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Regenerative medicine for joint / soft tissue pain in horses

What regenerative therapies are:

- Regenerative medicine deals with the process of replacing, engineering or regenerating human or animal cells, tissues or organs aiming to restore or normal function.
- Commonly Include:
    - Mesenchymal stem cell therapy (MSCs)
        - With a horse, often stem cells are collected from bone marrow (often in sternum or hip) or fat tissue.
        - This goes to a lab, stem cells are isolated and multiplied in a culture medium
        - Once sufficient cells grown, they are injected back into the injured area
    - Platelet-rich plasma therapy (PRP)
        - A small amount of blood is taken, centrifuged to separate components
        - The plasma with high concentration of platelets and growth factors are injected into the injured area

Indication for use:

- Regenerative therapies are used in horses to treat musculoskeletal injuries, including tendon, ligament and joint conditions

Action:

- Regenerative medicine aims to promote tissue regeneration and reduce inflammation

Effectiveness:

- Research supports improvement in lameness, tissue healing and return-to-competition rates, especially when used early, but research is mixed.
- Studies report improved fibre alignment, reduced lesion size and lower re-injury rates
- Results seem to be more consistently positive with treatment targeting tendon injuries than joint disease

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Safety and Risks:

- PRP generally considered safe, occasional mild inflammation at the injection site is seen
- There is a low risk of an immune reaction

Conclusion:

- Regenerative therapies, especially MSCs and PRP are effective and increasingly being used for equine musculoskeletal injuries, offering improved healing and lower reinjury rates
- Clinical effectiveness remains uncertain due to inconsistent evidence and lack of standardized protocols.
- Further research is needed,

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