Physiotherapy : Muscle Strengthening in Degenerative Joints and Spine Conditions

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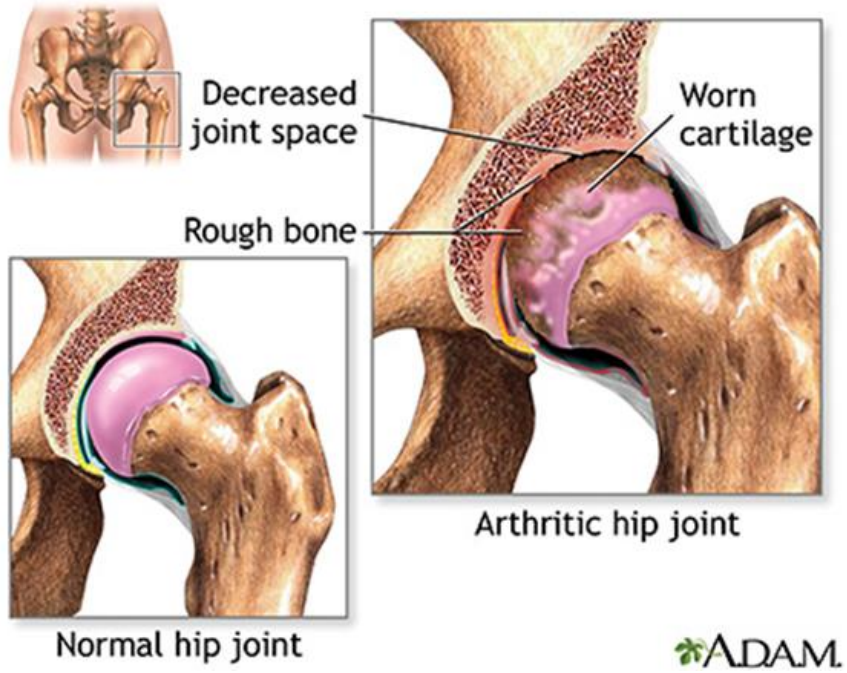
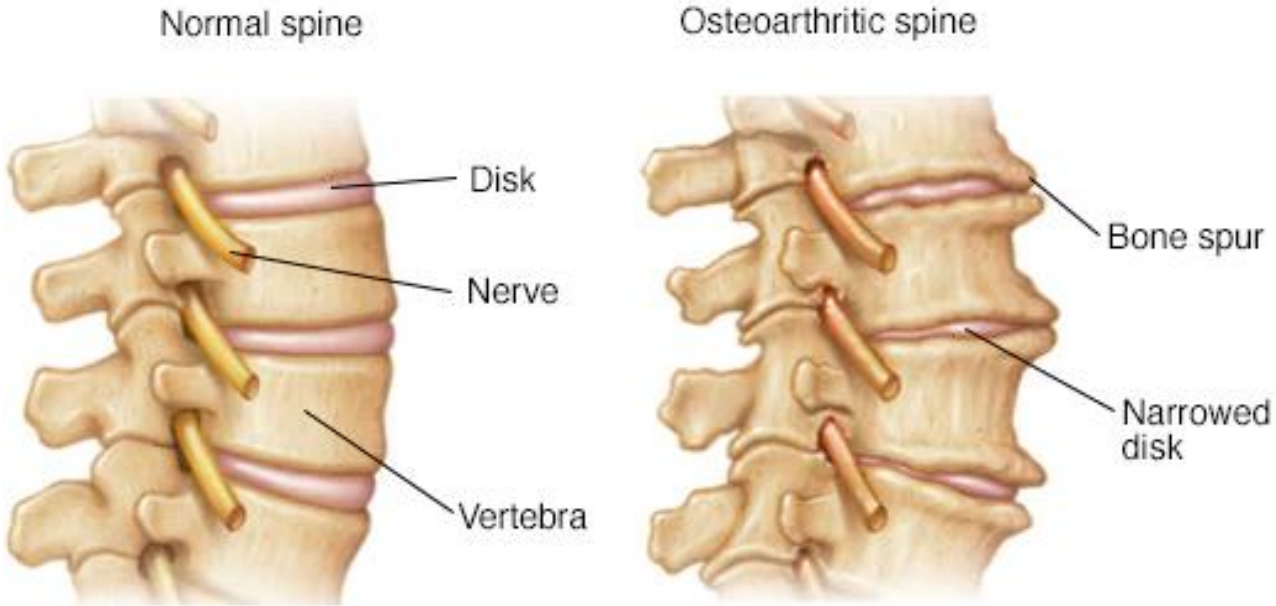
Degenerative Joint Disease

