

Impact of Sedentary Lifestyle on Body & Health

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1. Who Am I & What's My Story

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“MY MISSION is to transfer my knowledge, enthusiasm and energy to the sedentary population

- 🌍 *to understand the consequences of the sedentary lifestyle*
- 🌍 *to start and maintain systematic progressive approach in the physical training (fitness) and by that*
 - 🌍 *to increase the present quality of life and*
 - 🌍 *to create a healthy and vital basis for the future years to come.”*



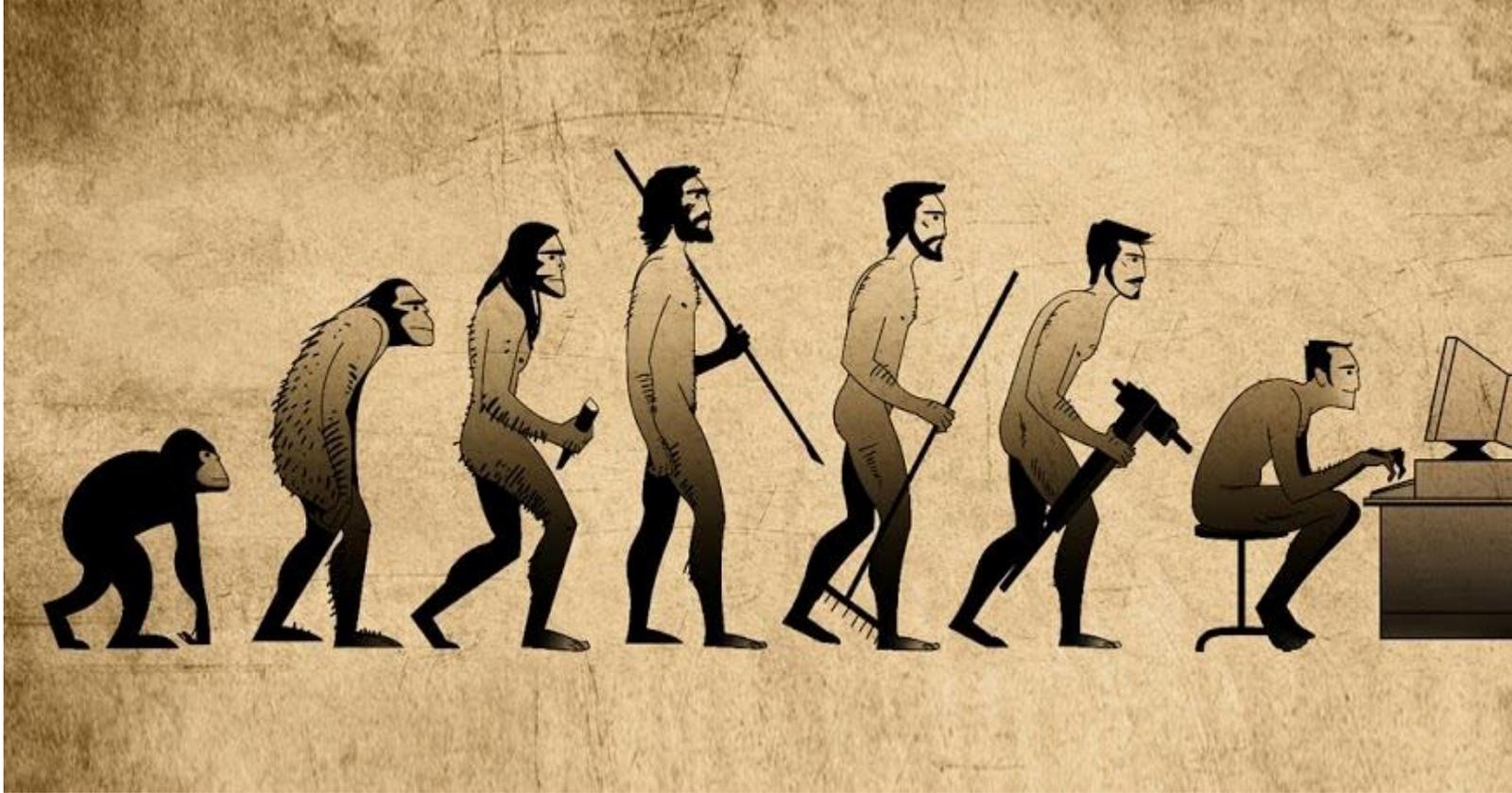
2. National Academy of Sports Medicine

- 🏆 Leading authority in certification, continuing education, and career development for health and fitness professionals
- 🏆 World's foremost resource for fitness and sports medicine information
- 🏆 Evidence based training system founded on the scientific rationale of human movement science
- 🏆 Mapped to EuropeActive level 4 Health and Fitness Standards

