

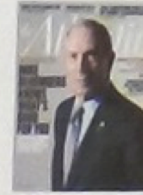
Prolonged Sitting: The Sitting Disease

How your chair is killing you
and why the gym won't save you

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Confirmed: He Who Sits the Most Dies the Soonest

By Neil Wagner

Another study shows that sitting is really, really, really bad for your health. Please, just get a standup desk!



The risk of heart failure was more than double for men who sat for at least five hours a day outside of work and didn't exercise very much compared with men who were physically active and sat for less than two hours a day, says the study's lead author,

Are you sitting down? Your heart failure risk is higher

Franci Hellmich, USA TODAY 5:08 p.m. EST January 21, 2014

Both sitting too much and exercising too little increase the risk of heart failure.



(Photo: ThinkStock)

STORY HIGHLIGHTS

- Men who sit five or more hours a day have an increased risk of heart failure
- Those who exercise very little are also at an increased

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Both sitting too much — sometimes called sitting disease — and exercising too little may increase the chance of heart failure, a new study suggests.

The risk of heart failure was more than double for men who sat for at least five hours a day outside of work and didn't exercise very much compared with men who were physically active and sat for less than two hours a day, says the study's lead author,

Deborah Rohm Young, a senior scientist at Kaiser Permanente in Pasadena, Calif. Heart failure is when the heart muscle isn't pumping blood adequately, but it doesn't mean the heart stops



HEALTH AND WELLNESS

Why kids shouldn't be

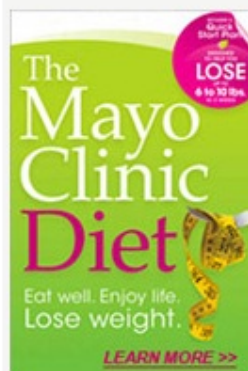
SEARCH



beds used by more
third, study finds



Too much sitting also seems to increase the risk of death from cardiovascular disease and cancer.



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Researchers have linked sitting for long periods of time with a number of health concerns, including obesity and metabolic syndrome — a cluster of conditions that includes increased blood pressure, high blood sugar, excess body fat around the waist and abnormal cholesterol levels.

Too much sitting also seems to increase the risk of death from cardiovascular disease and cancer.

One recent study compared adults who spent less than two hours a day in front of the TV or other screen-based entertainment with those who logged more than four hours a day of recreational screen time. Those with greater screen time had:

- A nearly 50 percent increased risk of death from any cause
- About a 125 percent increased risk of events associated with cardiovascular disease, such as chest pain (angina) or heart attack

