

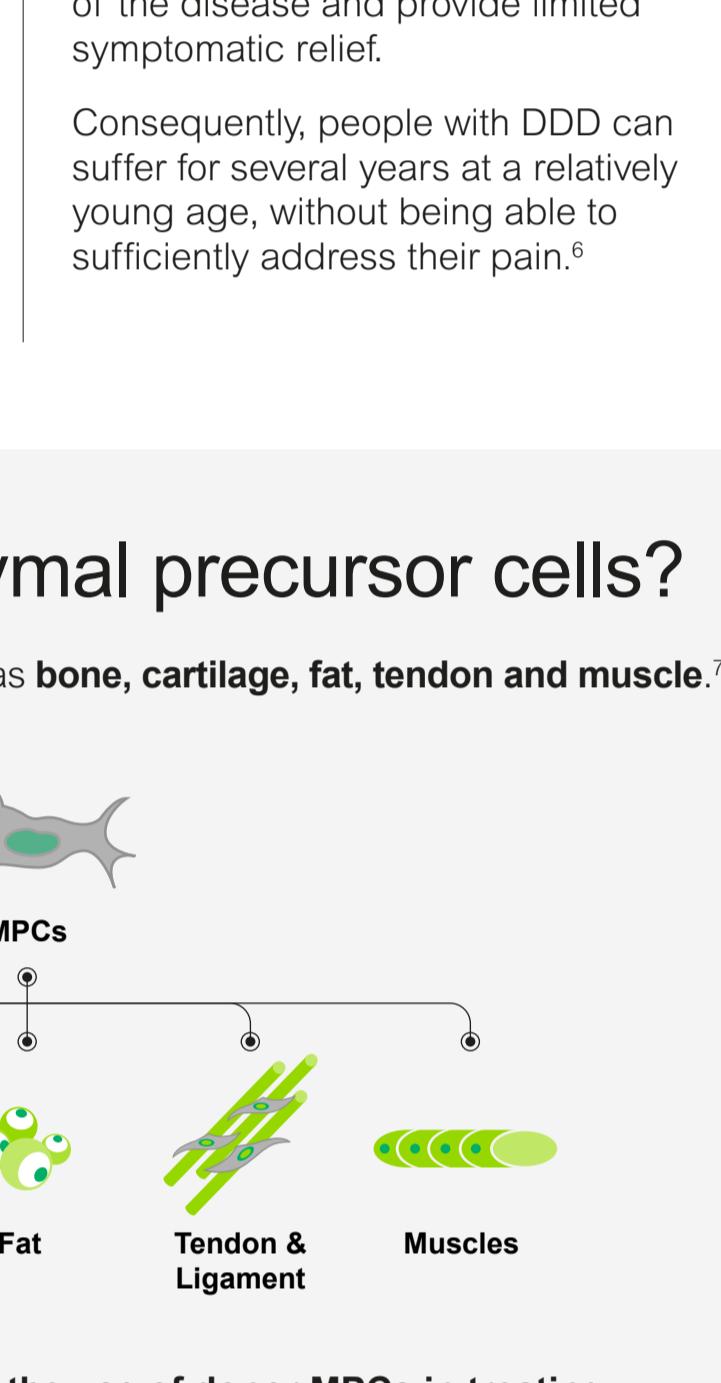
Exploring the role of cell therapy in degenerative disc disease

Clinical studies are exploring whether therapies involving mesenchymal precursor cells (MPCs) could deliver meaningful, lasting improvements to people with chronic low back pain due to degenerative disc disease (DDD).

What is DDD?

DDD is a **common condition** which involves inflammation and degeneration of the intervertebral discs due to various factors including age, trauma or genetic pre-disposition.¹

The lack of 'cushioning' can result in **spinal instability, mechanical stress and bony changes of the spine**, which can eventually cause significant pain and loss of function.²



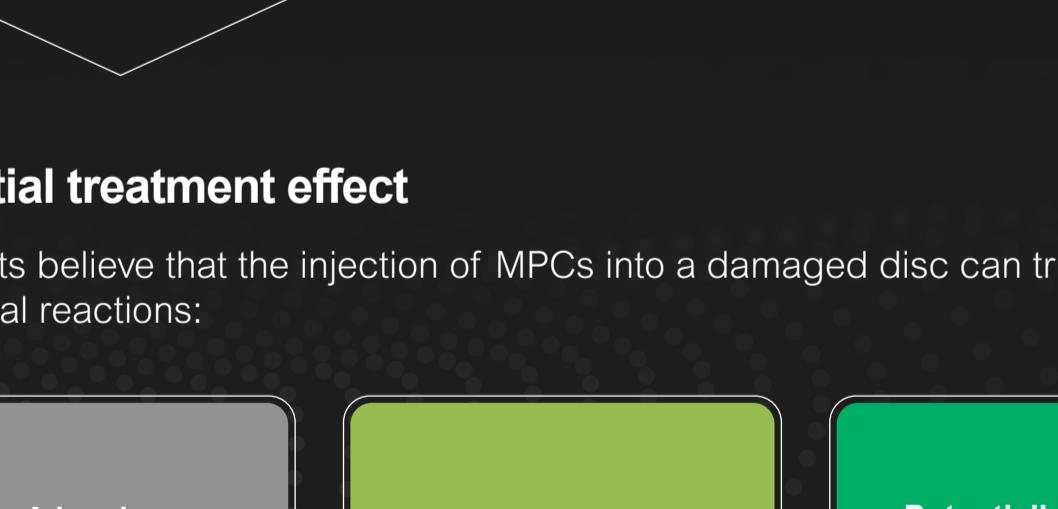
Over **7 million people in Europe** are thought to suffer from chronic low back pain caused by DDD.^{1,3,4,5}

Most existing therapies do not address the underlying mechanisms of the disease and provide limited symptomatic relief.

Consequently, people with DDD can suffer for several years at a relatively young age, without being able to sufficiently address their pain.⁶

What are mesenchymal precursor cells?

MPCs can differentiate into tissues such as **bone, cartilage, fat, tendon and muscle**.⁷



Clinical trials are currently evaluating the use of donor MPCs in treating people with DDD.

How could MPCs be used in treating DDD?

The process of extraction and delivery



Potential treatment effect

Scientists believe that the injection of MPCs into a damaged disc can trigger three biological reactions:

A local anti-inflammatory effect by reducing the release of inflammatory proteins

Pain relief by triggering the release of endorphins, the body's natural painkiller

Potentially support the build-up of connective tissue, which could maintain or even restore the physiological function

These biological effects can provide relief for up to 3 years and maybe even longer⁸

MPCs have the potential to deliver meaningful lasting improvements to patients with DDD beyond symptomatic treatment.

References

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