

Vision and Gait parameters associated with fall risk in glaucoma patients

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FIGS Party

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Falls - significant public health issue

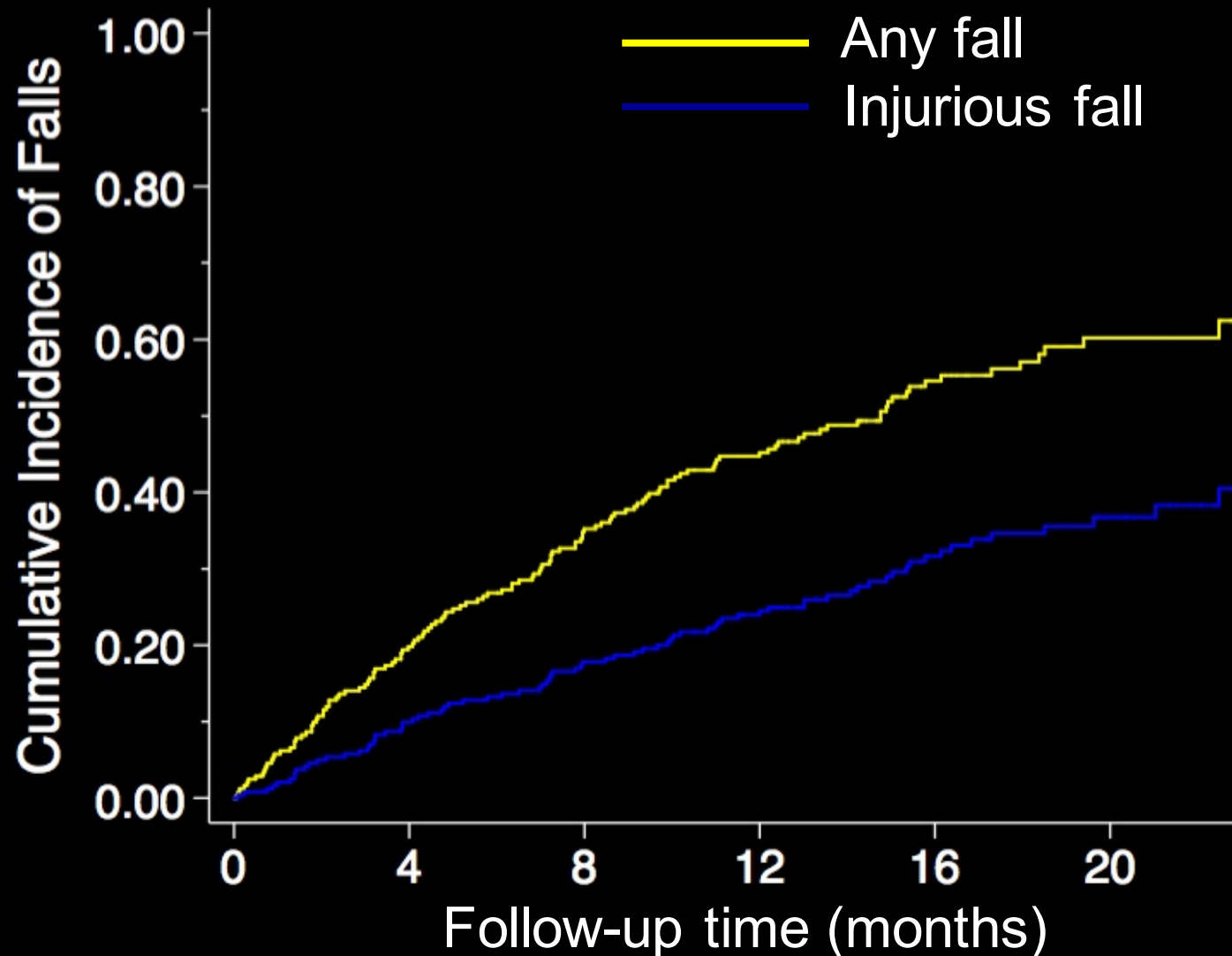
Leading cause of accidental death in older adults

