</li> <li>• Repeat words that people with dementia use</li> <li>• Trying to associate certain behaviours with the need to use touch, music and mirroring (being careful not to imitate the person, only their behaviour, e.g. walking down the corridor, dusting etc.)</li> </ul>
<p><b>FOURTH LEVEL</b></p>	<p><b>Vegetation:</b></p> <ul style="list-style-type: none"> <li>• Own initiative no longer exists at all or only marginally</li> <li>• The person does not recognize relatives (even if they visit daily)</li> <li>• Does not show feelings (at least in a way that is visible to others)</li> <li>• Often his eyes are closed and it is not apparent that he is aware of his own body</li> <li>• He doesn't talk anymore or hardly at all</li> <li>• She's incontinent</li> </ul>	<p><b>Validating behaviors/therapies:</b></p> <ul style="list-style-type: none"> <li>• Focus on concentration, touch</li> <li>• Use music, basal stimulation and stimulating essences</li> <li>• Talking to a person with dementia in complete sentences</li> </ul>

## **3. TECHNIQUES AND FORMS OF SUPPORT FOR PEOPLE WITH DEMENTIA**

### **3.1 Meaningful activities for people with dementia and their presentation**

Every human being is worthy of dignity, caring for and treating the sick is extremely important. People with dementia gradually need conscientious support and help from those around them. Dementia is a disease that develops over a long period of time (research shows that roughly between 8 and 10 years or more). Different stages of dementia require different levels of help and support from those caring for people with dementia.

Work, employment, hobbies, leisure activities, caring for others, housework, personal care and other everyday activities maintain an individual's identity, sense of competence, security and self-worth. When a person gradually notices that he or she can no longer do everything as well as before, he or she needs emotional and physical support from those around him or her, most often relatives.

Any activity that a person can still do maintains their sense of competence, worth and satisfaction, which is why gradual and planned family support is important. Just as with children, it is said that if you do too much for them you do them a disservice because they will not learn on their own, and so it is with people with dementia. The only difference with them is that we don't do things for them that they can still do for themselves so that they can learn something new and become independent, but rather to keep them vital for as long as possible. Every activity maintains or enhances the vitality of thought processes, sensory perceptions and motor functions. Preventive activity is therefore essential. Research shows that various leisure activities that maintain and strengthen the brain's plasticity can even slow the progression of dementia or enable a person to remain independent for as long as possible.

Therefore, it makes sense to continually check what the person can still do on their own and where they need support. In the early stages of dementia, the person may only need a little support (e.g. writing notes on where to put things, help with money management, walking to town, shops etc.). Later on, the ability to do household chores (cooking, working in the workshop, etc.) will gradually decline, but the fine motor skills will still be managed so that the person can engage in partial tasks. For example, he can cut, peel, fold, etc. You can also organise various leisure activities that will stimulate and maintain the functions and abilities retained. For example, if a person cannot remember what he/she ate last time because his/her short-term memory is deteriorating, he/she may be able to tell stories from his/her life while looking at home photographs. Such activities can relax him and keep him feeling confident, self-esteem, content and connected to others.

People with dementia need a different, unique approach that requires great flexibility and adaptation on the part of relatives and carers, as well as special skills in communicating and working with them. It is difficult when you give the person your time, doing the best you can for them (e.g. cooking lunch or taking them for a walk, playing a board game) and they don't remember or recognise you. It takes a lot of emotional and mental adjustment and understanding.

Below are some activities that are suitable for people with dementia and advice on what you should look out for when doing an exercise or activity.

### **3.1.1 Suitable room preparation**

Remove unnecessary items and notes from the table and activity materials. Reduce noise and ensure that there are no other distractions in the room. All of these distract from focusing on the activity.

### **3.1.2 Less talking, more showing**

For advanced dementia, always show how to do the activity – simplify or modify it if necessary. Speak as little as possible and show the activity as clearly as possible, as this makes it easier for the person to follow what is needed. This is because the ability to process words declines earlier, while the ability to process gestures and visual signals persists longer.