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Inactivity Physical

Paradigm Shift

Exercise Physiology

Physiology of Inactivity

**Sitting:
The New Smoking**

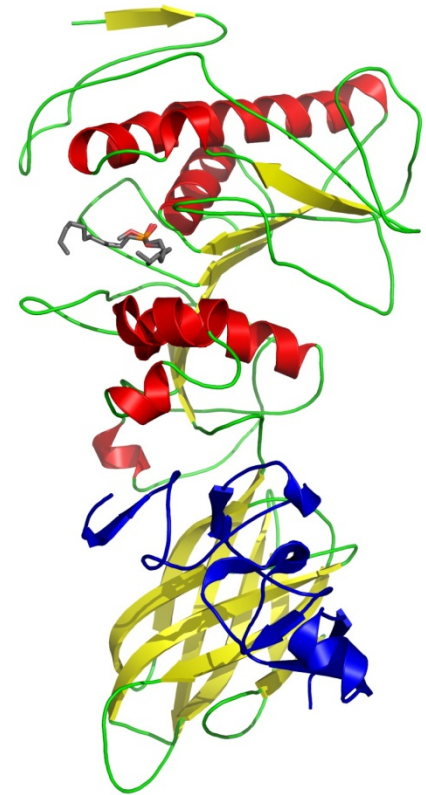


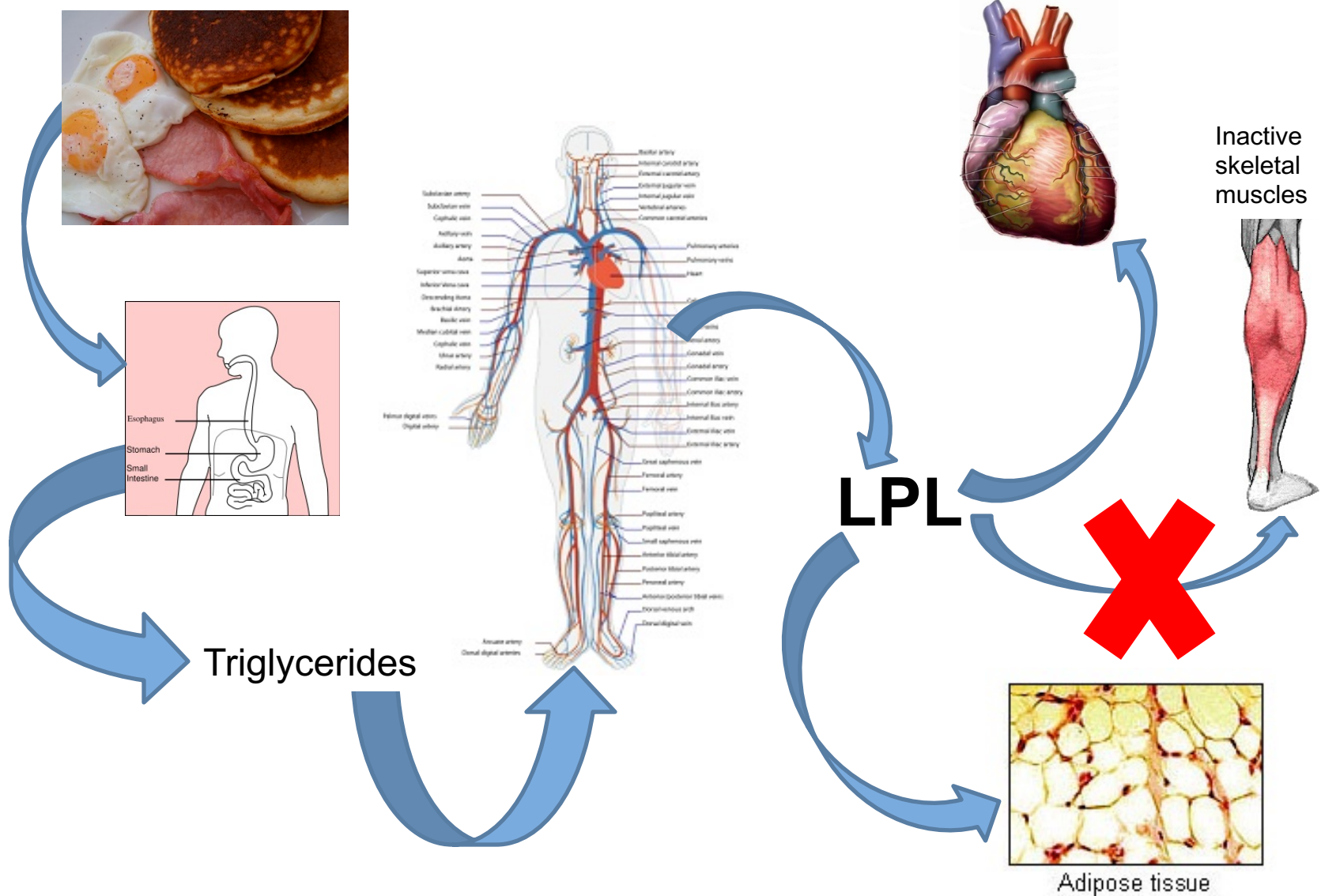
New findings - Inactivity Physiology

1. Changes in *enzyme activity* (LPL)
2. Changes in *gene expression* (LPP1)

1. Lipoprotein Lipase (LPL)

- Water-soluble enzyme
- Breaks down triglycerides (Most common form of fat)
- Affects uptake of triglycerides
- Found in heart, muscle and fat