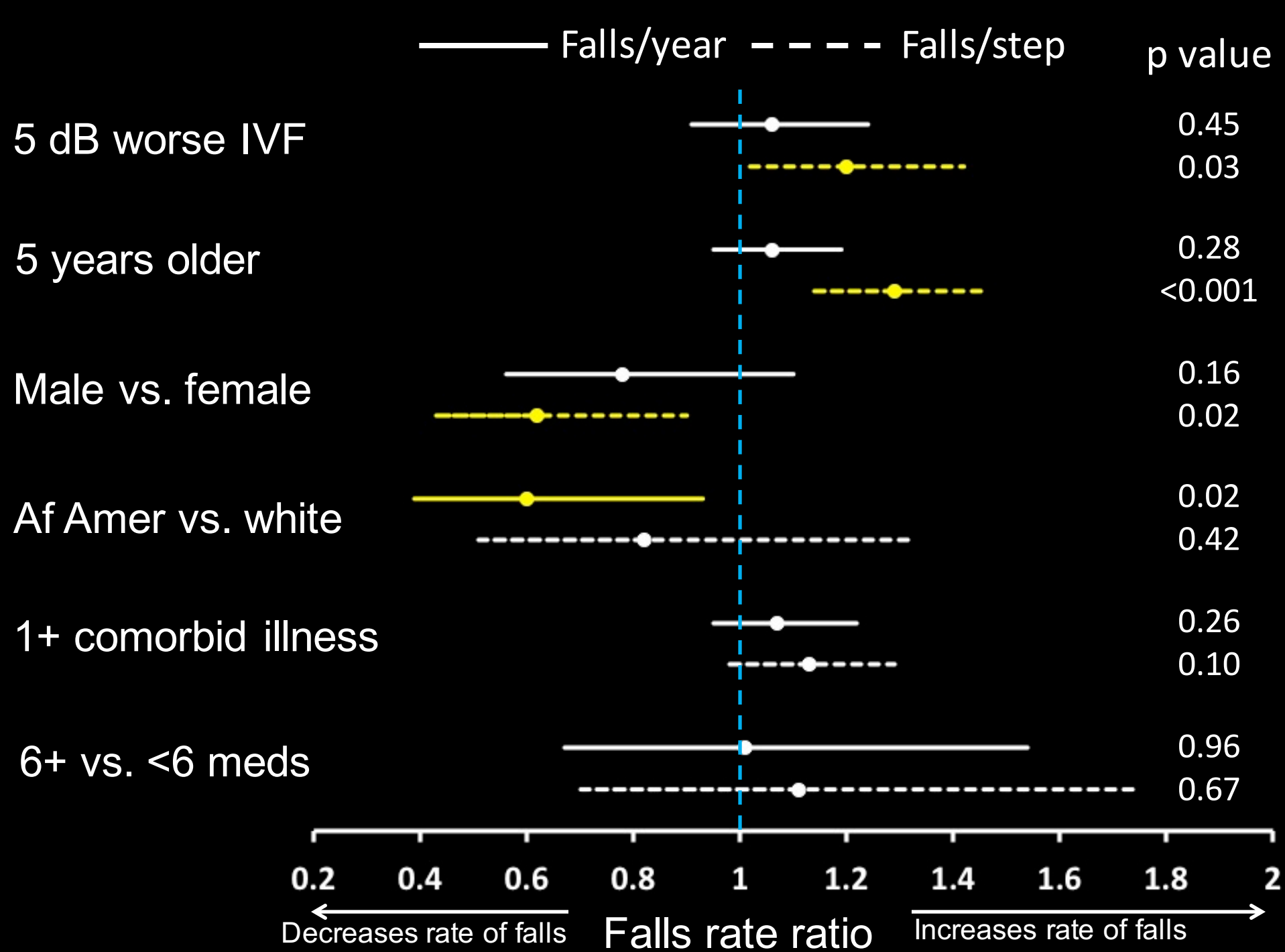
80% of injury-related hospitalizations in elderly