### **3.1.3 A selection of meaningful activities**

For people with dementia, the use of familiar things is an important factor for successful learning. When selecting didactic materials and other aids, it is essential to present or offer activities that are familiar to the person or to take into account their previous interests and hobbies.

For a person who was a cabinetmaker by trade, the sight of familiar tools can awaken explicit memories. This allows us to spend time together reminiscing about old stories, but it also evokes the emotions that are part of that memory. For people with advanced dementia, for example, the tool shed is an extremely simple, individualised activity.

### **3.1.4 Choice whenever possible**

When training people with intermediate to advanced dementia to strengthen motor skills and other implicit-procedural memory functions (memory for facts, since explicit memory is already declining), you must avoid open-ended questions that require recall of facts.

The goal of training to strengthen memory or recall skills is to make a person feel good and successful, whereas if they are embarrassed they may withdraw into themselves. We help by offering a choice between two answers, one right and one wrong: "Is the picture a Slovenian or an English flag?", "Would you like to drink milk or apple juice?", "Would you like to do a puzzle with a cat or a train?". In this way, the answer is already offered and the person can more easily make automatic connections with implicit and explicit memory.

It is also always better to invite a person to participate in an activity than to ask them to do something. For example, "Would you help me put these puzzles on the table?", "Would you help me wipe these dishes?".

### **3.1.5 Repetition of activities to achieve success**

It is best to practice activities and routines that are still retained because procedures and routines are part of implicit memory, which is one of the longest lasting memories. The more times one practices them, the more successful one will be at them. The satisfaction of success also affects well-being and self-esteem. An individual may not remember that he or she has done a certain procedure or activity before, but the process of doing it will remain in his or her memory. Where dementia is already very advanced, repeating retained or partially retained routines will have a greater impact than teaching individuals with dementia new skills.

These activities can also be carried out using common tools such as a toothbrush, scrub brush, combs and cutlery. All of these items can be hidden in a bag or placed in a box with a hole and the person can identify them by touch alone (without using their eyesight). If he or she recognizes the item, he or she pulls it out of the bag or box.

### **3.1.6 Breaking the process down into a few simple steps**

Because routines and procedures are among the longest or at least partially maintained skills, familiar routines should be reinforced and repeated. Even if the performance of previously routine tasks is already impaired, they can be maintained by adapted presentation and constant repetition. Simple routine acts can also be learned and familiarity with the routine maintained.

Classical conditioning is also part of implicit memory and is based on internalized behavioral patterns – it represents an activity where a certain stimulus automatically triggers another stimulus. For example, if you throw a ball to someone, they will automatically react, reach out their arms and try to catch the ball. Similarly, when you hear a familiar song or a familiar saying, you automatically respond. For people with dementia, such skills, stored in implicit memory, can be used to train motor skills or communication.

For example, if we suggest that a person vacuum their apartment and point to a vacuum cleaner, they will probably automatically grab the handle of the vacuum cleaner and start vacuuming. Thus, the process of vacuuming is preserved because routines are part of long-term implicit memory. A similar simple activity might be folding laundry, towels, kitchen towels.

If a person has ever done a puzzle in the past, they will automatically start doing it. Otherwise, we need to show the person how to do the puzzle and then ask them to do it again. The difficulty of the puzzles must, of course, be adjusted to the level of dementia.

If you are helping a person to make tea, you first need to find a kettle, then pour water into it, turn on the stove, wait for the water to boil, take out the tea, take a tea bag, put it in the water for a certain amount of time and sweeten the tea if necessary. To help the person find the teapot (and the rest), it is advisable to stick a photograph of the teapot on the cupboard where they find it, as with advanced dementia they no longer remember where it is kept.

