


Sitting Is the New Smoking:

Undoing the Damage of
Sedentary Behavior

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GOALS

- ▶ **Summarize** research on sedentary behavior & physical activity
 - ▶ **Describe** how Sedentary Behavior effects us physically
 - ▶ **Define** "SEDDNTARY" & "PHYSICAL ACTIVITY"
 - ▶ **Recommend** ways to reverse/prevent damage
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Meta-Analysis of Research

Statistics gathered from hundreds of studies indicate the following:

SITTING TOO MUCH IS BAD ☹️

1953

- ▶ London Transport Workers Study
- ▶ Bus Drivers vs Conductors
- ▶ Drivers 2X more likely to have heart disease than Conductors
- ▶ Driver's sat 90%
- ▶ Conductors moving & climbing stairs (600 per shift)

Today

- ▶ Current studies have further defined & clarified physical activity and risk
- ▶ FINDINGS: Regular physical activity reduces **all-cause mortality** by

20 to 40%

PAST & PRESENT

Physiological Effects of Sedentary Behavior



- ▶ **Adiposity** (Body Fat)
- ▶ **Triglycerides** (Fats floating in the bloodstream)
- ▶ **Hypertension** (High blood pressure)
- ▶ **Insulin Resistance** (Increased blood sugar → Type 2 Diabetes)
- ▶ **Inflammation** (At the vascular level)

MORE OF THE BAD

- ▶ HDL (Good cholesterol which means more bad cholesterol)
- ▶ Cardiorespiratory Fitness (The ability to take in and utilize oxygen)
- ▶ Bone Density
- ▶ Vascularization (Loss of existing structure)
 - ▶ AND existing vascular system becomes constricted leading to hypertension and increased likelihood of clot formation


LESS OF THE GOOD

DISEASE STATES LINKED TO THE PHYSIOLOGICAL EFFECTS OF SEDENTARY BEHAVIOR

- ▶ Heart Attack (MI)
 - ▶ Stroke/TIA
 - ▶ Anxiety
 - ▶ Type 2 Diabetes
 - ▶ Arteriosclerosis
 - ▶ Colon Cancer
 - ▶ Kidney disease
 - ▶ Obesity
 - ▶ High Blood Pressure
 - ▶ Muscle Imbalances
 - ▶ Osteoporosis
 - ▶ Metabolic Syndrome
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SEDENTARY BEHAVIOR

Any waking **behavior** characterized by an energy expenditure ≤ 1.5 metabolic equivalents (METs), while in a sitting, reclining or lying posture.



- ▶ How long do you have to be sedentary for your body to experience negative changes?
 - ▶ 20 minutes
 - ▶ 1 hour
 - ▶ 3 hours
 - ▶ 10 hours

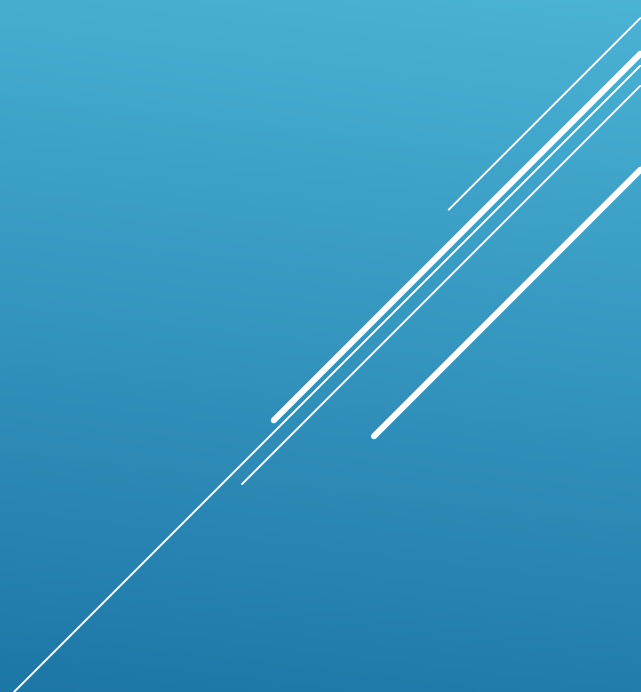
- ▶ ANSWER:

- ▶ After **20 minutes** there are changes in your blood pressure and blood glucose.
- ▶ Every **hour** leads to 7 extra minutes of hyperglycemia.
- ▶ After **3 hours**, changes that lead to vascular dysfunction occur.
- ▶ Compared to women who sit 5 hours a day, women who sit **10 hours** a day are 63% more likely to experience significantly shortened lifespans.