2020 → \$55 billion in US



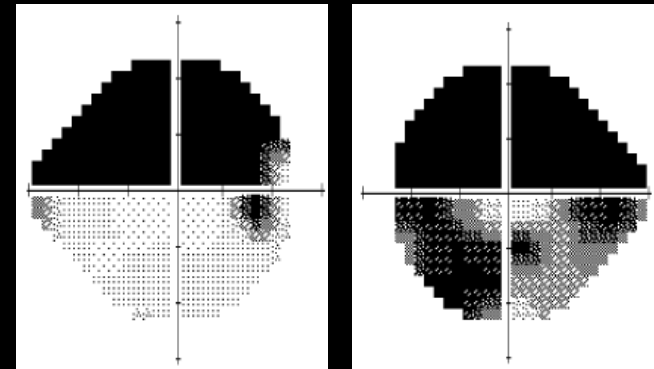
Significant portion of study population had a fall or injurious fall



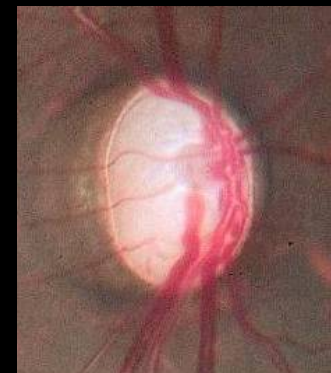


Peripheral vision likely the most important visual predictor of falls

VF loss, but not VA →
higher rate of falls



Several studies suggesting
glaucoma associated with ↑ falls



Impact of 5 dB ↓ / 5 pts missed

p value

Better-eye: Total

Better-eye: Superior

Better-eye: Inferior

IVF: Total

IVF: Superior