You must take care to show him the steps of preparation slowly and then let him complete each step on his own – and only then move on to the next step. As you assist the person, observe and assess whether you have broken the whole tea-making process down into simple enough steps that the person can complete satisfactorily – if you observe carefully, you will be able to adjust the process appropriately.

### **3.1.7 Progression from easy activities to more challenging ones**

The activity is always adapted to the development of dementia. Instead of focusing immediately on playing the cards correctly, you let the person sort the cards simply at first and then gradually move on to more complex sorting or play. After a few repetitions, mastering the procedures will become increasingly successful, and eventually you can move on to more complex versions of the game.

One of the activities that people with dementia like to do is colouring or painting. Again, the principle of simple to complex should be followed. For milder forms of dementia, we can offer more challenging activities in the form of mandalas or more complex colouring activities. For more advanced forms of dementia, colouring activities with simpler themes may be appropriate.

### **3.1.8 No pressure – not a right or wrong solution**

Focus on the flow of the activity and less on the accuracy of execution and achievement of the goal. The person may not get everything right, nor may they complete the activity. What is important is the enjoyment of and participation in the activity. Do not correct the person for doing something wrong.

### **3.1.9 Adjusting speed and traffic volume**

A general guideline for communication is to speak as much as the person with dementia speaks (adapt to their level of speech). When speaking, do not correct her, speak calmly, a little more slowly, concisely and in a warm voice. Even if the conversation is not meaningful, it has a positive effect on the person with dementia because your reactions and talking are a sign that you respect their desire to socialise and communicate.

### **3.1.10 The importance of music**

Cognitive decline occurs independently in different areas of the brain. The right side of the brain, which has the ability to perceive hearing, sounds and music, tends to be affected later than the left side as dementia progresses. This is why people with dementia are observed to remember song lyrics and melodies even when other memories no longer function well. By singing with the person, playing a musical instrument or listening to certain music, you can re-establish the bond between you and the person and stimulate the area of the brain where the implicit memories are located. The positive effects of such communication are invaluable even for the person with dementia.

### **3.1.11 Visual, auditory and tactile sensations – shortcuts to our personal memories**

You can also use visual material to stimulate visual perception. Pictures or photographs should be from the individual's everyday life, from the recent or more distant past, from professional life, etc., and should facilitate the recall of explicit memories.

You can also stimulate the senses of smell, taste and touch. When a person smells their favourite, familiar smell, it activates long-term episodic memory, where the smells and tastes of familiar foods and drinks, and other important areas, are stored. If the smell is recognized and named, long-term explicit and semantic memory is also activated. Using special sensory aids, memories can be stimulated creatively using multiple senses.

### **3.1.12 Test of different activities**

Try new and different activities as this will allow you to find activities that the person will enjoy. All of these activities will encourage communication and create a stronger bond between you and the person with dementia who will feel accepted and safe.

## **3.2 Brain and memory training**

### **3.2.1 Brain and cognitive reserve**

Brain training can slow cognitive decline or reduce the risk of it. It promotes the growth of new nerve cells and connections between nerve cells, reducing the formation of neuritic plaques in the brain. Every movement, every word spoken, every vivid image we picture in our mind stimulates different areas of the brain.

What we do with our hands or body movements, we also do with our senses, and the brain registers it all. The more frequently and intensely we perform an activity, the more likely we are to make or maintain certain neural connections that serve us well in our daily tasks and activities.

Training causes changes in the brain. When an activity is performed, neural connections are made by activating two neurons and creating a connection between or connecting them. If this connection is repeated several times as a result of repetitive or emotionally very intense sensory stimulation, a new, stronger connection is formed between the two neurons through chemical processes.

These processes are dynamic, and the more one trains and makes neural connections, the more our sensory perceptions and motor skills are used and developed, strengthened, and at the same time become more sophisticated or sensitive, and one becomes more and more skilled and precise at a given exercise or task.



