Running
and knee health

Please note that this online educational module is intended to provide a brief overview of the research about running and knee health. Detailed references are provided at the end of the module.

This module is not meant to provide a treatment plan. If you have knee pain, consult a qualified healthcare professional.

We acknowledge and appreciate the contribution of multiple runners, non-runners and healthcare providers who helped in the development of this educational module.

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What is Knee osteoarthritis (OA)?

The **most common** joint disease and a major cause of **disability and pain.** It affects bone, cartilage, ligaments and muscles.

Osteoarthritis (OA) currently affects **240 million** people globally.

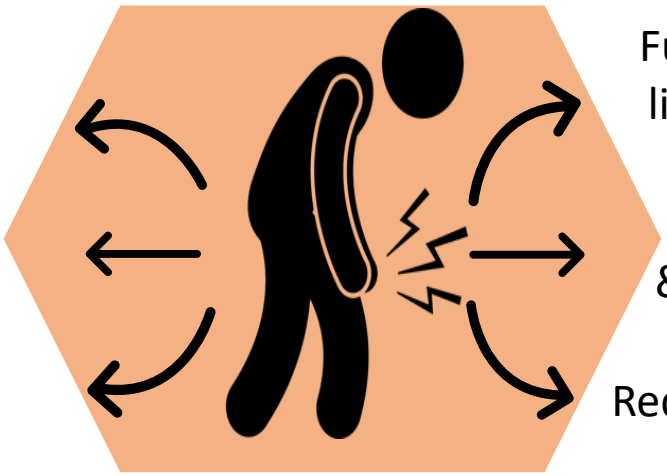
How does knee OA impact life?

