

Medicines to help memory and thinking

Factsheet 407LP
October 2022



Although no current medicines stop, slow down or reverse dementia, some can temporarily help a person with their memory and thinking. These treatments are only effective for people with Alzheimer's disease, dementia with Lewy bodies, Parkinson's disease dementia, and mixed dementia involving any of these types.

This factsheet describes the medicines used to treat the symptoms of dementia, how effective they are and the side effects associated with them. It also includes practical advice about taking and stopping medicines.

There aren't yet any medicines that improve the symptoms of vascular dementia or frontotemporal dementia. However, medicines should never be considered as the only source of hope. Information and advice, activities, social support, and treatments that don't involve medicine are just as important in helping someone to live well. For anyone interested in these options see booklet 872, **The dementia guide: Living well after diagnosis**.

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Medicines to help memory and thinking

Medicines for dementia symptoms

There are four medicines approved in the UK to ease a person's dementia symptoms, including memory and thinking problems.

Substance name	Examples of brand names	Form of medication
Donepezil	Aricept	<ul style="list-style-type: none"> ■ Standard tablet ■ Tablet that dissolves on tongue ■ Liquid
Rivastigmine	Exelon, Almuriva, Alzest and Prometax	<ul style="list-style-type: none"> ■ Capsule (a long pill) ■ Skin patches ■ Liquid
Galantamine	Reminyl, Acumor XL*, Galsya XL* and Gatalin XL*	<ul style="list-style-type: none"> ■ Standard tablet ■ Slow-release capsule* ■ Liquid
Memantine	Ebixa, Nemdatine and Valios	<ul style="list-style-type: none"> ■ Standard tablet ■ Tablet that dissolves on tongue ■ Liquid

* Slow-release capsules release the medicine into the body gradually. Standard tablets and capsules release the medicine into the body as soon as they are swallowed.

Many medicines have at least two names:

- a name for the main substance in the medicine, such as donepezil
- a brand name, such as Aricept.

How do these medicines work?

Donepezil, rivastigmine and galantamine belong to a group of medicines called cholinesterase inhibitors and they all work in a similar way. Memantine works differently.

Donepezil, rivastigmine and galantamine

A healthy brain contains natural chemicals that allow nerve cells to talk to each other. One of these chemicals is called acetylcholine. When a person has Alzheimer's disease or dementia with Lewy bodies, they have less acetylcholine. This means that their nerve cells lose the ability to talk to each other properly.

Cholinesterase inhibitors, like donepezil, rivastigmine and galantamine, can boost acetylcholine levels. This helps to keep the brain working normally for longer. All three cholinesterase inhibitors work in a similar way, but one might be better for someone than another. For instance, a person may have fewer side effects from one.

Eventually, the disease will damage enough of the brain that these medicines have much less of an effect. At this stage, the person's symptoms will start to get worse again.

Memantine

Memantine works differently to the other medicines. People with Alzheimer's disease can have too much of a chemical called glutamate. This damages their nerve cells and makes it harder for them to send messages. Memantine protects a person's nerve cells by blocking glutamate.

See page 8 for information about when memantine is used.

Who do the medicines help?

Medicines for memory and thinking help some people more than others. In clinical trials involving people with Alzheimer's disease who have taken a cholinesterase inhibitor for six months:

- about one out of ten people will show a clear improvement in their memory and thinking
- about one out of ten people will experience unpleasant side effects
- around eight out of ten people will feel no noticeable difference.



Noticeable improvement in symptoms

Unpleasant side effects

No benefit or side effects

There have been fewer clinical trials involving people who have dementia with Lewy bodies or Parkinson's disease dementia. However, there is evidence to suggest that the benefits of cholinesterase inhibitor medicines are greater in these conditions than for Alzheimer's disease.

It's not possible to know in advance if a person's symptoms will improve with treatment, as everyone responds differently. However, many people feel that it's worth trying. If the medicine doesn't seem to be helping, it's important to speak to the GP before stopping (see page 16).