Cognitive or mental training also refers to the processes by which new synapses and new neurons are created. When a person strengthens a neural network, he or she makes new connections and connects the existing network with new ones. Cognitive training, exposure to an environment with many different stimuli, which includes greater social integration, increases the brain's plasticity. In this way, it allows one to use the additional brain capacity created.

Training that involves several complex cognitive functions at once (e.g. spatial orientation, visual memory, planning, motor memory, information processing speed, etc.) will be more effective and its success will carry over into everyday activities:

- For example, if attention is strengthened, the effects of training are transferred to other areas such as memory, visual and auditory perception, endurance, etc. (Kavčič, 2015) because these areas are connected to several areas in the brain.
- Social games (puzzles or mind games for a short time, sudoku, knitting, crocheting, etc.) improve attention, memory, orientation and thinking.
- Training in multitasking or multitasking memorization techniques also leads to more successful transfer to everyday tasks that require memory skills (Lustig, 2009). Multitasking is also used in driving a car, repairing a machine, memorizing while walking down the road, etc.
- Computer-based cognitive training is particularly effective because it stimulates several cognitive and perceptual functions simultaneously, provides immediate feedback on progress, allows adjustment of task difficulty, and has a positive effect on motivation.

If a person is not very active or inactive in a certain area, nerve connections are not formed because they are not using them, and they will eventually die or die. These anatomical and physiological changes occur throughout life, regardless of age. Therefore, various preventive training and tasks that strengthen sensory, motor and cognitive functions are important to maintain brain vitality and resilience throughout life.

The greater the cognitive reserve, the more resilient a person is to the cognitive decline associated with aging, because resilience is manifested by denser neural connections. Some research has shown that cognitive reserve can even mask the symptoms of dementia caused by Alzheimer's disease, which is why people who have been more cognitively active and had a more active lifestyle during their lifetime are said to have a lower risk of developing dementia.

There is now scientific evidence that regular mental activity, support and repeated learning of different skills can slow cognitive decline (Schneider, 1998).

In order to be successful, it is important to be sufficiently dedicated to the task and to practice continuously or continuously over a period of time. The more actively one engages in various leisure activities, the slower the cognitive decline (Hughes, 2010).

### 3.2.2 Memory

People have a memory that serves them in their daily tasks. We store experiences in our memory, we recognize faces, we remember other people's names, where we put our keys, when we arranged to meet friends, what favorite music we liked to listen to when we were younger, and so on. But memory is not like a statue on a cabinet, a static thing that cannot be shaped.

Many studies have shown that even memory can be improved and strengthened to some extent. We can slow down or delay the deterioration of memory that is inevitable over the years. Preventive measures are also effective for early and advanced dementia.

We store memory from birth in different parts of our brain, in a multi-layered memory system. Neurons and synapses form a neural network that connects several types of memories.

The types of memory can be simplistically illustrated by the example of drinking tea:

1. Long-term episodic memory: memories of the past, e.g. remembering the taste of tea, the shape of a cup of tea, the heat. All these memories then trigger the desire to drink tea.
2. Long-term semantic memory: this memory stores everything we know about tea: e.g. the name of the tea, its medicinal effects, what the plant looks like, etc.
3. Long-term implicit-procedural memory: this memory stores the motor skills and knowledge that allow the entire process of making tea to be carried out correctly: take the teapot, put it on the fire, pour the tea into the teapot, prepare the cup, pour the tea into the cup, and finally drink the tea. This memory also allows you to recognize language, sounds, syntax, and words.
4. Short-term and working memory: attention and concentration allow one to keep track of what one has and has not done during the process. It helps, for example, to remember whether or not he has sweetened his tea.

Before we can remember the information, it must be received by our senses, which open the way to the brain. We receive information in the form of a stimulus. A stimulus can be a picture that our eye sees, pleasant melodic music that our ear picks up, or a warm hand that someone offers us. Stimulus is also the news we receive through the media, in writing when we read a newspaper or in sound when we listen to a television presenter. All these stimuli are received by the sensory or feeling system. This system selects, selects and receives sensations which then enter the memory system.