LPL

Affected by *activity* of skeletal muscles

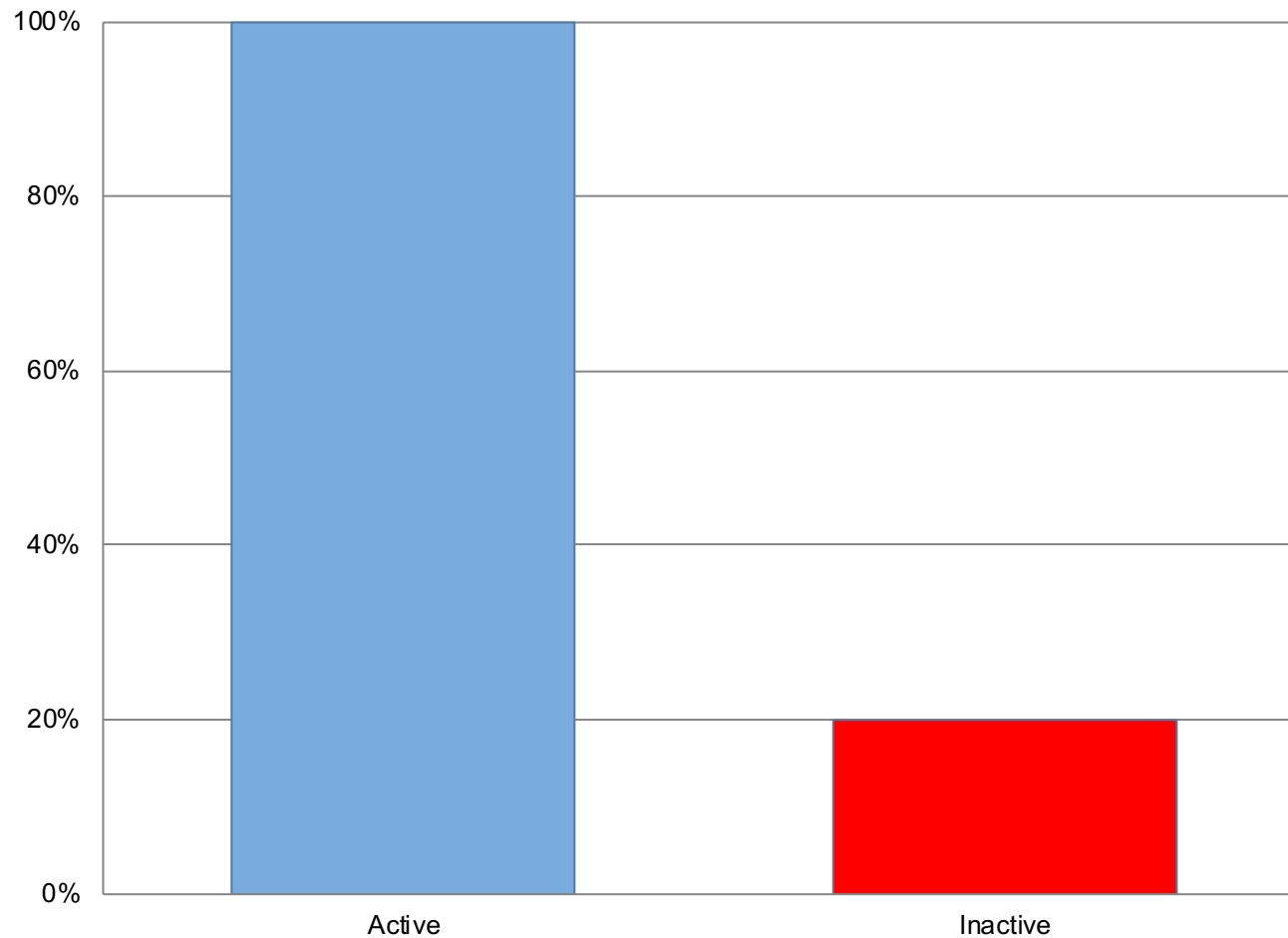
Inactive

- Not moving
- Sitting/lying down
- Little/no contraction in skeletal muscles

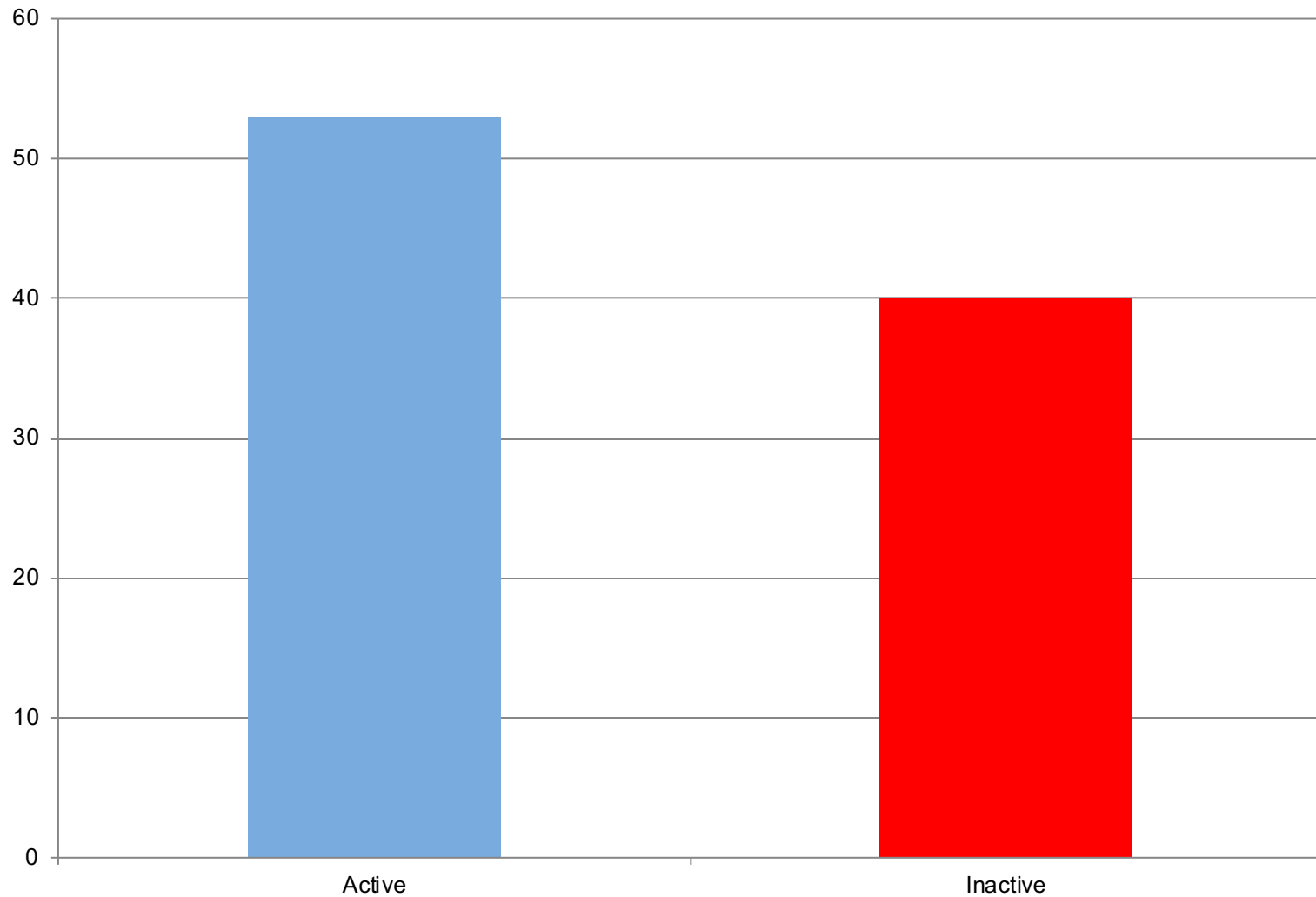
Active

- Moving
- Standing, walking
- Contraction of skeletal muscles
- NOT necessarily “exercise”
- Low-intensity physical activity (LIPA)