When a medicine does help someone, symptoms tend to improve after a few weeks. This then usually lasts for between six and 12 months. At some point, the symptoms will gradually start to get worse again, even when the person is still taking the medicine.

Researchers have tried to see if these medicines also help with changes in behaviour, such as agitation or aggression. Unfortunately, it's currently unclear if they do.

These medicines are only prescribed to people with a diagnosis of dementia. They don't help people who have less severe problems with memory and thinking, known as mild cognitive impairment. See factsheet 470, **What is mild cognitive impairment (MCI)?** for advice on managing MCI symptoms.

Donepezil and rivastigmine

Donepezil tablets are by far the most common medicine used to treat dementia. Rivastigmine tends only to be used when donepezil causes side effects, or if the person can't take it for medical reasons.

Benefits

A person in the early or middle stages of dementia caused by Alzheimer's disease may find that taking donepezil or rivastigmine helps with their:

- mental abilities, such as memory, concentration and thinking
- ability to continue doing daily activities (such as managing money, shopping or cooking)
- mood
- motivation.

A person in the early or middle stages of dementia with Lewy bodies or Parkinson's disease dementia may find that taking donepezil or rivastigmine helps with their:

- mental abilities, such as memory, thinking, attention and alertness
- anxiety
- motivation
- delusions and hallucinations
- ability to continue doing daily activities.

Dose

Most people start taking a 5mg donepezil tablet once per day. This is often increased to 10mg per day (the maximum licensed dose) after four weeks.

With rivastigmine, most people start taking a 1.5mg capsule twice a day, with morning and evening meals. The dose can then be increased every few weeks, up to a maximum of 12mg a day.

Rivastigmine is also available as a skin patch, which can help when a person has difficulty taking medicine by mouth, or if it makes them feel sick.

Galantamine

Galantamine isn't prescribed very often. It can be used to treat the symptoms of Alzheimer's disease. However, doctors are more likely to offer a person donepezil and rivastigmine first.

It's not known whether galantamine helps people with dementia with Lewy bodies or Parkinson's disease dementia.

Dose

A person taking galantamine would normally start taking a 4mg capsule twice a day, with morning and evening meals. The dose can then be increased every few weeks up to a maximum of 24mg a day. Galantamine is also available as a slow-release version, which can help to reduce side effects.

Memantine

Memantine is used to treat people in the middle and later stages of Alzheimer's disease or dementia with Lewy bodies. It can help with worsening mental abilities, such as confusion or feeling lost, and problems carrying out daily activities, such as getting dressed. There is some evidence that memantine may also sometimes help with delusions, aggression and agitation.

For more information see factsheets 408, **Drugs for behavioural and psychological symptoms in dementia**, and 509, **Aggressive behaviour**.

Taking both memantine and a cholinesterase inhibitor may sometimes help someone with late-stage Alzheimer's more than the cholinesterase inhibitor alone. This may be because the drugs work in different ways.

Dose

It's common for a person starting to take memantine to be given a 'starter pack'. This contains pills of different strengths to allow them to work up to an effective dose over several weeks. They start with a low dose of 5mg a day and then increase every week by 5mg, up to 20mg a day after four weeks.

Are there any side effects?

Side effects are common for people taking medicines for dementia symptoms. For most people, these get better after a few weeks of taking the medicine. However, not everyone has the same side effects, or has them for the same length of time. Occasionally, these medicines can also cause more severe side effects – particularly when taking higher doses.

If the medicine is not helping, or the side effects are not worth the benefits, it's important to talk to the doctor or pharmacist straightaway. These medicines are not essential or life-extending. It may be possible to try another medicine that has similar benefits but causes fewer side effects.

Some people with dementia may find that the benefits of taking medicine are not worth the side effects. The decision to continue with them is therefore very much a personal choice. See page 10 for advice on stopping medicines.