The next step, when the stimulus passes through the gate of perception, or the first step of remembering, takes place in short-term memory. It is the first step in the process of remembering information, which is the process of holding it for a short period of time or temporarily to decide how important it is to us. This memory is different from attention, but it is also the immediate attention span. An example to illustrate this is when a neighbor tells us his phone number and we repeat it to ourselves. Short-term memory has a limited ability to retain information that is then transferred to more permanent working or long-term memory, and also a limited retrieval ability. We are known to be able to take in approximately seven units of information at a time.

Short-term memory is also a central process that functions as a subsystem controlled by executive functions. This central process is called working memory, which is the temporary storage and processing of information in order to solve problems and perform other cognitive operations that require a little more time. The idea is to keep information in memory for a while and later store some of it in long-term memory.

Information retrieval and recognition are also important elements of working memory because the impact of memory depends on how completely and easily information can be retrieved.

Long-term memory is the brain's library, which contains not only knowledge but also the tools to perform actions that we used to have to learn but now know almost automatically. All the skills we use in our jobs, chores and hobbies are stored here. Long-term memory is also about learning. The process of storing this data and information in long-term memory, or consolidating knowledge, can happen quickly or it can take longer to consolidate – even without activity, through reflection or unconsciously (Lezak, 2012).

### **3.3 Sensory activities for people with dementia**

We perceive our surroundings and receive information through our senses (sensory perceptions), which allow us to connect with the world. Sight, hearing, touch, smell, taste and smell allow us to transmit stimuli to the central nervous system in the brain, where we form an internal picture of the environment we come into contact with. We then name the stimuli and store some of them in long-term memory. Information from the environment travels through neurons via sensory receptors, through a sequence of several layers of neurons in different parts of the brain, and then connects with motor responses, reflexes, pain centers, emotions, memories, the area where we give meaning to sensations, and the area of speech.

Sensory and motor functions are interdependent. They are linked to fine motor skills and motor reflexes. Sensory signals mediate, reinforce and support motor movements and thus help to regulate and refine movement.

People are often very sensitive to certain environmental stimuli. This sensitivity can increase with age and the presence of dementia. He can therefore stimulate his senses through activities in the sensory area. That is, sight, hearing, taste, smell and touch. Let's look at some examples of therapies that can have a positive effect on awareness of the body and our senses:

- Sight can be stimulated by various lighting effects or by looking at pictures and letting the person recognise colours.
- The aroma can be stimulated by using various essential oils, herbs, cooking.
- Sound is stimulated by playing and listening to music, playing a musical instrument, singing or dancing. The perception of music is easier if the music is familiar to the person beforehand.

- Touch is also very important to give older people a sense of security. It may just be important to remind the person to touch first, as the sense of touch can change a lot in old age.
- The dream room (Snoezelen), or multimedia room, is used for therapy and calming. In such a room, a person can conjure up a place where he or she used to like to go. The music, smells, and light can remind someone of their home kitchen or another place they have fond memories of. You don't need a special room to achieve the effect of a dream room, but a quiet corner can be created in your own home. Diffusion sprays can be used, for example with the scent of lavender, which has a very calming effect. You can also add soft music and dim the lights. Basically, you don't need any special materials or objects, and you can find the snogreen outside, listening to the birds in the woods or the gurgle of the river as you walk over uneven ground.
- A person with dementia needs closeness. Touch makes them feel safe and needed. Don't be afraid to take your grandmother or grandfather's hand, stroke or squeeze them. Help him or her sing his or her favourite song or have coffee and cake with him or her. Your closeness and awakening of the senses is sure to brighten their day.

### **3.4 Motion support**

Motor movement is an intricate and complex process that takes place in the motor and sensory cortex. Even a minimal disturbance in the sensory or motor cortex can disrupt the movement of a single finger, resulting in difficulty performing tasks requiring manual dexterity or difficulty with gait and balance and movement in general.