Osteoarthritis (OA), is a common "wear and tear" disease that occurs, when the cartilage that serves as a cushion in the joints deteriorates (AAPMR&R, 2019).

This condition can affect any joint but is most common in knees, hands, hips, and spine (AAPMR&R, 2019).



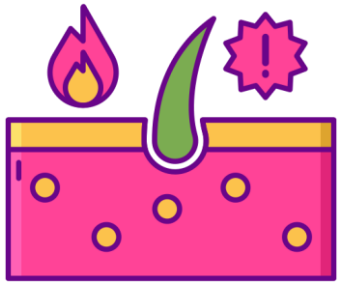


https://www.aapmr.org/about-physiatry/conditions-treatments/pain-neuromuscular-medicine-rehabilitation/degenerative-joint-disease

Background

Adults age >65 are affected by degenerative joint disease.

This condition is associated with pain, loss of function, and reduced endurance, ultimately leading to weight gain and associated complications (AAPMR&R, 2019).



The underlying cause of this condition is typically chronic repetitive motion that results in inflammation and structural joint damage.

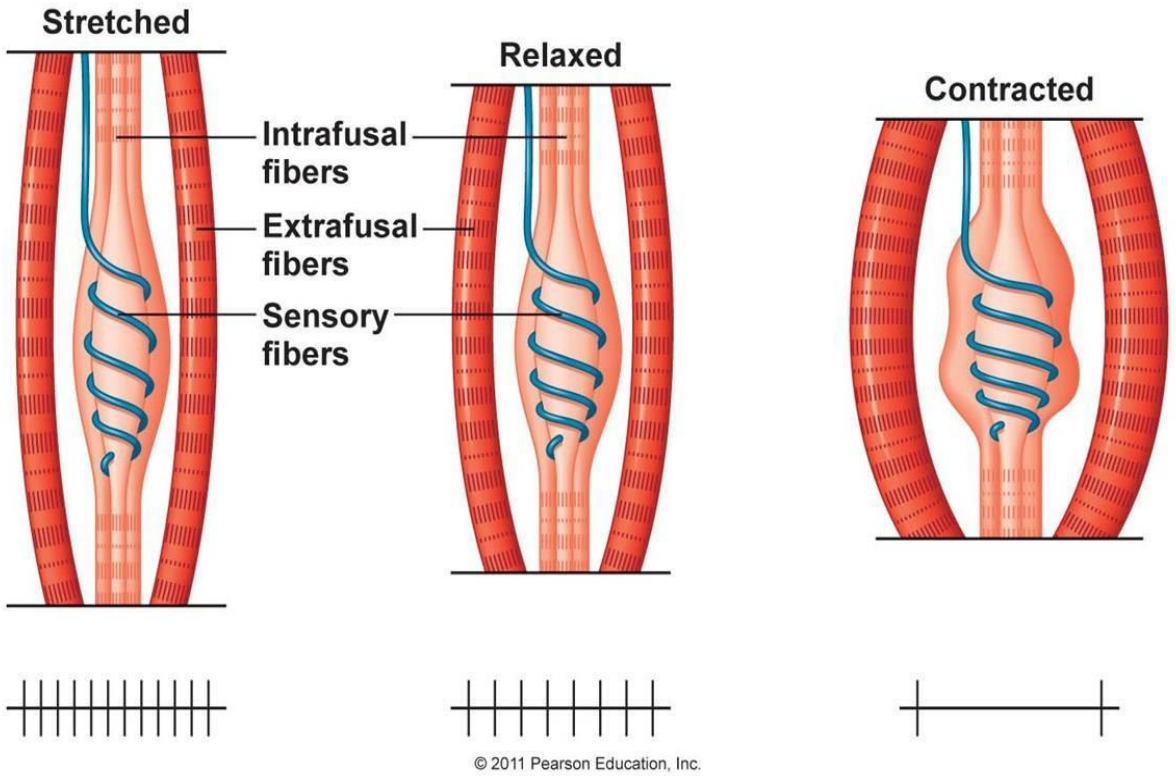
https://www.aapmr.org/about-physiatry/conditions-treatments/pain-neuromuscular-medicine-rehabilitation/degenerative-joint-disease

