

Fall Prevention

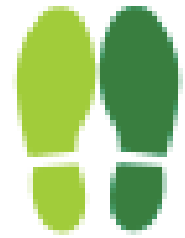
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Language and
words matter

Let's
balance



① Stand with your feet side-by-side.

Conditions:

1. Eyes open
2. Eyes closed
3. Head turning



③ Tandem stand: Place one foot in front of the other, heel touching toe.

How do we balance?



Somatosensory

Touch, pressure, pain, position, movement, vibration --> sensory input on body position and movement from muscles, joints, skin, fascia.
Arms/legs --> spinal cord --> brain for processing

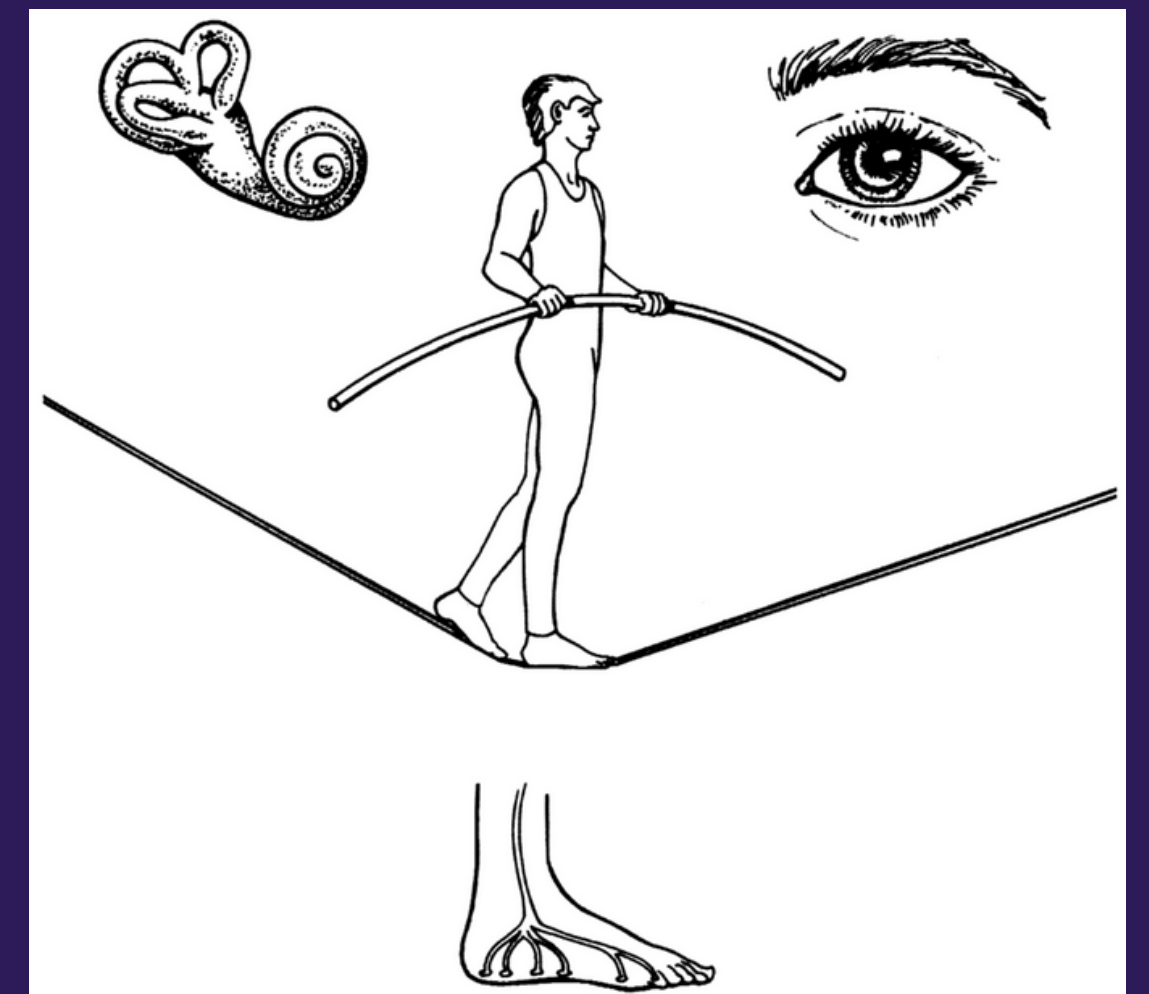
Visual

Sight, motor coordination, depth perception and the connections to the brain

Vestibular

Inner ear providing information about head position, motion, and spatial orientation.
Coordinates with visual system in reflexes like Vestibular-Ocular Reflex