Physical and psychosocial impact

Joint pain

Swelling

Stiffness



Functional limitation

Fear of movement & worsening disease

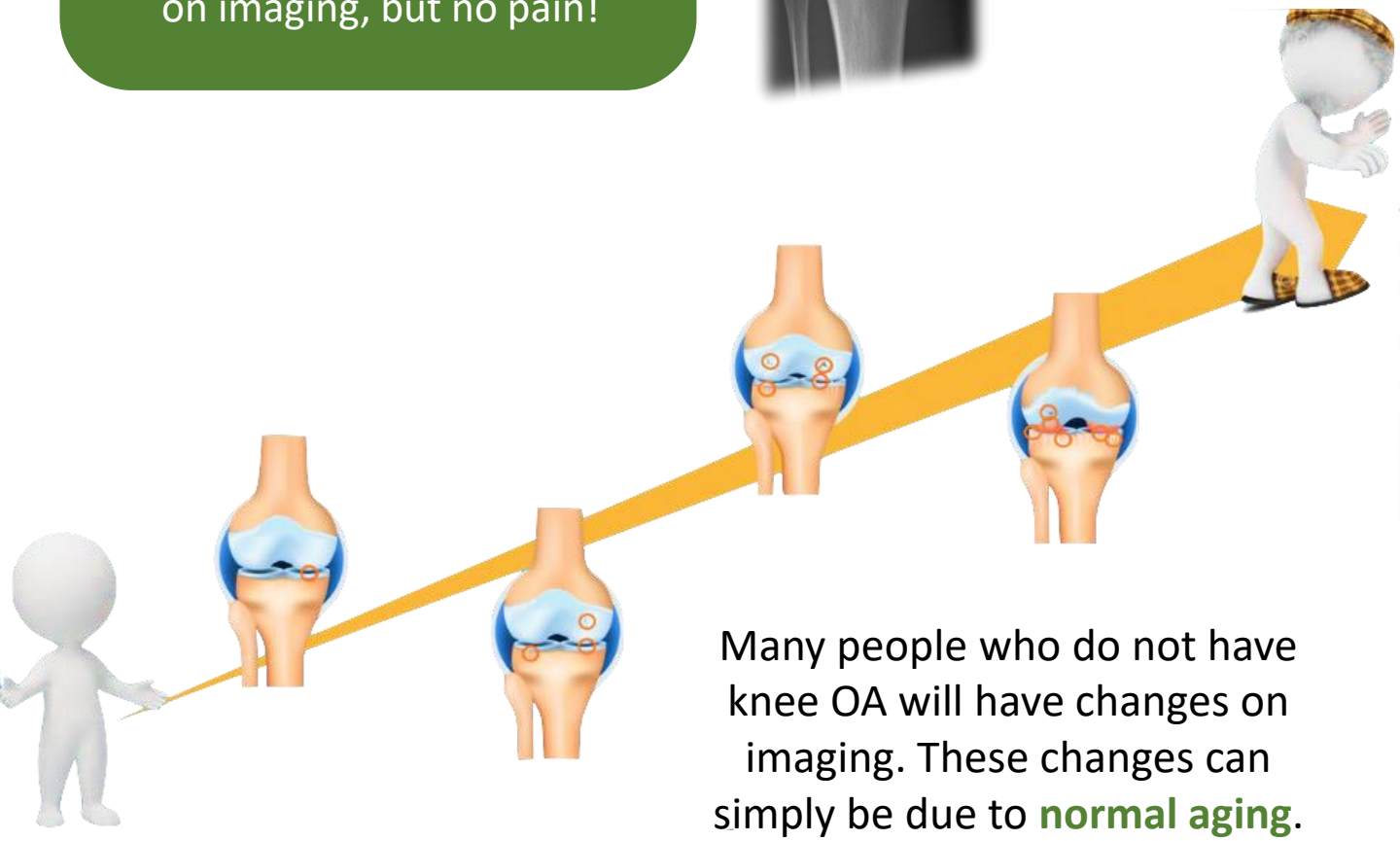
Reduced quality of life

References

Osteoarthritis Research Society International (2019), Wallis et al. (2019)

SHOULD I BE CONCERNED ABOUT THE RESULTS OF MY MEDICAL IMAGING EXAMS?

Findings from medical imaging are **not necessarily related** with pain. As many as 14% of adults aged less than 40 years and 43% of adults over 40 years have OA on imaging, but no pain!



Many people who do not have knee OA will have changes on imaging. These changes can simply be due to **normal aging**.

References

Culvenor et al. (2019), Finan (2013)

PEOPLE ARE MORE LIKELY TO GET KNEE OA IF THEY...

Are 50 years or older

Are female

2x more *likely than males*

Have had a serious knee injury

3x more *likely*

Are overweight or obese

3x more *likely*

Have a family history of knee OA

Have played high-level sports

References

Driban et al. (2017), Silverwood et al. (2015)

RUNNING IS GOOD FOR OVERALL HEALTH!

Mortality rate due to cardiovascular disease, cancer or infection

Mental health: improved sleep, symptoms of depression, psychological functioning, etc.

Ability to control **weight**

Better for knee joint health

Aerobic **fitness** & heart and lung **capacity**

Physical abilities

References

Pedisic et al. (2019), Eime et al. (2013), Hespanhol et al. (2015), Kalak et al. (2012), Szabo & Ábrahám (2013), Oja et al. (2015)

DOES RUNNING CAUSE KNEE OA?

NOT NECESSARILY!