Triglyceride uptake in skeletal muscles



HDL Cholesterol (mg/dL)

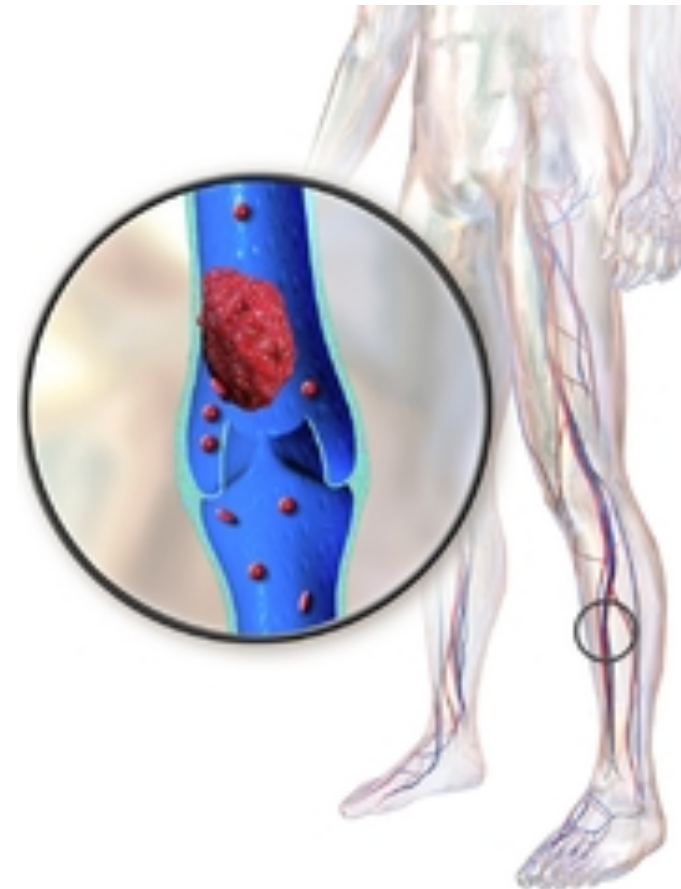


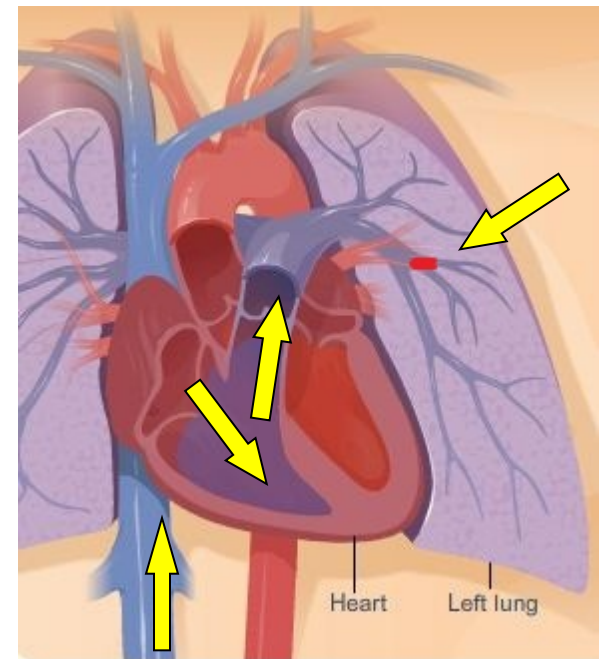
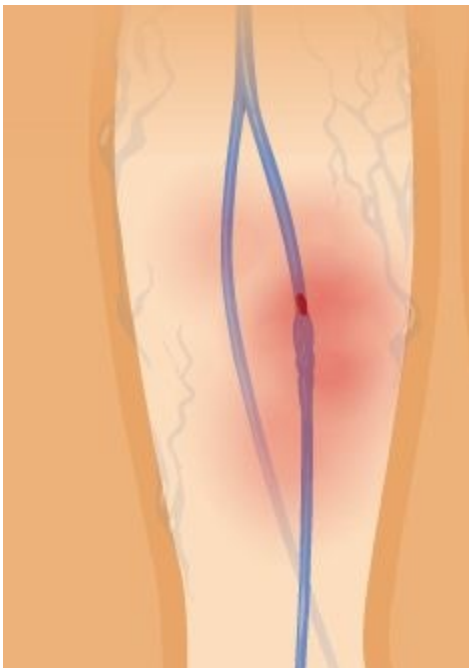
2. LPP1 (Gene in Skeletal Muscle)

- One of many genes that regulates blood flow within muscles
- Also involved in blood clotting
- Turned on/off by physical activity/inactivity
- Suppressed after hours of sitting
- Exercise – *not* effective countermeasure

Inactivity and DVT

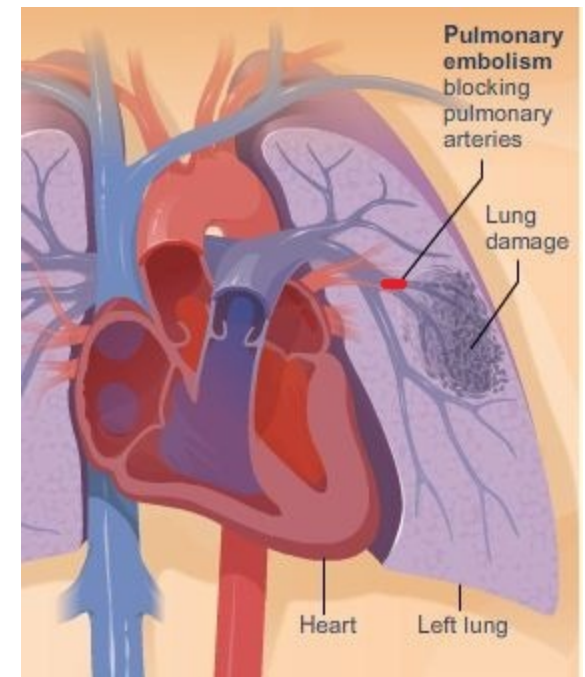
- Deep Vein Thrombosis (DVT)
- 1/1000 adults at risk for DVT in U.S.