Because sensory and motor input activate different areas in the brain, training that stimulates sensory and motor function has positive effects in several areas of functioning and on the neuroplasticity of our brain. Movement, singing or drawing also have an effect on improving thought processes, speech, language, visual perception, etc.

Exercise is very important for people with dementia, especially those aged 85 and over. Movement is one of the effective preventive mechanisms that slows the progression of the disease. Adapted exercise can help maintain psychophysical fitness, reduce the risk of falls, enhance stable gait, balance and upright posture, and preserve cognitive reserve.

Movement is often impaired in people with dementia because the symptomatology of the disease can lead individuals to withdraw into isolation and become less physically active. People with cognitive impairment are at higher risk of falls and injuries. Impaired cognitive function leads to impaired attention and executive function, compromising gait stability, upright posture, strength, endurance and balance. Cognitive decline is caused by impaired sensory-motor processing, resulting in slow and stiff gait, difficulties with balance control and upright posture, and increased risk of falls. They may have restless legs syndrome or longer reaction times when receiving and responding to environmental stimuli.

In addition to impaired executive function, mobility, gait and balance, people with dementia are affected by behavioural-psychiatric disorders, orientation and memory problems, high blood pressure or hypertension, dizziness in old age, visual disturbances, urinary leakage and more.

People with dementia often misjudge potential dangers in their environment and overestimate their mobility, and taking neuroleptics or antipsychotics, as well as the combined effect of several drugs, often increases the risk of falling.

The most common movement complications in old age, summarised in the NIJH 2021 report, show that 20–30% of older people fall each year and falls are the leading cause of death after age 65. In Slovenia, up to 273 older people die from hip fractures each year.

This is certainly reason enough to take preventive measures to improve your psychophysical condition, stability and balance when walking.

Let's look at some of the positive effects of a simple walk.

Walking prevents falls, strengthens the muscles, tendons and ligaments in the joints and increases the stability and rhythm of walking. Spatial vision is strengthened, restless legs syndrome is alleviated, stiffness and walking with slipping hazards are reduced. Walking is suitable for all ages and has a stimulating effect on the cardiovascular system, blood circulation and oxygen and nutrient supply. Walking can be combined with conversation, which strengthens vocabulary and allows sharing of experiences and stories. It is an excellent link with other activities that evoke memories of the person with dementia's youth. For example, a tour of the house where the person with dementia lived when they were a student, or a visit to the sports hall where they skated in their youth. Anything that triggers or recalls positive memories of their youth is welcome. It is the long-term memory that lasts the longest in a person with dementia.

However, before you set off, make sure your relatives have all the necessary items:

- For example, a hearing aid, glasses, a walker, roller skates or crutches. The person with dementia should also carry a card with contact details for family members in case they get lost.
- Choose less crowded and noisy public spaces and make sure you take sufficient rest breaks.
- It is very important to ensure adequate fluid intake and wear comfortable shoes with soft, non-slip soles and low heels. Orthopaedic shoes are recommended.
- If your relatives are still fit enough to ride a bike, this type of recreation can be very useful for strengthening the cardiovascular system, coordination, knee joints and thigh muscles, orientation and awakening the adventurous spirit. Just make sure that as many of your trips as possible are on well-maintained trails away from traffic and that they are mostly flat. Remember to wear a safety helmet and knee pads if necessary.

Stretching and strengthening exercises are also very welcome. Older people can also do them on a chair or with the help of elastics. Elastic bands are stretching rubbers that increase endurance and stamina when exercising without putting too much strain on the body. They are suitable for beginners, have different levels of difficulty and are affordable.

All of the above activities bring many benefits to older people. In our experience, older people who take part in any sporting activity report that they have more energy, feel more useful, enjoy socialising with younger generations, seek more company and make new friends

during the activity. Their relatives also tell us that they sleep much better, repeat the same stories less and talk less out of turn, have a better appetite and are fitter, more sociable and more optimistic.