3. Move “People”



4. Human Evolution



5. Sitting Hours... Visualizing the Math

Working week	Daily	Weekly	Monthly	Yearly
Travelling	2	10	40	480
Working	8	40	160	1.920
Home	2	10	40	480
TOTALS	12	60	240	2.880

Daily cross-section: of 24 hours

-  Office 35% - 40%
-  Travelling 5% - 10%
-  Private time inactive 10% - 15%
-  Sleeping 30%

5% - 20% (or less) moving!!!

6. Media About Sitting

Daily hours of sedentary time is correlated with [risk](#) for cardiovascular disease, diabetes, certain cancers and premature mortality, independent of exercise patterns.

Research shows that you can reduce your chances of cancer, type 2 diabetes, cardiovascular disease, and back pain, all with one simple lifestyle change: reduce the time you spend sitting.



Sitting is the New Smoking

"Sitting is more dangerous than smoking, kills more people than HIV, and is more treacherous than parachuting. We are sitting ourselves to death," says James Levine, a professor of medicine at the Mayo Clinic, in an interview with the LA Times. "The chair is out to kill us."

Physical inactivity contributes to over three million preventable deaths worldwide each year (that's six per cent of all deaths). It is the fourth leading cause of death due to non-communicable diseases.

You may be thinking, "But I work out several times per week." The research shows that though exercise is good for you, it doesn't negate the damage done by extended periods of sitting.

Exercise Doesn't Negate Extended Periods of Sitting

On your feet! Evidence suggests that long hours in office chairs or sitting watching TV will shorten your life

Sitting has elbowed its way past all other bad behaviors and become public enemy number one. And it should be. Sedentary (from the Latin sedere, sitting) behavior is now a leading [cause](#) of illness.

Physical inactivity contributes to over three million preventable deaths worldwide each year (that's six per cent of all deaths). It is the fourth leading cause of death due to non-communicable diseases.

7. So What Does Sitting to Our Bodies & Health???



8. Sitting is the NEW Smoking

High correlation with risks of:

1. Quality of movement & Injuries (human movement system – muscles, joints)
2. Cardiovascular diseases - increased blood pressure
3. Access body fat around the waist (visceral fat)
4. Abnormal cholesterol level
5. Diabetes (insulin sensitivity, glucose levels)
6. Certain types of cancer (e.g. ovarian, prostate)
7. Pre-mature mortality

9. Other Lifestyle Factors Impacting Posture

Repetitive Movements

- 🏠 Persistent motions (a. o. mouse click / keyboard use)
- 🏠 Pattern overload to muscles and joints

Dress Shoes (high heels)

- 🏠 Ankle complex in a plantarflexed position for extended periods
- 🏠 Tightness in gastrocnemius, soleus and Achilles tendon
- 🏠 Flattening of the arch of the foot

Mental Stress

- 🏠 Elevated resting heart rate, blood pressure and ventilation at rest and exercise (abnormal breathing patterns)

10. Importance of Posture

Neuromuscular efficiency

- 🏋️ Ability of the nervous and muscular system to communicate properly producing optimal movement
- 🏋️ Proper postural alignment helps to produce **effective and safe movements**

Proper posture

- 🏋️ Muscles of the body are optimally aligned (length-tension rel.)
- 🏋️ Proper joint motion
- 🏋️ Effective absorption and distribution of forces