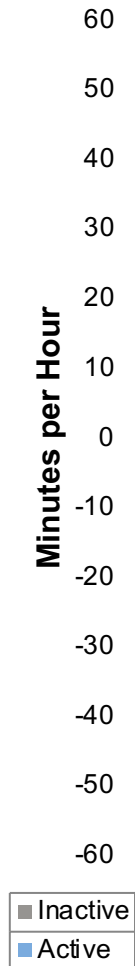


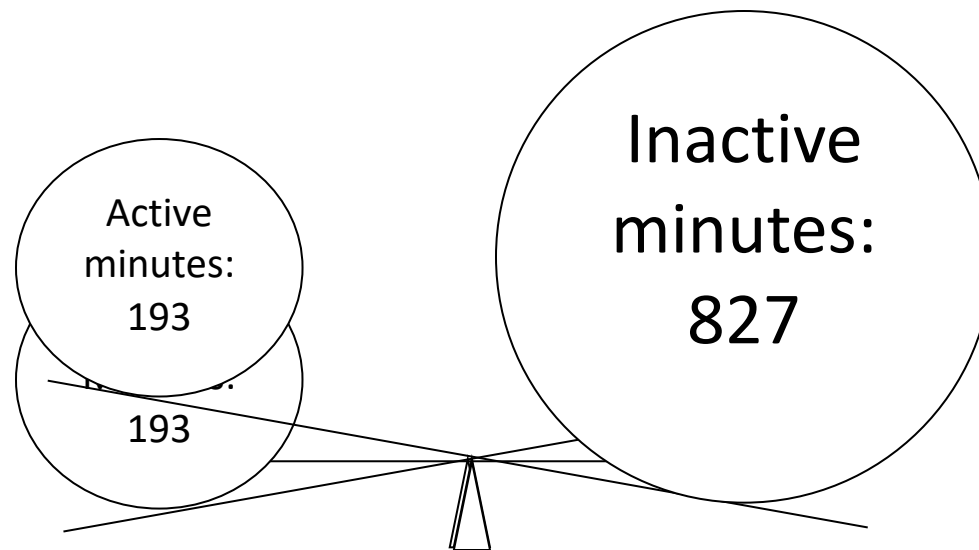
DVT and Pulmonary Embolism

- 60,000 - 100,000 deaths due to DVT/PE (CDC)
- 95% of pulmonary embolism cases caused by DVT



