

Riluzole

What you should know

- Riluzole is an anti-glutamate medication
- Riluzole appears to block the release of glutamate from nerve cells (neurones)
- Riluzole does not cure MND but for people with the most common forms of MND it probably prolongs median survival by two to three months (median is the mid-point – half those taking riluzole have survival prolonged by more than two to three months)
- Riluzole may slow disease progression
- People who start taking riluzole soon after diagnosis show the greatest benefits
- The safety and efficacy of riluzole has only been studied in ALS, including progressive bulbar palsy (PBP).

About riluzole

Some neurones in the brain and spinal cord release an amino acid, called glutamate, to carry signals to other neurones. Glutamate is released at the synaptic junction where two neurones meet. If too much glutamate is released by the neurone sending a signal, it can over-stimulate the neurone receiving the signal. This is called glutamate excitotoxicity. Riluzole is an anti-glutamate medication that appears to block the release of glutamate from neurones.

Riluzole and MND

Motor neurone disease is a general term applying to progressive, degenerative disorders affecting the motor neurones. Motor neurones carry signals from the brain to the muscles. In people with motor neurone disease, the motor neurones deteriorate and can no longer carry these signals.

Researchers have found that glutamate excitotoxicity may accumulate to harmful levels and contribute to motor neurone deterioration (Miller et al. 2012). The effect of riluzole, an anti-glutamate medication, has been investigated on people with the following forms of motor neurone disease:

- amyotrophic lateral sclerosis (ALS) – that first affects muscles controlling the limbs
- progressive bulbar palsy (PBP) – that first affects bulbar muscles (speech and swallowing muscles) but often progresses to ALS.

Medical literature about riluzole generally uses the term amyotrophic lateral sclerosis (ALS) as an umbrella term to include progressive bulbar palsy (PBP). This is because there is:

- uncertainty about the cause and mechanism of motor neurone deterioration
- debate about the extent to which different forms are simply variations in the same disease process or whether there are several different disease mechanisms
- international difference in terms used to describe motor neurone disease.

Getting riluzole

Riluzole is manufactured under the names Rilutek™ and APO-Riluzole. In Australia riluzole is available for eligible people at a subsidised price on the Pharmaceutical Benefits Scheme (PBS) under an authority prescription. To get your first authority prescription for riluzole you must be diagnosed with the ALS form (including PBP) of MND by a neurologist, have had the disease for five years or less and meet several other criteria. Your doctor needs to provide your date of diagnosis and information about your forced vital capacity* with the first application. Subsequent prescriptions may be issued by your general practitioner.

Teglutik® (riluzole) a liquid formulation (for ease of swallowing or use via PEG tube) of riluzole, distributed by Seqirus (Australia) Pty Ltd, will be listed on the PBS from 1 April 2019 under the same prescribing conditions as Rilutek™ and APO-Riluzole.

*Forced vital capacity (FVC) is a respiratory function test. For more information about FVC see Living Better for Longer Fact Sheet Breathing and motor neurone disease: an introduction (EB5).

Evidence about riluzole

For people with MND who have ALS (including PBP)

In their analysis of the results of four double-blind randomised controlled trials, involving 1477 people with the ALS form (including PBP) of motor neurone disease, Miller et al. (2012) found that taking 100 mg of riluzole daily:

- probably prolongs median survival by two to three months - (median is the mid-point – half those taking riluzole have survival prolonged by more than two to three months).

One of the trials included in the analysis only enrolled people older than 75 years or who had the disease for more than five years. The inclusion of this trial decreased median survival time.

Several riluzole studies were not included in the analysis because they were not double-blind randomised controlled trials (the best evidence). These excluded studies reported a median survival prolongation ranging from 6 to 21 months. It is not known what other factors, such as other interventions and stage of the disease, might have influenced the results of these excluded studies (Miller et al. 2012).

For people with other forms of MND

All trials of riluzole published in the medical literature have only allowed people diagnosed with the ALS form (including PBP) of motor neurone disease to participate.

There is strong clinical support for the use of riluzole in other forms of motor neurone disease (National Institute for Clinical Excellence 2001). However, in Australia, subsidised PBS prescriptions for riluzole are limited as a treatment for the ALS (including PBP) forms of motor neurone disease alone (Australian Government Department of Health and Ageing 2009).

Adverse effects

Adverse effects from riluzole are relatively minor and, for the most part, reversible after stopping the drug (Miller et al. 2012). The most common adverse effects are fatigue and nausea. Riluzole affects liver function and should be prescribed with care in people who have pre-existing problems with liver function.

Ongoing liver function testing

Regular blood testing to monitor liver function (every month for three months, then every three months for a further nine months and annually thereafter) is recommended for people taking riluzole (National Institute for Clinical Excellence 2001).

Getting advice about riluzole

To get advice about riluzole talk with your neurologist. If you have been refused access to riluzole under the PBS and think you should be eligible, seek an opinion from another neurologist or contact your MND clinic, service or your MND Association for more information.

References:

HealthDirect, Brand name: Teglutik™ https://www.healthdirect.gov.au/medicines/brand/amt_1190711000168104/teglutik

Australian Government Department of Health and Ageing 2009, Information in the PBS Schedule about Rilutek, <http://www.pbs.gov.au/html/consumer/product/restrictions?publication=GE&code=8664B&brand=Rilutek>

Miller RG, Mitchell JD, Moore DH 2012, Riluzole for amyotrophic lateral sclerosis (ALS)/motor neuron disease (MND), *Cochrane Database of Systematic Reviews* 2012(3). Art. No CD001447

National Institute of Clinical Excellence 2001, NICE: Guidance on the use of riluzole (Rilutek) for the treatment of motor neurone disease, <http://guidance.nice.org.uk/TA20>

NIH U.S. National Library of Medicine National Center for Biotechnology Information Modify Date: 2018-10-20, Riluzole <https://pubchem.ncbi.nlm.nih.gov/compound/riluzole#section=Drug-Indication>

Living Better for Longer: MND Australia evidence-based fact sheets

MND evidence-based interventions - an overview (EB1)

Multidisciplinary care (EB2)

Multidisciplinary care team (EB3)

► Riluzole (EB4)

Breathing and motor neurone disease: an introduction (EB5)

Breathing and motor neurone disease: what you can do (EB6)

Breathing and motor neurone disease: medications and non-invasive ventilation (EB7)

Considering gastrostomy - PEG and RIG (EB8)

To find out about motor neurone disease and other fact sheets in this series contact the MND Association in your state or territory ph. 1800 777 175 or visit www.mndaustralia.org.au