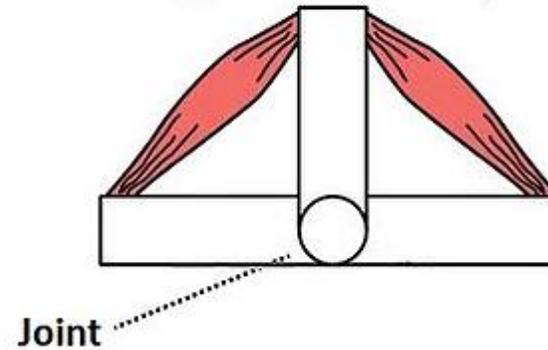
Risk of injuries low or reduced

11. Muscle Imbalances

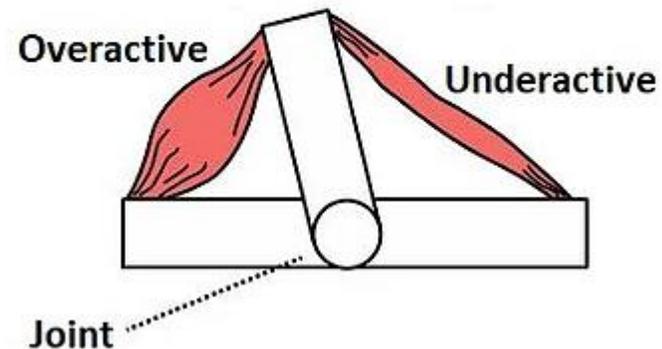
Possible causes

- 🏃 Postural stress
- 🏃 Repetitive movement
- 🏃 Lack of core strength
- 🏃 Lack of neuromuscular efficiency

Normal Muscular Balance
(optimal joint function)



Muscular Imbalance
(joint dysfunction)