Signs And Symptoms

- Pain during or after movement.
- Stiffness might be most noticeable upon awakening or after being inactive.
- Tenderness.
- Loss of flexibility.
- Bone spurs.
- Swelling.

https://www.aapmr.org/about-physiatry/conditions-treatments/pain-neuromuscular-medicine-rehabilitation/degenerative-joint-disease

Stretching Exercise



- Increases your flexibility. ...
- Increases your range of motion. .
- Improves your performance in physical activities. ...
- Increases blood flow to your muscles. ...
- Improves your posture. ...

https://cellcode.us/quotes/are-muscle-spindles-action-when.html

Proprioceptive Neuromuscular Facilitation

This is a rehabilitation technique that used to stimulate the neuromuscular system in an effort to excite proprioceptors (sensory organs in muscles, tendons, bones and joints) in order to produce a desired movement.

Four theoretical mechanisms:

- Autogenic inhibition
- Reciprocal inhibition
- Stress relaxation
- Gate control theory.

It shows potential benefits if performed correctly and consistently. (Hindle, Whitcomb, Briggs, & Hong, 2012)

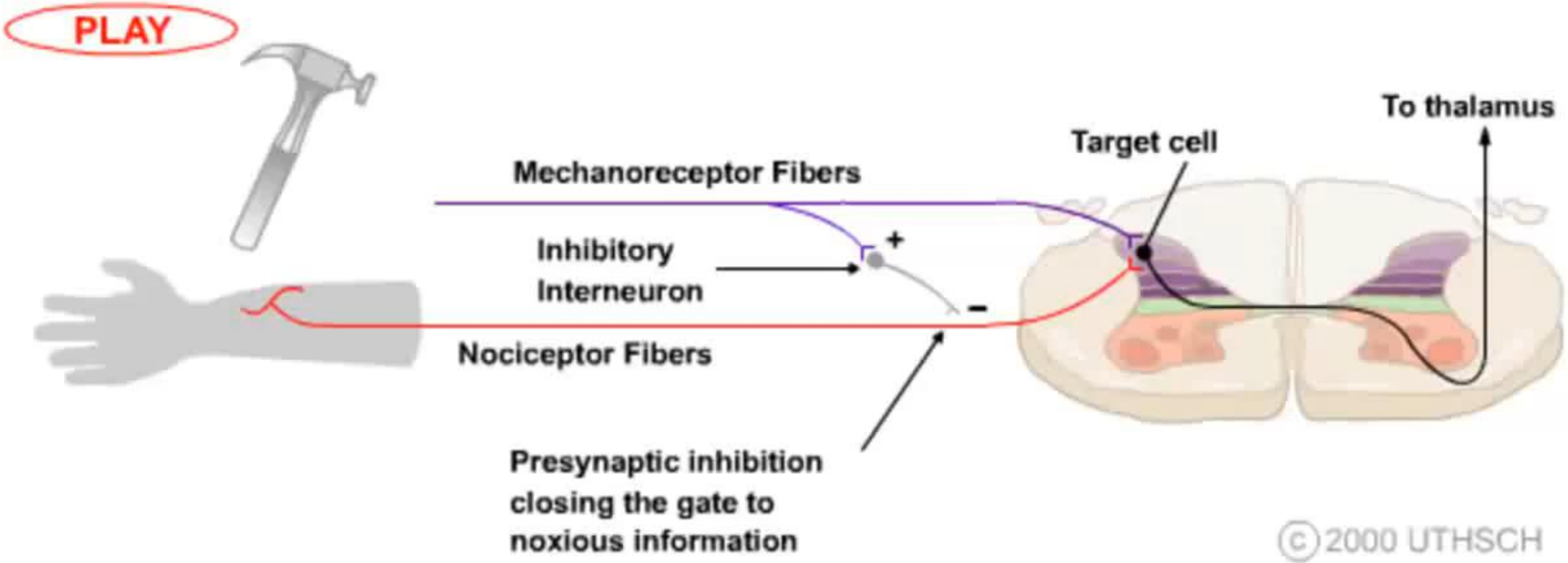


Figure 8.1
The gate control theory of pain modulation. The gate control theory is based on presynaptic inhibition of pain information produced by mechanical stimulation, and provides the basic rationale for the TENS.

PNF Techniques

HOLD RELAX

- Contracting the muscle without moving (also called isometric), such as pushing gently against the stretch without actually moving.

PNF techniques

CONTRACT RELAX

- It is almost identical to hold-relax, except that instead of contracting the muscle without moving, the muscle is contracted while moving. This is sometimes called isotonic stretching.
- For example, in a hamstring stretch, this could mean a trainer provides resistance as an athlete contracts the muscle and pushes the leg down to the floor.

PNF Patterns – Upper And Lower Limb

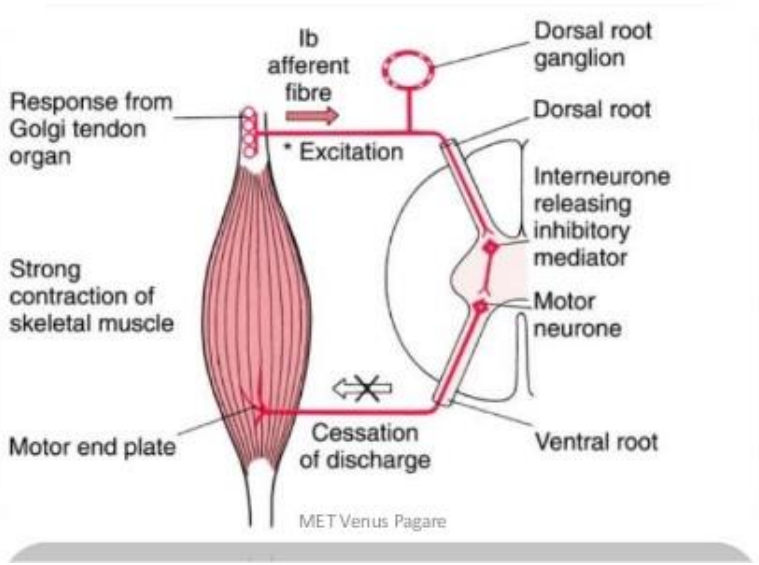
https://www.cupeli.com/pnf-patterns-upper-extremity/