S.B.: How much is too much?

PHYSICAL ACTIVITY

Any movement of the body that works your muscles and requires more energy than sitting.



- ▶ How long do you have to be physically active to counteract or prevent the effects of prolonged sitting?
 - ▶ 2 minutes
 - ▶ 10 minutes
 - ▶ 30 minutes
 - ▶ 150 minutes

▶ ANSWER:

- ▶ **2 minutes** of moderate intensity activity every 20 minutes can blunt the changes in blood pressure & blood sugar
- ▶ A **10-minute** walk after a meal can change glycemic response by 22%
- ▶ **30-minutes** of moderate intensity activity each day can help regulate blood sugar for 11 hours
- ▶ **150 minutes** of moderate intensity activity each week can reduce your chances of death by all causes

P.A.: How much is enough?

GET F.I.T.T.!

HOW MUCH PHYSICAL ACTIVITY DO
YOU REALLY NEED?



▶ **Frequency**

- ▶ How many days a week do you need to do an activity to gain health benefits?

▶ **Intensity**

- ▶ On a scale of 1-10, how hard should you be working during your activity sessions?

▶ **Time**

- ▶ How long must you do each activity?

▶ **Type**

- ▶ **Aerobic (cardiorespiratory)**
- ▶ Resistance/Strength Training
- ▶ Flexibility (stretching)

▶ Frequency

- ▶ 3-5 days per week
 - ▶ We prefer MOST or ALL days 😊

▶ Intensity

- ▶ 3-6 out of 1-10
 - ▶ Purposeful—a bit uncomfortable—more frequent breathing

▶ Time

- ▶ 30-60 minutes per day totaling **150**-300 minutes a week
 - ▶ Each bout should last a minimum of 10 minutes

TYPE: AEROBIC TRAINING

CARDIO-RESPIRATORY BENEFITS

MEASURING INTENSITY:

- ▶ How much is enough?
- ▶ How much is too much?

*Are you cleared for Moderate Intensity exercise?

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RPE Scale: Rate of Perceived Exertion

****GOAL 3-6****

“Moderate Sweating, able to speak” (You can speak 5-6 words at a time before taking a breath.)



“Barest Exertion” to “Comfortable, slight difficulty breathing.” (You notice a change of breathing when you are talking.)



10 Maximal Exertion

→Cannot push any harder

9 Very Hard Activity

→Extremely difficult to breath

8 Hard Activity

→Difficulty breathing, unable to speak

7 Hard Activity

→Difficulty breathing, unable to speak

6 Moderate Activity

→Moderate sweating, able to speak 5-6 words at a time

5 Moderate Activity

→Light sweating, speaking is easy

4 Light Activity

→Breaking a sweat, comfortable to speak

3 Light Activity

→Comfortable, noticeable change in breathing

2 Minimum Activity

→Minimal exertion

1 Resting

→No exertion

Sample Week

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Walking* the dog 10 minutes	Walking the dog Cardio Class 45 minutes	Walking the dog Yard Work (Mowing, edging, & replanting flower beds) 50 minutes	Walking the dog Cardio Class 45 minutes	Walking the dog 10 minutes	Walking the dog 10 minutes	Walking the dog Mall Walking* 40 minutes

Total activity minutes: 210

Minutes through normal daily activities : 110

*But remember intensity level must be enough that your

Additional time beyond regular life activities: 100

ANATOMICAL EFFECTS OF
SEDENTARY BEHAVIOR



Fact or Fiction?