Complex postural control system

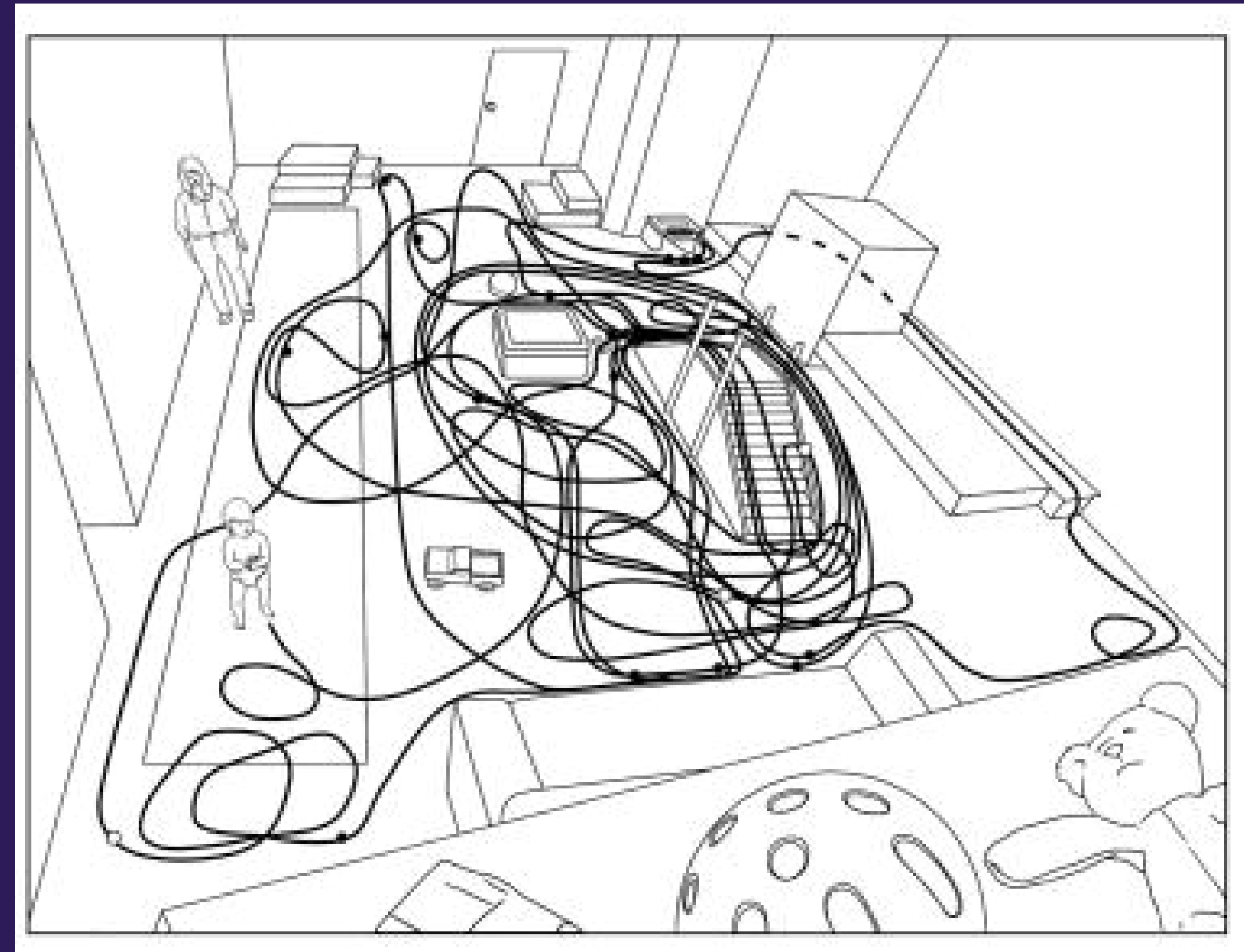


Toddlers

2,368 steps per hour

17 falls per hour

(Karen Adolph, 2013)