https://www.pinterest.com/kcoxpt/

Muscle Energy Technique

Post-isometric Relaxation

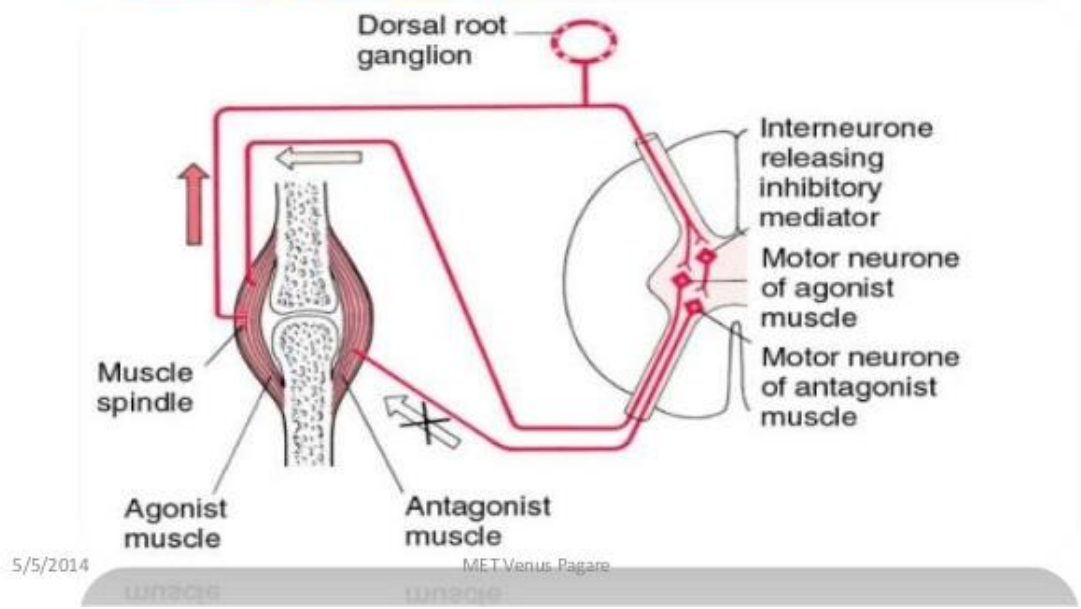
- After a muscle is contracted, it is automatically in a relaxed state for a brief, latent period



https://www.slideshare.net/venus88/met-lecture

Reciprocal Inhibition

When one muscle is contracted, its antagonist is automatically inhibited.



https://patioyarddesign.com/

Knee Exercises

HAMSTRING STRETCH

CALF STRETCH

STRAIGHT LEG RAISE

QUADRICEPS SET

HEEL RAISE

ONE LEG BALANCE

Hip Exercises

PELVIC BRIDGING

HIP FLEXION EXERCISE

SPARKPEOPLE .com

Spine Exercises

ABDOMINAL ISOMETRICS

KNEE TO CHEST

PELVIC TILT

CURL UPS

LYING LATERAL LEG RAISE

CAT AND CAMEL

What's Next ?

Aquatic Therapy

- **WARM WATER**: facilitates muscle relaxation and increases peripheral circulation.
- **VISCOSITY OF WATER**: provides resistance for strength training.
- **THE REDUCTION OF GRAVITATIONAL FORCES**.
- **BUOYANCY**: in warm water results in decreased pain sensitivity.
- **IMPROVEMENT OF PATIENT MORALE.**

http://hasshe.com/stretching-pool-therapy-ideas-5c148f418719620724bdc5bc/

https://dshealthcare.com/blog/aquatic-therapy-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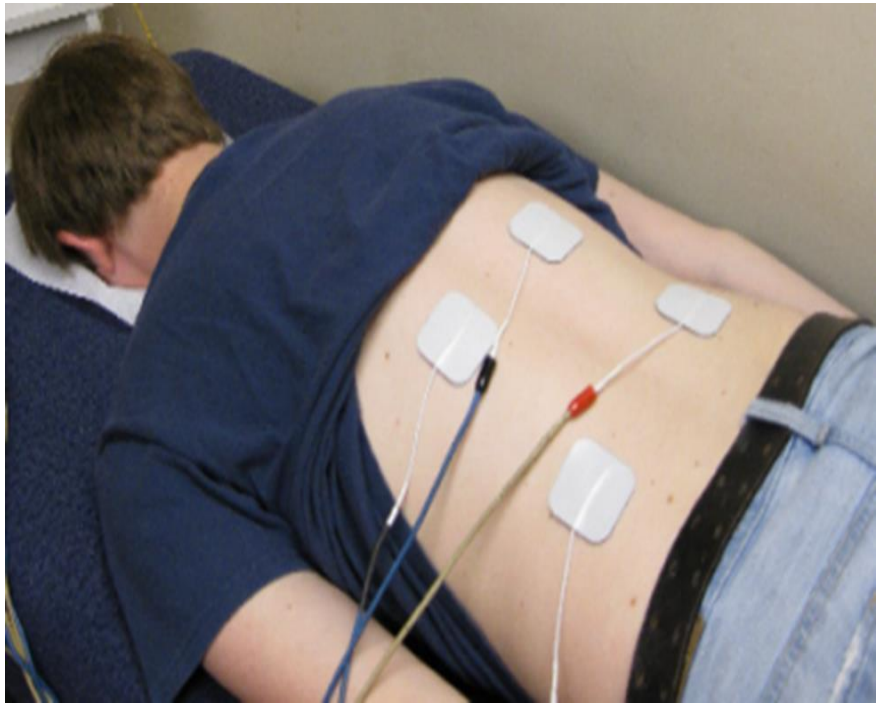