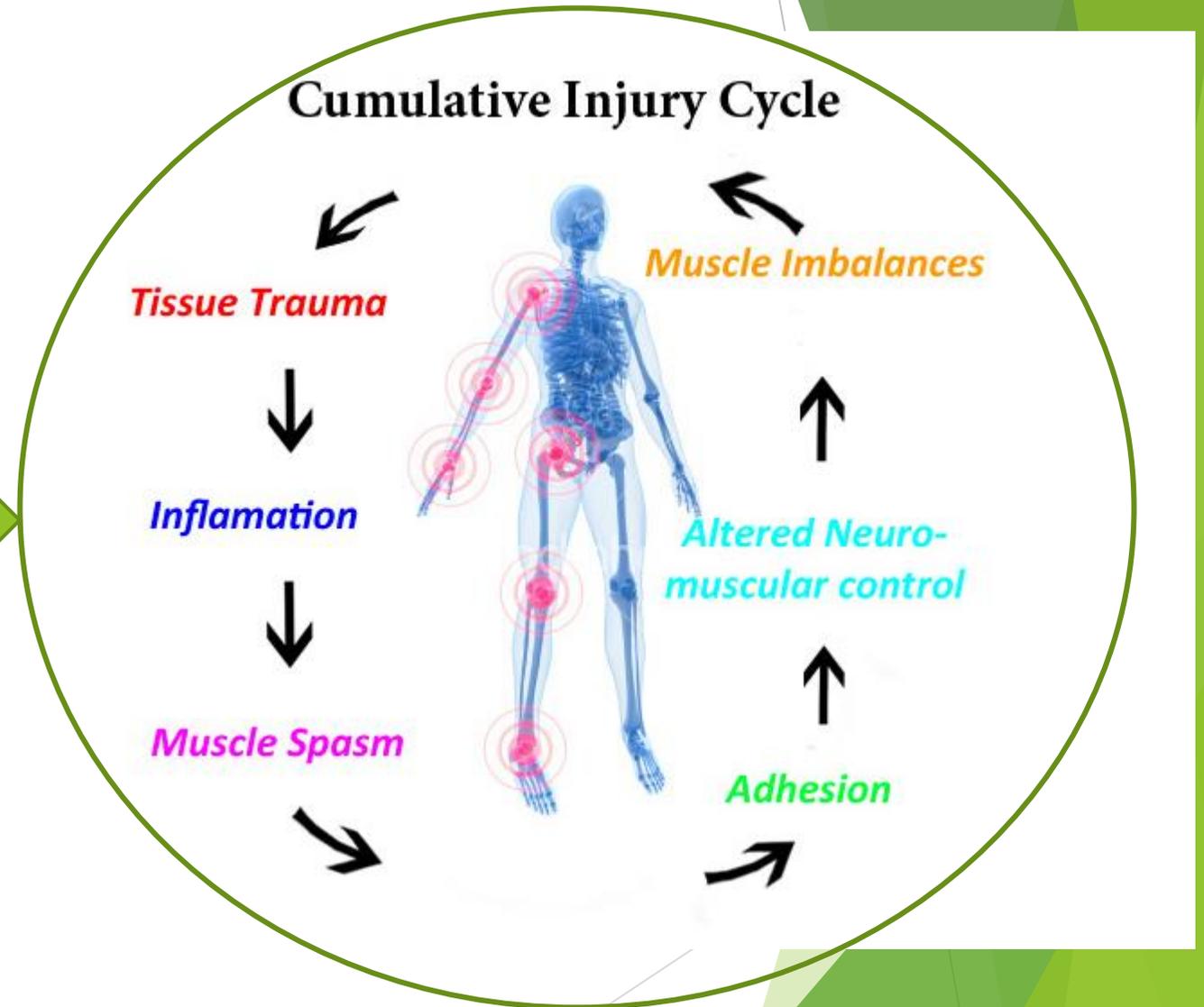


12. Cumulative Injury Cycle

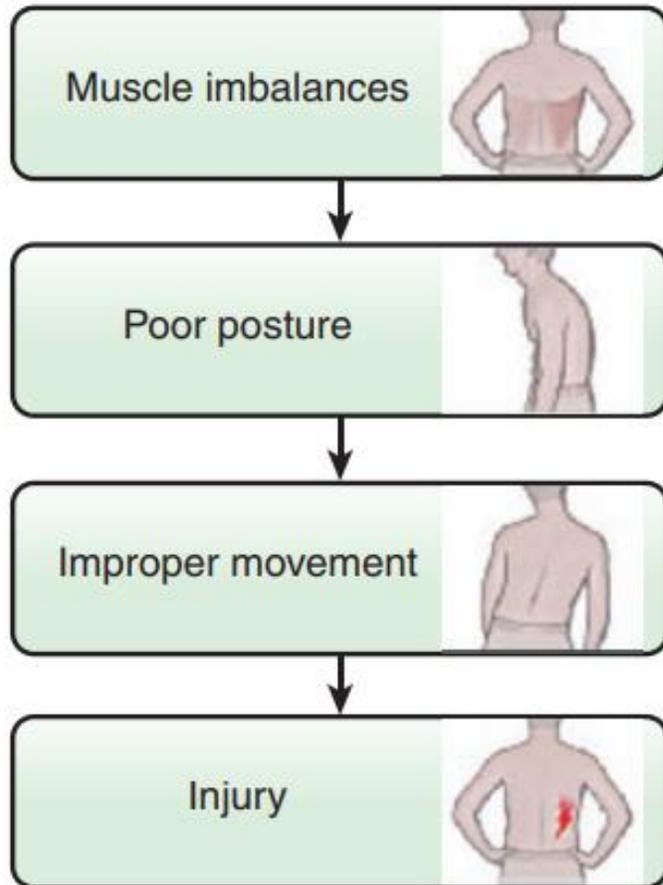
Causes

- 🚑 Poor posture
- 🚑 Repetitive movements

Disfunctions within the connective tissue of the body → injury → a repair process initiation



13. Work Related Injuries



Headaches



Neck pain



(Lower) back pain



Knee pain



Ankle sprains



Carpal tunnel syndrome

14. Extended Periods of Sitting

Creating postural imbalances

- 🧑‍🦽 Shoulders and head fatigue under the constant effect of gravity
 - 🧑‍🦽 Rounding shoulders
 - 🧑‍🦽 Forward head
- 🧑‍🦽 Tight hip flexors (rectus femoris, tensor fascia latae “TFL”, iliopsoas)

Low energy expenditure throughout the day

Poor cardiorespiratory conditioning

15. Common Distortion Patterns

Postural deviations = compensations of the body

Pronation distortion syndrome

- 🏃 Flat feet and knocked knees

Lower crossed syndrome

- 🏃 Arched lower back



Upper crossed syndrome

- 🏃 Forward head and rounded shoulders



16. Lower Crossed Syndrome

Lengthened Muscles (main impact)

- 🏋️ Gluteus (maximus, medius)
- 🏋️ Transversus abdominis, Internal oblique

Shortened Muscles (main impact)

- 🏋️ Hip flexor complex
- 🏋️ Gastrocnemius, Soleus
- 🏋️ Latissimus dorsi

Joints

- 🏋️ Lumbar extension increased
- 🏋️ Hip extension decreased

Possible injuries

- 🏋️ Hamstring complex strain
- 🏋️ Anterior knee pain
- 🏋️ Lower back pain



17. Upper Crossed Syndrome

Lengthened Muscles (main impact)

- 🏋️ Deep cervical flexors
- 🏋️ Mid and lower trapezius, Rhomboids
- 🏋️ Teres minor, Infraspinatus

Shortened Muscles (main impact)

- 🏋️ Sternocleidomastoid, Scalenes
- 🏋️ Upper trapezius, Latissimus dorsi
- 🏋️ Pectoralis major and minor

Joints

- 🏋️ Lumbar extension increased
- 🏋️ Hip extension decreased

Possible injuries

- 🏋️ Headaches
- 🏋️ Biceps tendonitis
- 🏋️ Rotator cuff impingement
- 🏋️ Thoracic outlet syndrome



18. How much is “too much” sitting?

Evidenced health benefits

- 🏃 Standing or walking at least 2 hours during working hours
- 🏃 Ideally 4 hours!