### 3.5 Basal stimulation

Basal stimulation is a concept of support, care and guidance for people who need help from a 2nd person, developed in 1975 by German professor and special educator Andreas Fröhlich when working with physically and mentally disabled children. In the 1980s, the concept was transferred by nurse Christel Bienstein to nursing care for adult patients. Nowadays, the concept of basal stimulation is used to train staff in the social, medical and pedagogical sectors when working with children with mental and physical disabilities.

The basic types of the concept of basal stimulation include:

- **Somatic** – helps the client to perceive their own body. The most commonly used are massages, which can be either stimulating or soothing. Stimulating bath massages are the most commonly used in residential facilities, and clients may like them and ask for them themselves. Special basal stimulation gloves are used for massages, which are very pleasant to the touch. Other methods include nest positioning, using a positioning bag, for which it is important to choose a comfortable material. A rubber one, which sticks uncomfortably to the skin, is definitely not suitable. This method is intended to make the person feel calm and safe.



Gloves for massage



Positioning bag

- **Vestibular** – helps with orientation in space and awareness of position in it. The “Oat Cob” method is used. This method is not suitable for clients with cervical spine disease, there is a risk of dizziness and nausea.
- **Vibratory** – helps to perceive the vibrations and vibrations of the spoken word – rhythimization of the breath, hand vibration techniques are used – not everyone is comfortable with vibrations.

The primary purpose of these elements is to stimulate and provide basic life functions such as: breathing, eating, sleeping, or feeling warm. The secondary aim is to achieve mobility and independence, security and safety and a sense of acceptance through communication. All the touches performed must be gentle and calm, not provoking pain but at the same time important for the client’s perception of the body schema.

The superstructure types of the concept are:

- **Tactile haptic** – tactile sensations, placing foam balls or rolled bandages in the palms of the hands. Most often we work in the field of Zootherapy and Canisterapy, because as we know, animals have a positive influence on humans. However, we need to find out if the client is afraid of any of the animals.
- **Olfactoric (olfactory)** – smells that evoke memories of a certain person, situation, environment, in short, anything that triggers a reaction. Most often, scents are used in Aromatherapy.
- **Optical (visual)** – stimulation of the visual system. It is necessary to pay attention to geometric shapes and color combinations on the walls, especially on the ceiling – they can cause hallucinations. It is also necessary to observe what one likes and what one does not like. The same sensation does not affect everyone in the same way.
- **Auditory** – stimulation of the auditory system, reading, listening to stories, songs – recalling memories with familiar sounds.
- **Oral** – taste stimulation, favourite liquids and snacks stimulate taste receptors. Beware that tastes change over the course of a lifetime, what a person liked in their 40s they may not like later. Proper administration is also important in the case of mixed diets. Use plates separated by dividers for meat, side dishes, potatoes, or dumplings. Test to see if the client recognises what he is eating. Most often used with clients with the highest level of support and reduced swallowing ability.



Taste Stimulator



Plate for mixed food

All of the above elements can lead to the improvement or regaining of a person's cognitive and motor skills. Basal stimulation focuses on basic needs and the steps to fulfil them.

Staff often work with the Client Life Story, which is developed by the client or the client's family, and brings staff up to date on significant events in the client's life.

Another integral and very important part is the **Initial Touch**. The location of the Initial Touch is visibly written on a plaque hanging on the wall, right at the client's bedside. A figure outline is inserted on the board, where not only the touch that is pleasant to the client (marked in green) but also the touch that is unpleasant (marked in red) is indicated. Touch should be used by all those who approach the client, each time they begin and end a conversation or other activity with the client. In addition to touch, address is also credited on the chart, as mutually agreed with the client. Initial touch goes "hand in hand" with addressing the client. There are clients who do not wish to be touched; this wish must be respected.