Side effects of donepezil, rivastigmine and galantamine

The most common side effects of donepezil, rivastigmine and galantamine are:

- loss of appetite
- feeling sick (nausea)
- diarrhoea or vomiting
- headaches
- feeling tired or dizzy
- difficulty sleeping well.

When to see a doctor

If these side effects are concerning or do not go away after a few weeks, it's important to talk to the doctor or pharmacist. It's essential to ask for advice first before stopping a medicine because of the side effects. See page 16 for more about stopping medicines.

More serious side effects of these medicines are less common. These include:

- severe stomach pain or persistent vomiting
- having very dark, black poos (caused by bleeding in the gut)
- seizures or convulsions
- muscle weakness or pain along with a high body temperature or sweating (fever).

They can also cause unsteadiness or fainting, which increases the risk of falling. Occasionally, a person may become confused, agitated or restless. Always read the label inside the box, which contains a full list of possible side effects.

If any of these happen, talk to a doctor straightaway.

Side effects of memantine

Memantine can cause different side effects to the other medicines. These include:

- headaches
- dizziness or problems with balance
- tiredness or shortness of breath
- raised blood pressure
- constipation.

Always read the label inside the box, which contains a full list of possible side effects.

Reducing side effects

Side effects can be less likely when people:

- take the medicine with or after food
- take the lower prescribed dose for at least a month first.

See page 8 for more about taking medication.

The following tips may also help with certain side effects:

- dizziness or nausea – take the medicine in the evening
- being unable to sleep – take the medicine in the morning
- feeling sick or vomiting – take the medicine with some food
- diarrhoea – drink more to avoid dehydration.

Talk to a GP or pharmacist before taking medicines for diarrhoea. See page 13 for more information about medicines for other health conditions.

Using skin patches

When using skin patches, it's vital to remember to take the old patch off, so the person doesn't get too much of the medicine. It's also important to change the place on the body that it sticks to. This prevents the skin from becoming irritated. See page 12 for more about the different forms that medicines can come in.

Getting medicines

Medicines to treat memory and thinking problems are only available on prescription. They are free in England for people who are 60 and over, or who have a payment exemption. In Northern Ireland and Wales, they are free to everyone.

Starting medicines

People who choose to take medicines for their dementia usually start taking them soon after being diagnosed. Their decision to do so should be informed by a discussion with the specialist and, ideally, a person who can support them. For most people, this happens at a local memory service or neurology clinic. Sometimes, a specialist will write to a person's GP or nurse prescriber to ask them to start prescribing the medicine.

Before prescribing donepezil or another cholinesterase inhibitor, the doctor should check the person's pulse (or heart rate) and blood pressure to make sure it's safe for them to take the medicine. If the person already has a slow heart rate or other heart problems, taking the medicine could increase their risk of fainting and potentially injuring themselves.

Getting the right dose and form

Starting on too high a dose of medicine can make side effects worse, so it's best to start with a low dose and gradually increase it over a few weeks. Once the person has settled on a medicine and dose that works for them, the GP will usually take on the role of prescribing.

Medicines can come in lots of different forms, such as pills, liquids, and skin patches. Getting the form of medicine that works best for you makes it much easier to take the right dose at the right time. This can involve a discussion between the person with dementia, the family carer (where available), the doctor and the pharmacist.

Most people will be offered their medicine in tablet form, unless they are unable to take them. A common reason for switching to a different form is if they have problems swallowing. When this happens, it may be easier and safer for the person to try an oro-dispersible tablet, which dissolves under their tongue, or a patch that delivers a drug slowly through the skin.

Medicines for other health conditions

Some medicines for other health conditions can have the opposite effect to those taken for dementia. For example, they may cause confusion or drowsiness. As a result, they can make the symptoms of dementia worse.

It's important to tell the GP or memory service about any medicines the person is taking to treat:

- urinary incontinence and other bladder problems
- anxiety or depression
- allergies or hay fever – particularly those that cause drowsiness
- hallucinations, delusions or severe agitation
- excessive drooling or sweating
- the symptoms of Parkinson's disease
- nausea and sickness
- long-term pain.