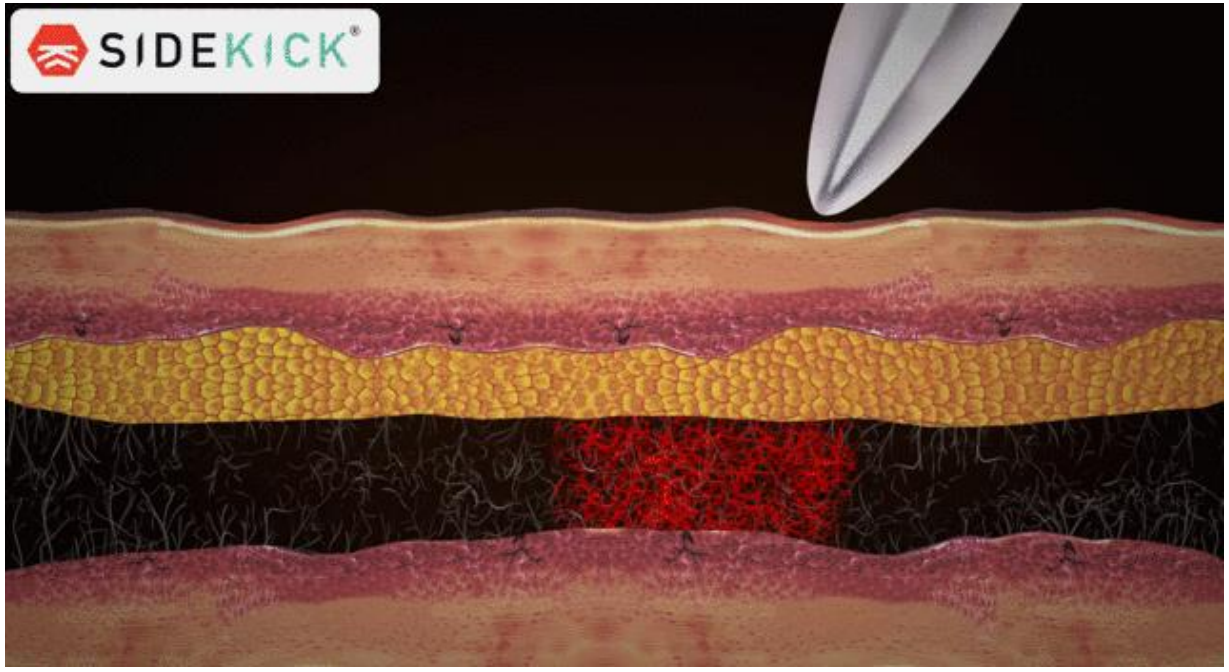
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Question And Answer

If you experience pain or discomfort lasting longer than a day, please seek assistance from a Health care professional.


thank you
danke
рахмат
謝謝
ngiyabonga
teşekkür ederim
Баярлалаа
спасибо
faafetai lava
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kia ora
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감사합니다
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