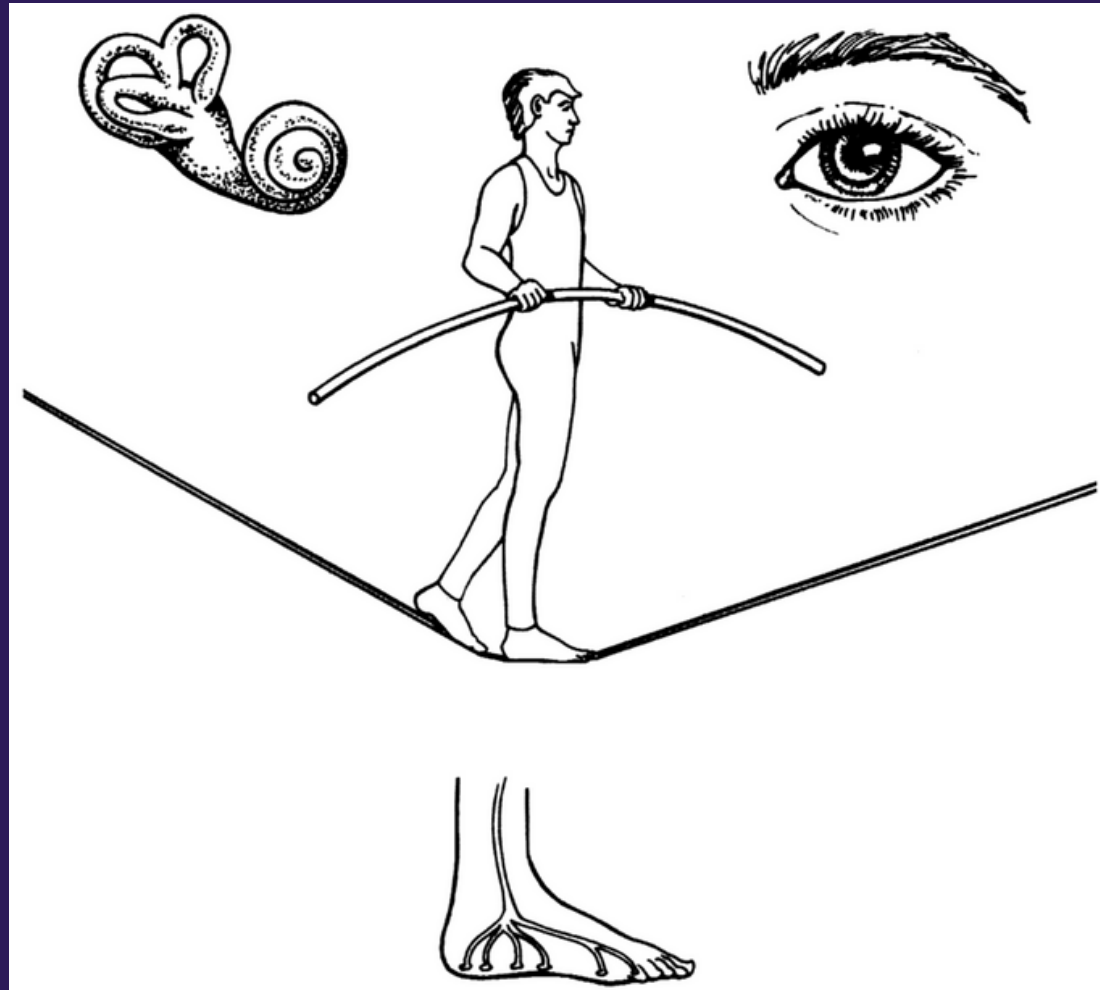
Older adults

1,860 steps per day

2/3 sit for > 9 hours/day

< 5 minutes in moderate-vigorous activity

(Danilovich, 2017; Harvey, 2013; Leung, 2017)



Normal Aging:

50% of muscle strength loss from 30 to 80 years of age

Decreased visual acuity

Decreased speed of nerve transmission

****these losses are accelerated with inactivity and with sedentary lifestyles****

Use it or lose (more of) it!



If you want to reduce falls,
you must work on balance

Get people moving more
and sitting less

Benefits of exercise

2018 Physical Activity Guidelines

Regular physical activity reduces risk of fall-related injuries by 40%

Benefits of physical activity in reducing fall risk are the same for older adults at risk for falls and those who aren't

Dose-response relationship: the more and the more intense you exercise, the better it is

Limited evidence for yoga / flexibility

Tai Chi effectiveness based on less rigorous studies

Exercise Prescription

#1 most recommended intervention to improve balance



Resistance exercise

High intensity (>70% of maximum weight able to lift)
2x/week - major muscle groups



Aerobic exercise

Moderate to high intensity
Goal: 150 minutes per week



Balance exercise

Moderate to high intensity challenge to balance
Minimum dose of 50 hours
(Sherrington, 2008)

Exercise Prescription

Research by Power and Clifford in 2013

Frequency = Twice per week. 1 time per week is insufficient

Intensity = Must be "highly challenging"

Time = Need at least 1 hour per week

Type = What's ineffective: doesn't work on balance, doesn't progress exercises, and isn't functional



Do your programs reflect these recommendations?

- Twice per week
- More intense
- Specifically working on balance exercises
- Progressive and functional



How do we implement?

Agency Level

