

5 things you should know about stem cells

The following is a summary of The Australasian College of Sport and Exercise Physicians' position on the role of stem cells, specifically mesenchymal stem cell or MSCs. This position is endorsed by Stem Cells Australia and MOVE muscle, bone and joint health.

1. What are stem cells and how could they help?

Stem cells are special cells that enable your body to function. They have the unique ability to make copies of themselves (self-renew) and can develop into more specialised cells when they divide.

There are many different types of stem cells. The type of stem cell that is most often promoted as a treatment for musculoskeletal conditions (such as osteoarthritis) is the mesenchymal stem or stromal cell. They are generally referred to as MSCs. These cells can be sourced from many different types of organs including bone marrow and fat and can be obtained from the patient (known as autologous) or from a donor (allogeneic).

2. Stem cell treatments are still under investigation

MSCs are considered experimental and are not yet a recognised therapy. There are many clinical trials underway around the world to test the potential role of MSCs as a treatment for osteoarthritis, injuries to tendons and damage to cartilage or underlying bone in joints. Most of the trials are at the very early stages of investigation where only small numbers of patients have been treated. More research is needed.

3. Concerns about safety

Although there is no evidence from research undertaken to date that MSCs caused serious complications, long-term safety can't be assured. How MSCs are prepared, stored and administered may change their properties and the risks they pose to patients. Long-term studies of patients treated in larger clinical trials are needed to determine safety. Just because the cells come from your body doesn't automatically make them safe.

4. Lack of evidence that stem cell treatment works

While animal studies suggest that MSCs may enhance recovery from certain injuries, findings from clinical trials in humans are yet to provide sound evidence of benefit.

Questions remain about what source of MSCs is best and how many cells are required to provide benefit. Currently there is no 'gold standard' way to prepare MSCs. This makes it difficult to know exactly what is administered to the patient and to compare results between different groups.

5. Only consider stem cells as part of a clinical trial

If you are thinking about trying stem cells in Australia, make sure it's part of a clinical trial that has had ethical review and approval, and is registered on the Australian New Zealand Clinical Trial Registry (ANZCTR). As part of a trial you will be closely monitored over many years with the findings shared with other experts in the scientific and medical community. You are not usually expected to pay to participate in a clinical trial.

Despite the lack of reliable evidence that stem cell based approaches work or are even safe, stem cell treatments are already actively promoted for musculoskeletal and other conditions by clinics in Australia and overseas. ACSEP believes that it is unethical and unprofessional to sell unproven stem cell treatments.

So if you are considering stem cell treatment, it's important that you are well informed, ask lots of questions and discuss your intentions with your doctor.



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Supporting Organisations

Australasian College of Sport and Exercise Physicians

The Australasian College of Sport and Exercise Physicians (ACSEP) is the pre-eminent professional body representing Sport and Exercise Physicians and Sport and Exercise Medicine in Australasia.

The full position statement by the ACSEP was first published in the British Journal of Sports Medicine in 2016 and updated in 2017. ACSEP will continue to review developments in the field and will update their position in relation to the role of MSCs in the management of musculoskeletal sport medicine should acceptable levels of benefit and safety be met. [http://www.acsep.org.au/content/Document/ACSEP Stem Cell Position Statement Nov17 Final\(1\).pdf](http://www.acsep.org.au/content/Document/ACSEP%20Stem%20Cell%20Position%20Statement%20Nov17%20Final(1).pdf)

Stem Cells Australia

Stem Cells Australia brings together Australia's leading experts in bioengineering, nanotechnology, stem cell biology, advanced molecular analysis and clinical research. Their aim is to explore the fundamental mechanisms involved in stem cell regulation and differentiation, and translate this knowledge into innovative biotechnological and therapeutic applications. This collaboration not only supports excellence in stem cell research but also aims to lead public debate and discussion about the important ethical, legal and societal issues associated with stem cell science. <http://www.stemcellsaustralia.edu.au/>

MOVE muscle, bone and joint health

MOVE is a consumer organisation supporting people with muscle, bone and joint conditions such as arthritis. If you want more information or support on how to manage your condition

Call the MOVE National Help Line and speak to our nurses

Phone 1800 263 265 or email helpline@move.org.au

Visit our website move.org.au for information on:

- muscle, bone and joint conditions
- ways to live well with a muscle, bone and joint condition
- programs and services
- peer support groups
- upcoming webinars, seminars and other events.

More to explore

A Closer Look at Stem Cells website

<http://www.closerlookatstemcells.org/>

Australian Commission on Safety and Quality in Health Care

<https://www.safetyandquality.gov.au/our-work/clinical-care-standards/osteoarthritis-clinical-care-standard/>

Australian New Zealand Clinical Trial Registry

<http://www.anzctr.org.au/GetInvolved.aspx>

Australian Rheumatology Association position statement on stem cell therapies

<https://rheumatology.org.au/downloads/ARA%20Position%20Statement%20042014.pdf>

Stem Cells Australia website

<http://www.stemcellsaustralia.edu.au/About-Stem-Cells/For-Patients.aspx>



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