Activity vs Inactivity

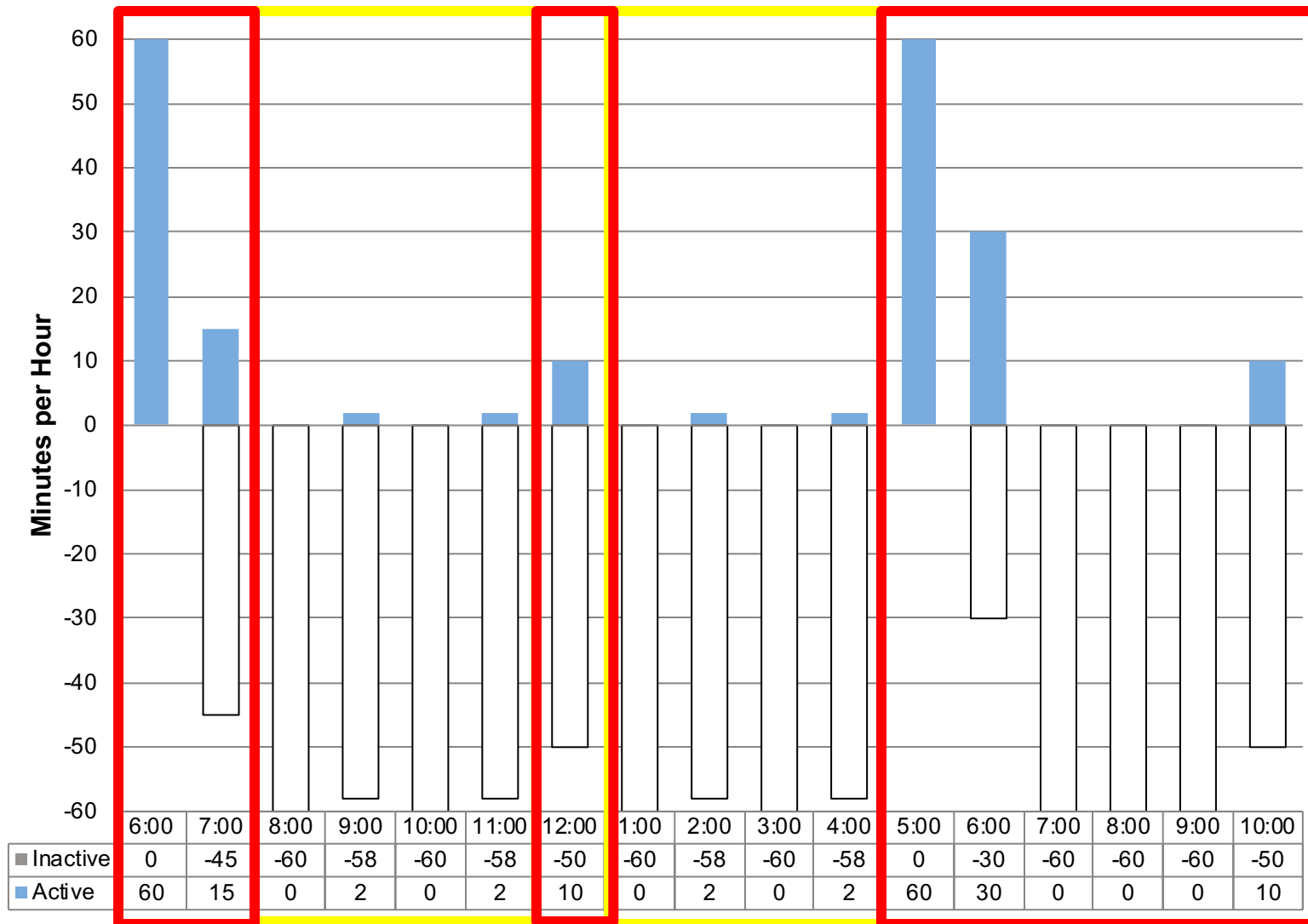




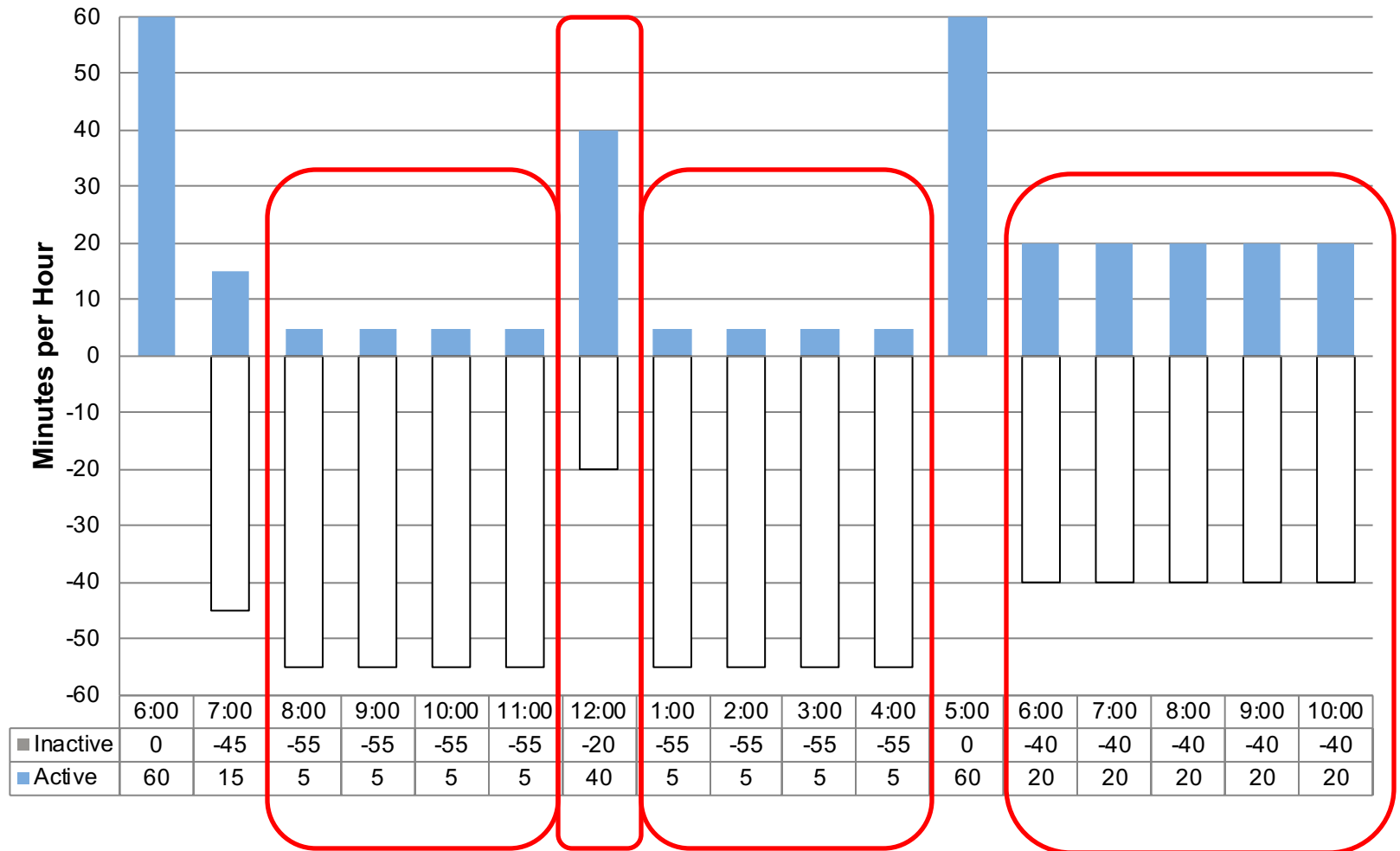
Be (Pro) Active

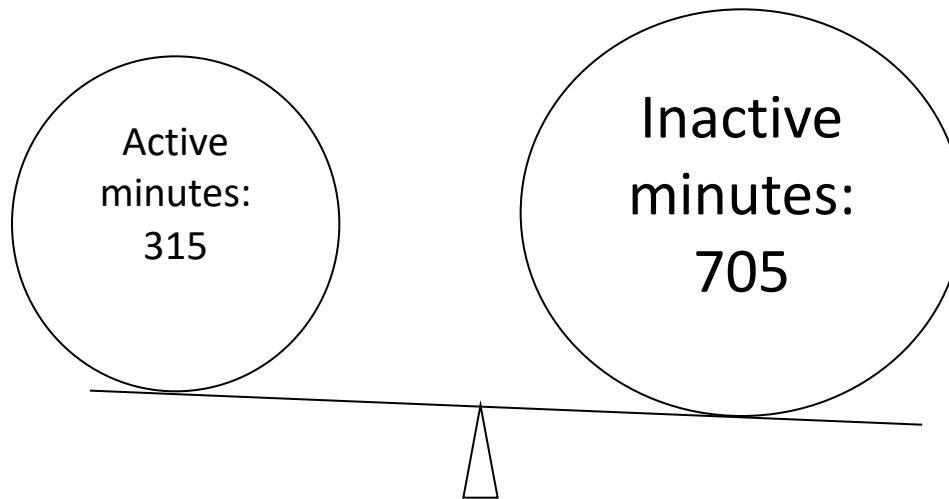
- Avoid *prolonged* sitting
- Get up and move
- A little goes a long way

Activity vs. Inactivity



Activity vs. Inactivity





Suggestions

At Work

- Stand up/walk when on phone (cordless)
- Stand up when reading online (emails, web pages, documents)
- Put printer further away
- Use small water bottles or cups & fill them frequently



Goal: 5 min/hour

Suggestions

At Work

- Walk and Talk
 - Walking meetings
 - Instead of email
- Set reminders to get up (computer, smart phone)
- Take Stand & Stretch breaks
- Don't eat lunch at desk!

Goal: 5 min/hour



Suggestions

At Home

- Walk in evenings & on weekends (dogs are good)
- Lose the TV remote
- Stand up during commercials
- Cook from scratch (stand)
- Do yard work – manually



- Goal: 10-20 min/hour

What about...

- Sit/Stand Desks?