Many medicines used to treat these conditions will be safe and effective and will not affect a person's dementia symptoms. However, some may not be suitable and will need to be changed or stopped. It's essential to speak to a doctor or pharmacist before stopping a prescription medicine.

Reviewing medicines

If at any time a person feels that taking medicine for their dementia is no longer the right choice for them, they can talk to their doctor about reviewing the treatment. Their GP, or a pharmacist working at the GP practice, should also regularly review the person's medicines to check how well they are working. This includes whether the medicines are helping the person to function better in everyday life, if they are helping their mental abilities, and if they are causing unpleasant side effects.

If a medicine doesn't seem to be helping, or the benefits are not worth the side effects, then the person may wish to consider other options. This could be changing to another medicine, reducing the dose, or stopping it altogether. The GP may need to involve a dementia specialist, such as the memory service, to make changes to prescribed medicines.

For information about stopping medicines, see page 16.

Taking medicines

Medicines should be taken according to the instructions on the label and in the leaflet. The person may need help with this, particularly if they have sight problems, are not confident understanding English, or if they find the information confusing.

Remembering to take medication

A person with dementia may need reminding to take their medicine at the right time. Many will also take medicines for other health conditions. As a result, it's common for a person with dementia to take many different medicines every day. This can easily lead to confusion and mistakes – for example, missing a dose or taking too much.

There are ways to make it as simple and easy as possible for the person to take their medicine correctly, including:

- **Checklists** – A daily checklist of medicines, which can be ticked off once taken, can be very helpful. These can often be provided by a pharmacist at your GP practice. Having a picture on the checklist for each medicine can sometimes help.
- **Simple steps** – A pharmacist can review the person's medicines and work out the simplest and easiest way to take them all. This can involve reducing the number of doses of a medicine that needs to be taken each day and removing any medicines that aren't needed anymore. It also involves making sure the packaging is easy to open and the instructions are easy to read. To access this service, contact your GP and ask for a medication review.

- **Reminders** – Reminders, such as an alarm, can help people to maintain their medicine routine. Smartphone apps, smart speakers or other devices can be set to remind the person that it's time to take each medicine.
- **Pill boxes** – Pill boxes have different compartments for each day of the week to help a person know which medicines to take when. They can be useful but they aren't always the best solution for everyone. Some have flashing lights or alarms to remind the person to take their medicine. Others will even call a carer if the medicine isn't taken. Some pharmacists can supply medicines pre-packed in blister packs or pill boxes if it's suitable for the person and the medicines they take.

No one solution is perfect. Pill boxes are only useful for pills and tablets – not for other forms of medicine, such as liquids, oro-dispersible tablets (that dissolve under the tongue) or skin patches. They may also not work well if the person loses a sense of what time of day it is.

Reminders also tend to become less effective as the person's dementia develops. Eventually, the person will need more support from a carer to be able to take their medicine regularly and safely.

Professional carers are not allowed to help a person take their medicine if it's been put into a pill box by someone other than a pharmacist. The ideal way for a professional carer to give a person their medicines is by taking it out of the original packaging and ticking it off on a chart, known as a Medicines Administration Record. This should be managed by the care agency who coordinate with the person's GP about changes to prescriptions.

Missing a dose

If the person doesn't take their medicine on time, they should take it as soon as they remember – as long as it is on the same day. If it's the next day, the person should not take any extra tablets to make up for the missed dose. They should just continue with their normal dose.

If they miss taking a medicine that's supposed to be taken twice daily, they should just take one in the evening. It's important not to take two doses at the same time.

Taking medicines when fasting

Many people choose to go without food or drink during the day for religious or spiritual reasons. Some religions make exceptions for people who are unwell or frail, including those with dementia. However, a person may still choose to observe the practices they have followed for many years, while they are still able to.