IVF: Inferior

Peripheral: Total

Peripheral: Superior

Peripheral: Inferior

0.01

0.02

0.02

0.03

0.03

0.04

0.02

0.11

0.005

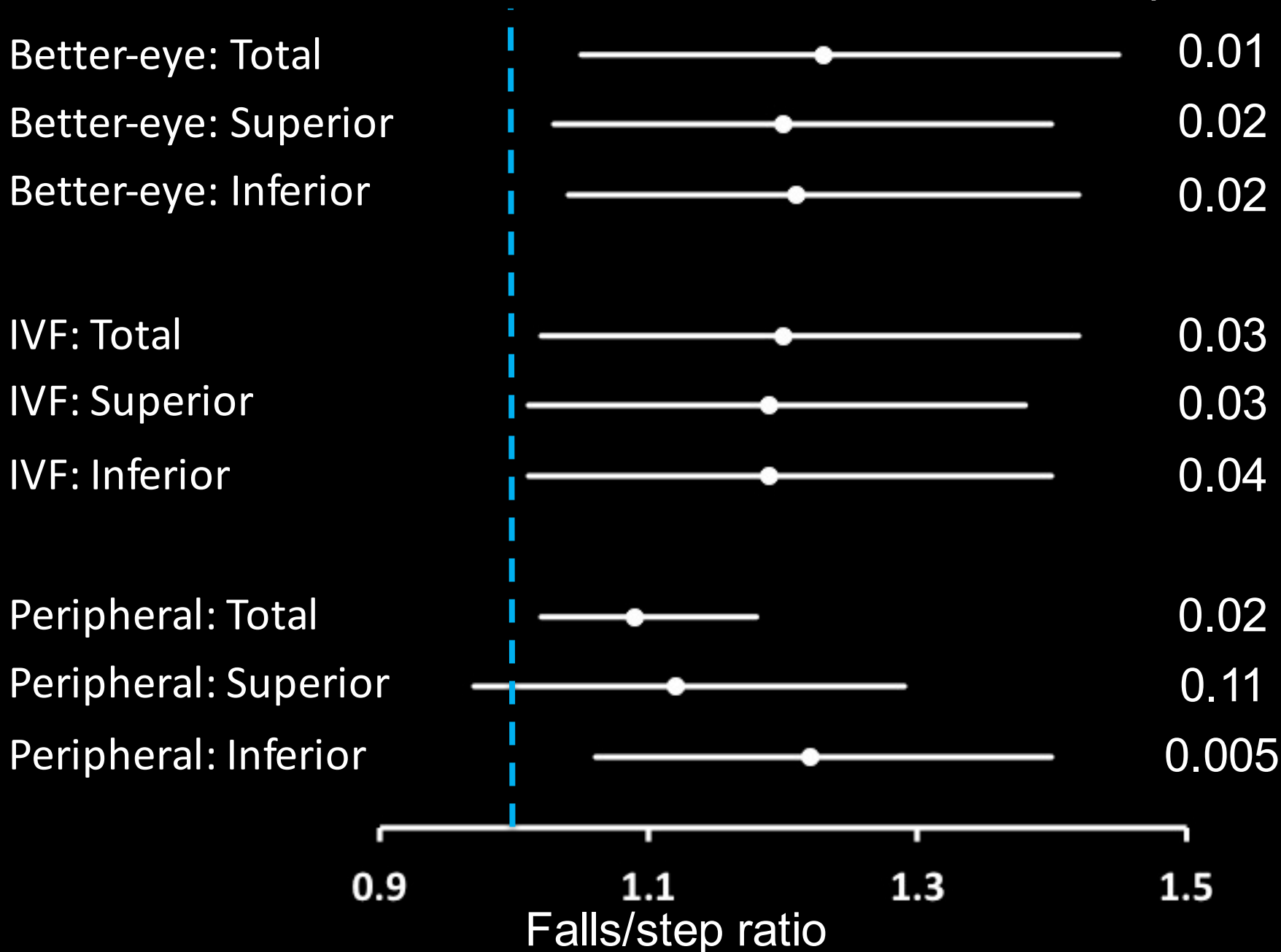
0.9

1.1

1.3

1.5

Falls/step ratio



Gait maybe an important reversible risk factor for falls

Better than static balance (no falls when standing still)

Several gait features associated with falls

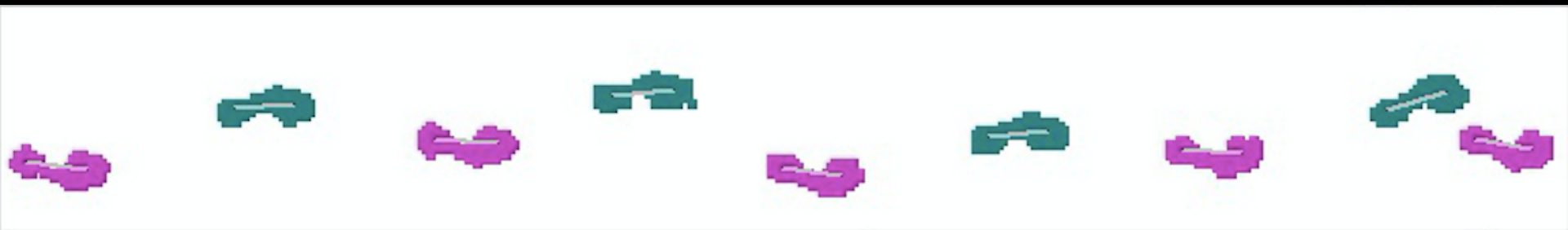
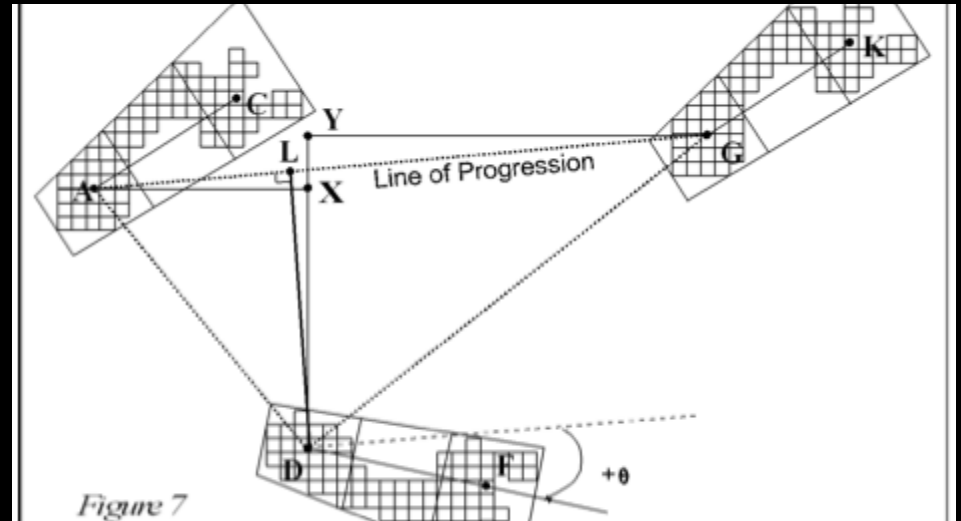
Interventions to improve gait → fewer falls