A basal stimulation questionnaire is also used with the client, which contains information from each client's life and is used to get to know their personality. We find out, for example: what type of personality the client has, what his/her occupation was, how often the client is used to washing, what temperature of water he/she likes, how he/she wants to be addressed, how the client handles stressful situations, favourite/unfavourite foods, what tastes he/she likes. Based on the initiation of Basal Stimulation with the client, a Basal Stimulation Plan is developed that goes in depth with the information and focuses on each client's senses and a description of the specific type of Basal Stimulation. Trust between client and worker is deepened. The individuality of the person is respected.

Basal stimulation is becoming more and more in the social services subconscious. As part of the improvement of their service, many homes are seeking to obtain the so-called Certificate of Workplace working with elements of the Basal Stimulation concept. This certificate is awarded for three years and is preceded by theoretical and practical supervision. In total, the staff is trained in the Basic BS course – 24 hours and in the follow-up course – 16 hours. In order to achieve the aforementioned quality certificate, the Home must meet the requirement of 70% trained staff, which is not only time-consuming but also financially demanding. The renewal of the Certificate is again preceded by theoretical and practical supervision.

## **4. COMPANIONSHIP AS A FORM OF HOME SUPPORT FOR PEOPLE WITH DEMENTIA**

Companionship is a social care service in long-term care for seniors aged 65+ regardless of their condition, illness or disability. It combines emotional and social support for older people, maintains involvement in the local community, enhances individual independence and activity and helps to pass on knowledge and experience to younger generations. A companion not only provides personal care and cleaning, but also helps older people to live more functional, dignified and secure lives in their own homes.

People with dementia in the early stages of the disease choose informal forms of support, such as companionship, to stay as long as possible in their home environment, which they know, love and have many memories of, and to delay their move into residential care, which has struggled in recent years with staff shortages and spare capacity. There are several types of accompaniment: individual, group, telephone, with individual accompaniment being the most popular, tailored to each individual's needs, abilities and preferences.



## **5. CARE FOR PEOPLE WITH DEMENTIA IN HOMES FOR THE ELDERLY**

### **Social services in the Czech Republic for people with dementia and the elderly**

In the Czech Republic, seniors and people with dementia can use residential, outpatient and outreach services. Everyone can choose which service they are interested in, depending on the degree of illness, level of self-sufficiency, family time, financial demands of the service and the capacity of the organisations offering these services.

Residential services provide accommodation and day care for clients, ensuring they have all their basic needs met. The staff, who are available throughout the day and night, create a program to develop the cognitive abilities of the clients, engaging them in basic activities that do not make them lose their ability to communicate, socialize and contact with reality. Clients are provided with all-day meals and care.

Benefits of residential services include comprehensive care, medical supervision, transportation to the hospital, social interaction with peers, opportunities for activities and outings, and relief for the family. On the other hand, the client has to get used to an unfamiliar environment, loses privacy, daily contact with family and is surrounded by strangers.

Outpatient services are used by caregivers who need to continue to commute to work, but the care of a loved one is so demanding that it is not covered by outreach services in the client's home environment.

The outpatient facility provides hygiene and nutrition services and the daily programme is tailored to the needs of the target group. The service can be used on a weekday within the range of operating hours of the specific facility, but there are also options such as morning visits, regularly scheduled only on certain days of the week, etc.

Outreach services provide support and assistance most often in the client's home environment. They include care services, personal assistance and nursing care. The basic principle is that the employee takes care of the client within the framework of agreed tasks - hygiene assistance, help with meals, grocery shopping, household cleaning, doctor's visits, house-keeping. This type of service is usually chosen by clients and their families when the need for assistance is greater than the family can manage and the person wants to remain in the home environment but the family is unable to provide basic needs.

The advantage is that the person does not lose daily contact with his/her relatives, home, remains partially independent and in an environment where he/she feels comfortable and happy. In addition, this form of social service is less expensive. The negative side is that it is not a comprehensive care, the caregiver may not be immediately available in crisis situations and the family is not completely free from caring for the loved one.



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