Sitting puts *more* pressure
on your spine
than standing does.




Under **PRESSURE**

FACT!

Even when using proper posture, there is almost 50% more pressure on your spine when sitting than when standing

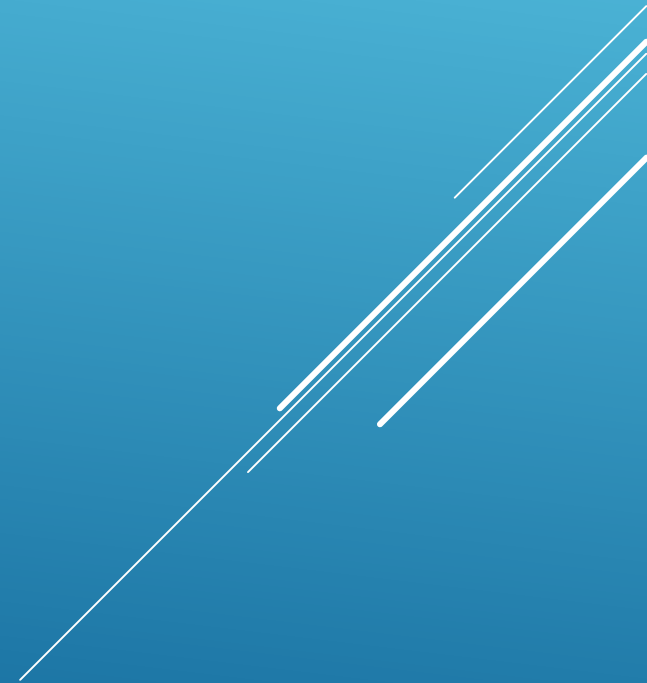
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UNFORTUNATELY, improper posture and too much sitting leads to some muscles becoming overly tight while others weaken. These muscular imbalances lead to back & neck pain, loss of range of motion, and problems with balance.

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To correct muscle imbalances: STRETCH & STRENGTHEN

Tight muscle groups must be *stretched* & weak muscle groups must be *strengthened*.



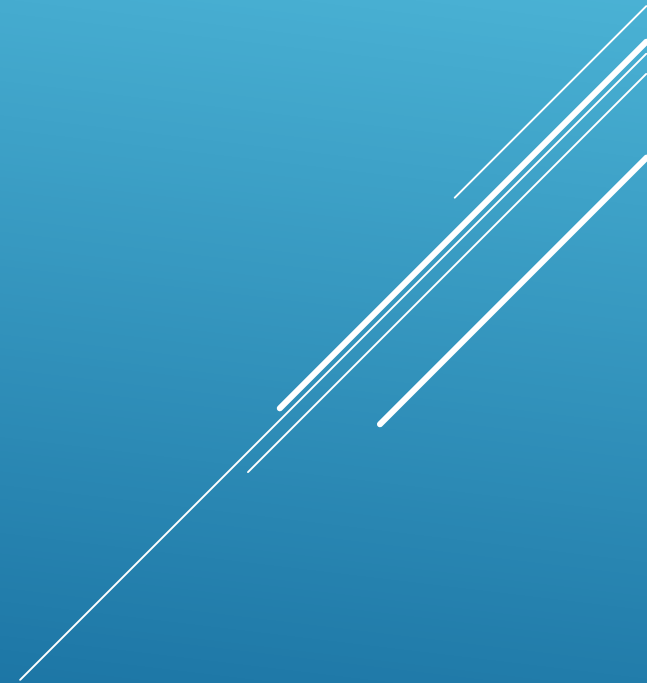
MUSCLES that need to be STRETCHED:

UPPER BODY:

Trapezius, levator scapula, pectorals

LOWER BODY:

Erector Spinae & hip flexors



MUSCLES that need to be STRENGTHENED:

UPPER BODY:

Erector Spinae & Hip Flexors

LOWER BODY:

Abdominals & Gluteus Maximus

Questions?

- Try a class.
 - Stop by the Wellness Gym.
 - Check with your doctor.
 - Take it slow & easy when you first start.
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