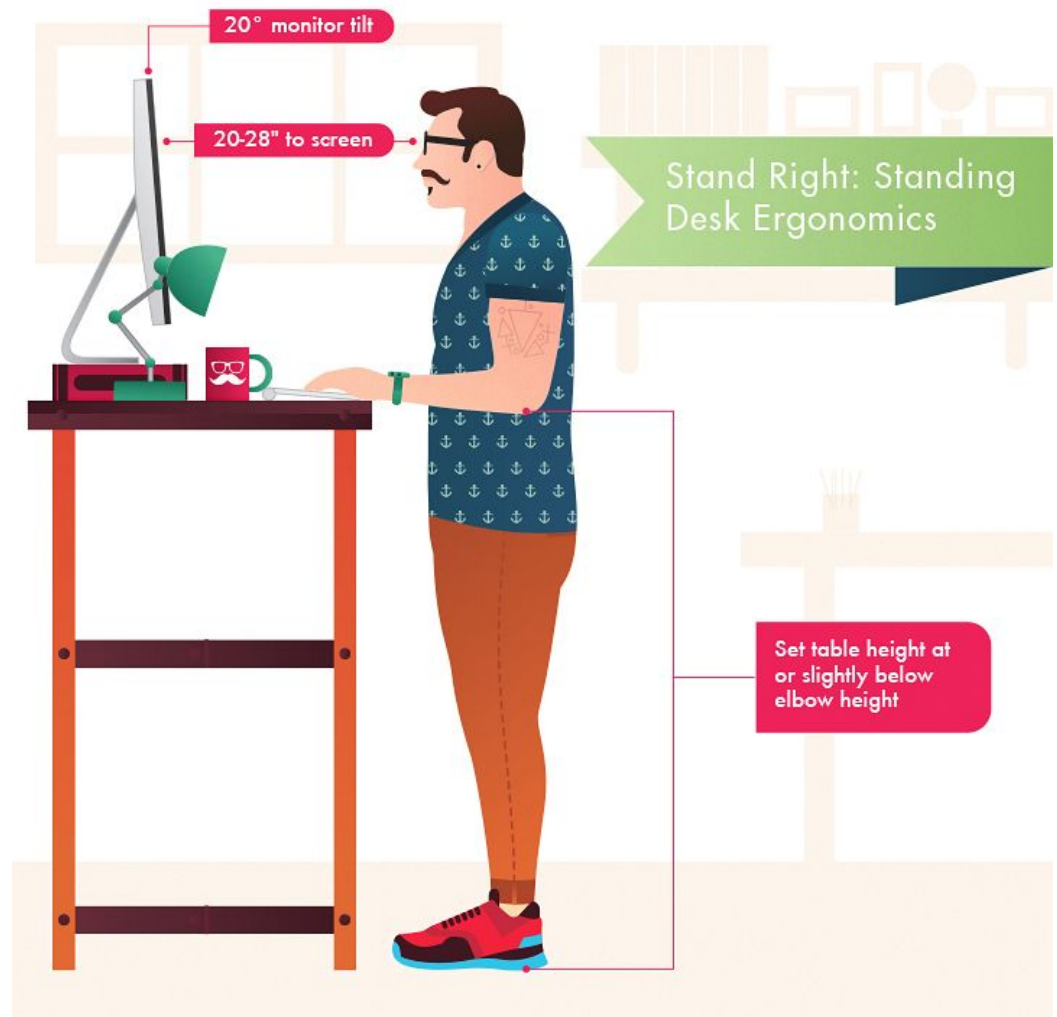
Sit to Stand Desks

- Think Posture
- Think Motion



Sit to Stand Desks

- Think Posture
- Think Motion



Sit to Stand Desks

- Think Posture
- Think Motion



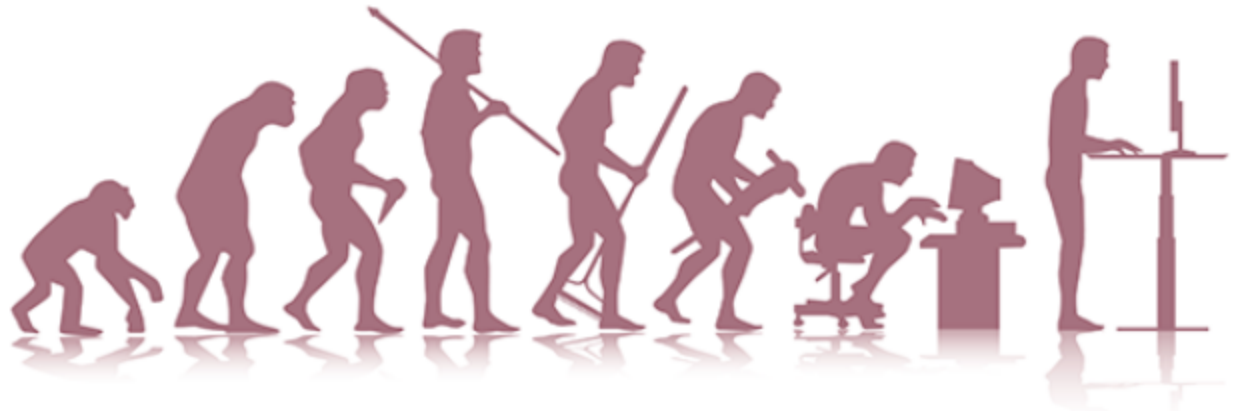
Sit to Stand Desks...Purchasing

- Think about options...
- Central Station?
- Table Top?
- Medical Need?



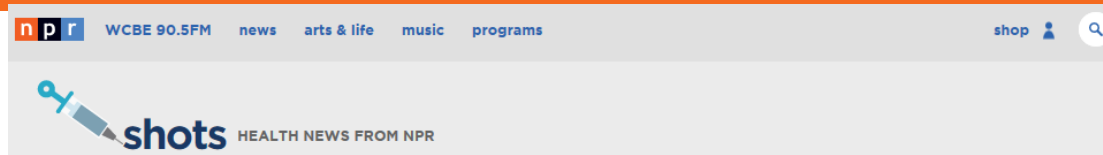
BUT.....

LESS THAN **10%**
OF SIT-STANDESK OWNERS ARE ACTUALLY USING THEIR DESK!



IT IS TIME FOR A NEW EVOLUTION!

..... it is a true behavioral challenge to override the learned sedentary behavior that so many of us have adopted.



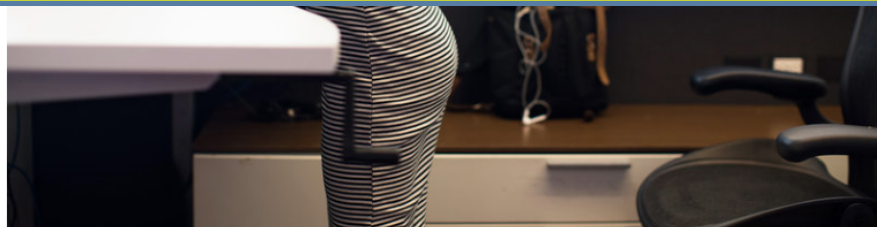
YOUR HEALTH



Stand To Work If You Like, But Don't Brag About The Benefits

March 17, 2016 - 11:25 AM ET

ANGUS CHEN



REVIEWS ARE STILL MIXED

Keys to Success

- Sit Less, Move More
- Puttering, Shifting your weight, stretching, etc.
- Don't become a chair potato....
- Think Posture!

The Millennial Office



The Millennial Office





**A BODY IN MOTION WANTS TO STAY IN MOTION.
A BODY AT REST SEEKS MORE REST.**

What about...

- Treadmill Desks?

NO!



What about...

- Ball Chairs?

NO!



What about...

- Stretching?
- Definitely



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Summary

- Triglyceride levels affected by amount of physical activity
- Blood flow/blood clotting affected by amount of physical activity
- Time, not intensity

Summary

- You cannot focus only on exercise time and ignore sitting time.
- It is not one or the other, but both too much sitting and too little exercise create a public-health hazard.

Take Home Message

Sit less – move more

Get off your seat – get on your feet

Questions?

Comments?