But I do sport after work...

- 🏃 Vigorous physical activity (clinical term for “exercise”) doesn’t cancel out the negative impact of time spent being sedentary

Recommended weekly physical activity (adults)

- 🏃 Moderate to high-intensity **aerobic exercise** at least 150 min/week next to muscle **strengthening exercises** at least twice a week
- 🏃 Less than 10% of population

*Eating a salade doesn't
undo the effect of smoking
a cigarette*

19. Keep Also the Brain Sharp...

Physical activity has a positive impact on brain and health

“Based on epidemiological evidence, people who lead a physically active lifestyle have lower risk of cognitive decline.”

20. Start in The Office... NOW

Research outcomes

- 🏠 Ideal sit-stand ratio between 1:1 and 1:3
- 🏠 Standing at least 30 min per hour evidenced with healthy benefits

Use standing desks

- 🏠 Apply “active” standing
- 🏠 Engage core muscles, maintain neutral symmetric posture

Perform static stretching (corrective flexibility)

- 🏠 Pectoral, hip flexor, neck muscles front
- 🏠 Remain 30 sec in the stretch position

Static stretching (corrective flexibility)

- 🏠 Pectoral, hip flexor, neck muscles front

21. Quick Wins Outside the Office...

Stand in a public transport

- 🏃 Active standing (don't hold yourself, balance)
- 🏃 Ideal as core activation activity

Take a walk

- 🏃 With or without purpose, just take a walk...
- 🏃 Focus on maintaining a proper posture

Watching TV? Make it active

- 🏃 Stand or foam roll or sit on a stability ball

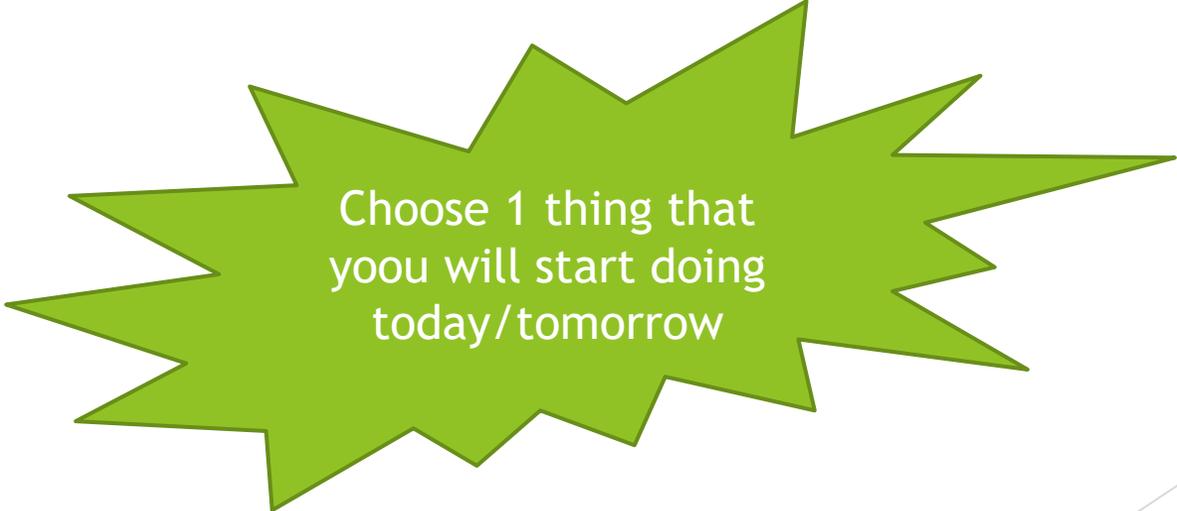
... AND, start with aerobic and resistance training

- 🏃 Engage personal trainer to help you define and achieve your goals



Next Subjects of Interest & Feedback

1. Basics of nutrition
2. Various training concepts and their benefits
3. Postural assessment and (individual) recommendations
4. Flexibility training concepts
5. Benefits of resistance training



Choose 1 thing that
you will start doing
today/tomorrow

Thank you!