Goals:

Identify - increase balance awareness

- Poor balance is not a normal part of aging!

Organizational culture that promotes movement and activity

01

Balance Screenings

CDC STEADI

NCOA Fall Prevention for Older Adults

02

"But they could fall!!!"

Active people have a lower incidence rate of injury compared to inactive people (Carlson, 2006)

Exercise-related injury rate = 14%
Fall-related injury rate = 2% (Little, 2013)

**2% incidence
rate of falls
during any
exercise or
sport**

**33% rate of
falling each
year among
older adults**



Risk management strategies

- Trained staff
- Chairs / bar / table for support as needed
- Changed language: empower older adults vs. scare tactics

Department Programming Level

Don't try to re-invent the wheel

Evidence based exercise classes exist - use them!

Confront our own biases of aging

"They can't do that"

"I don't want anyone to fall" --- make sure that staff are encouraged to encourage clients

"My clients won't want to do that" --- unless you have the data to support that statement, don't assume

CJE SeniorLife Falls Programming

Otago Exercise Program

Bingocize

Balance screenings

Health education / balance talks

CDC balance screenings through care management

On zoom

In residential housing buildings

Using HIIT for variety of fitness levels

Prizes for Bingo



Results

Over 1,800 participants in exercise classes from August 2020 --> July 2021

:"BTW, this week - THIS WEEK - I felt a huge improvement in my balance when putting on my shoes! It's like I was young again :) Can't wait to tell my sister Sylvia - we now talk once a week, using your class as inspiration!"

Focus on balance

**Turn up the intensity, offer lots of opportunities to be active,
and challenge our clients!**



Thank you!

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