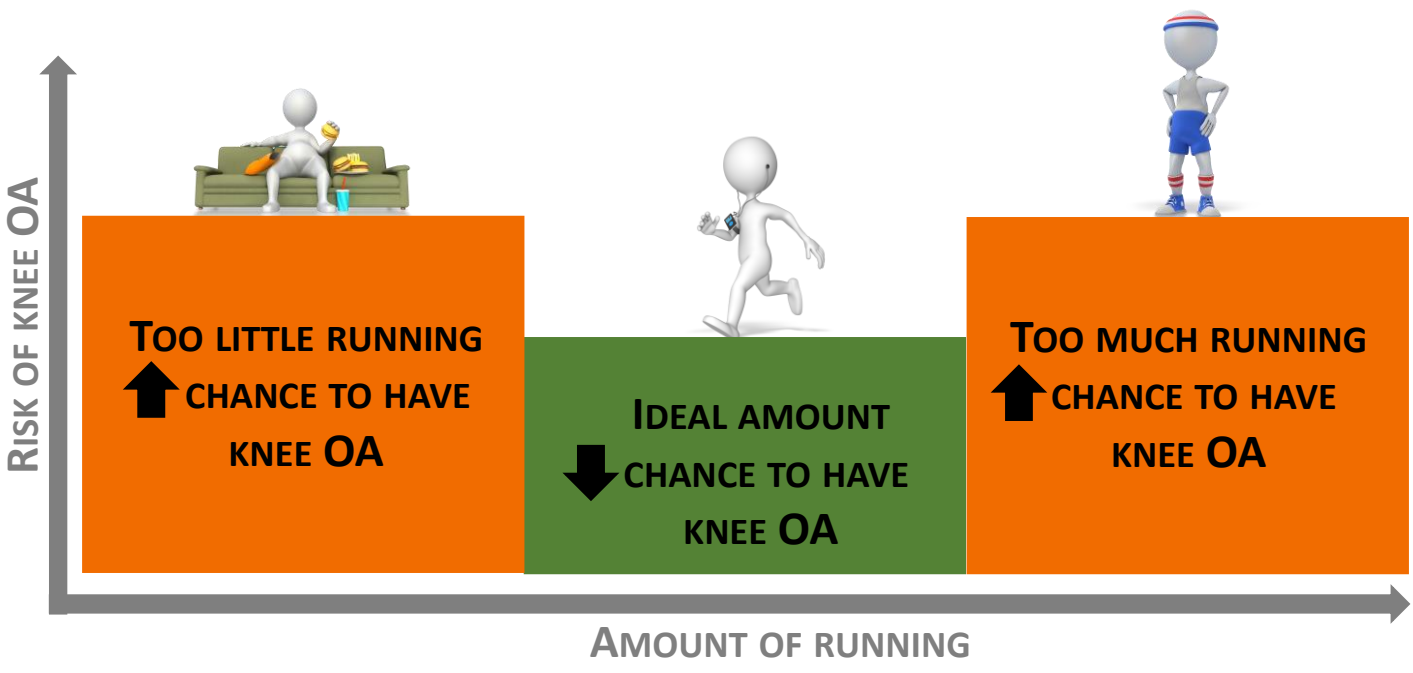
10 out of 100
sedentary people (non-runners) have knee OA

3 out of 100
recreational runners have knee OA

**Recreational means Non-professional or Amateur levels*

13 out of 100
elite runners have knee OA

**Elite means Professional or International levels*



DID YOU KNOW?

Running may have a **protective effect.** Runners seem to have a **54% lower** chance for needing knee surgery due to OA (knee replacement).

References

Alentorn-Geli et al. (2017), Timmins et al. (2017)

WHAT IF RUNNING HELPED YOUR KNEES GET STRONGER?

Running can have a **positive effect** on the **knee** when the **ideal load** (dose of activity) is applied

Increased **bone** density (solid bones)

Increased capacity of **muscles**

Less **inflammation** in the healthy knee

More robust **cartilage**

Healthy bones, muscles and cartilage can help maintain healthy knees! Note that the **ideal load varies** according to many factors (age, habits, sleep, etc.) and is **different from one person to the other**.

References

Horga et al. (2019), Hyldahl et al. (2016), Van Ginckel et al. (2010)

Is running bad for people with knee OA?

Exercise is **helpful** for people with knee OA.

Exercising with **moderate impact** is **not harmful** for the knee cartilage.

DID YOU KNOW?

Recreational running in people with knee OA...

- Does NOT seem to increase symptoms
- Does NOT seem to damage knee joint structures
- May require more recovery time following a run

Runners with knee OA may wish to consider adjusting training according to symptoms. Example: run shorter distances, run a little bit slower, avoid downhill running.

References

Bricca et al. (2019), Esculier et al. (2019), Lo et al. (2018)

In summary, running may be good for knee health!

1. Knee OA is a **common** cause of pain and disability

2. **Running** is great for **physical** health, **mental** health and **knee** health

3. Knee OA is **less frequent** in **recreational runners** than in sedentary people or elite runners

4. Recreational running may have a **positive effect** on knee health by making **bones**, **cartilage** and **muscles** stronger

5. **Exercise** is **good** for people with knee OA. Running provides a simple inexpensive option to maintain good exercise habits

**More studies are needed to provide specific guidelines on optimal running parameters*

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