Fasting can have implications for taking medicines for dementia symptoms. Taking medicine on an empty stomach can make some of the side effects worse, such as feeling dizzy or sick. For this reason, some people may prefer to take their medicine in the evening with food once they have finished fasting. It's always a good idea to check with a local pharmacist on any changes to the way that a medicine is taken, even if they are only temporary.

Avoiding alcohol

Drinking alcohol can stop dementia medicines from working properly. It can also increase the chances of unpleasant side effects. Ideally, medicine should always be taken with a glass of water.

Stopping medicines

It's important not to stop taking a medicine without speaking to a doctor first, as this may make dementia symptoms worse.

Sometimes, a person may accidentally not take their medicine for several days or more. If so, they should talk to a doctor or pharmacist to get advice on the safest way to start again. The person may need to restart on a lower dose and then increase it slowly.

A person may decide they no longer want to take a medicine because they don't think it's helping, or it's causing unpleasant side effects. In these cases, it's still essential to talk to the doctor before stopping the medicine.

Why might someone want to stop taking medicines?

There are several reasons why someone may want to stop taking medicine, including:

- disliking the experience of taking medicine – for example, if it tastes bad or causes discomfort
- being worried about side effects caused by the medicine
- feeling like the medicine is not working.

A person with dementia may have other reasons for not wanting to take medicine, including:

- being suspicious of the person who is offering them medicine because they are experiencing delusions or paranoid thoughts
- pushing back against being told what to do – particularly if they don't understand why they need to take medicines
- feeling uncomfortable, tired, confused or distressed
- having difficulty handling or swallowing the medicine
- being concerned or distressed about recent changes to the medicine, such as a different shape or colour.

Many of these can be resolved with patience and understanding. However, if the person still wishes to stop taking their medicine, it's essential to talk to the GP or memory service first. They may be able to discuss prescribing a different form of the medicine that makes things easier. Ultimately, it is a person's choice whether to continue taking medicines for their dementia, and they should be supported to make the decision that's right for them.

Missing doses of medicines for dementia may make the person's problems with memory and thinking worse. However, it won't cause the disease in their brain to progress any faster.

When do people usually stop taking these medicines?

In the later stages of dementia, medicines that help with memory and thinking are less likely to help as much. However, they still may improve symptoms slightly. Most doctors will continue to prescribe them unless:

- the side effects are having a negative impact on the person's health or wellbeing
- the person can no longer safely take the medicines in the way prescribed, even with support from someone else.

In the last days or weeks of a person's life, doctors will often review their medicines. After discussion with someone who knows the person well, the doctor may then decide to stop dementia medicines.

Research into new medicines

There is a lot of ongoing research into new medicines for dementia. These aim to give people better relief from symptoms or, if possible, to slow down or stop the disease in the brain.

Recently, there have been some exciting results from clinical trials of a new medicine for Alzheimer's disease. Early results suggest the medicine might be able to slow down the disease progressing in the brain. For some people, this might delay symptoms getting worse for a few months. Before the new medicine becomes available in the UK, experts need to make sure that it really works and is safe to use. This process can take several years.

Clinical trials of other medicines that work in a similar way are continuing to take place. It's hoped that over time they will become more and more effective – potentially slowing down the diseases causing dementia by years rather than months.

For more information about taking part in research, ask your local memory service or see the Join Dementia Research website at joindementiaresearch.nihr.ac.uk

Other useful organisations

National Institute for Health and Care Excellence (NICE)

0300 323 0140

nice@nice.org.uk

www.nice.org.uk

NICE provides guidance, advice and information services for health, public health and social care professionals.

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Our information is based on evidence and need, and is regularly updated using quality-controlled processes. It is reviewed by experts in health and social care and people affected by dementia.

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This factsheet has also been reviewed by people affected by dementia.

To give feedback on this factsheet, or for a list of sources, please email publications@alzheimers.org.uk

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We are Alzheimer's Society. We are a vital source of support and a powerful force for change for everyone affected by dementia. We provide help and hope.

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