Gait characteristics of walking

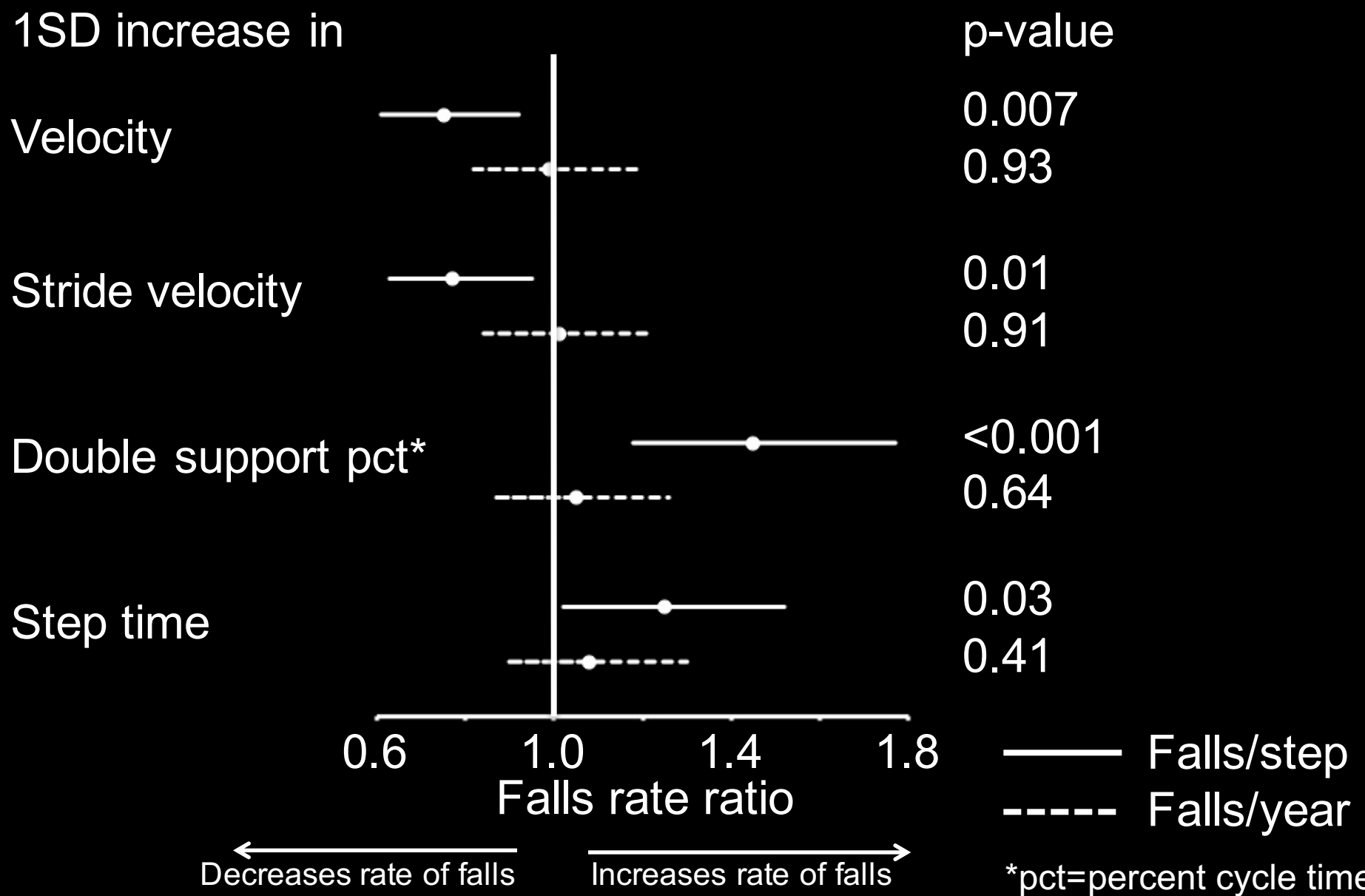
Base width: DL

Step length: AX

Stride length: AG



Association between fall rates and gait



Association between fall rates and gait variability

1SD increase in

p-value

Single support
time CoV*

<0.001

0.001

Step time CoV

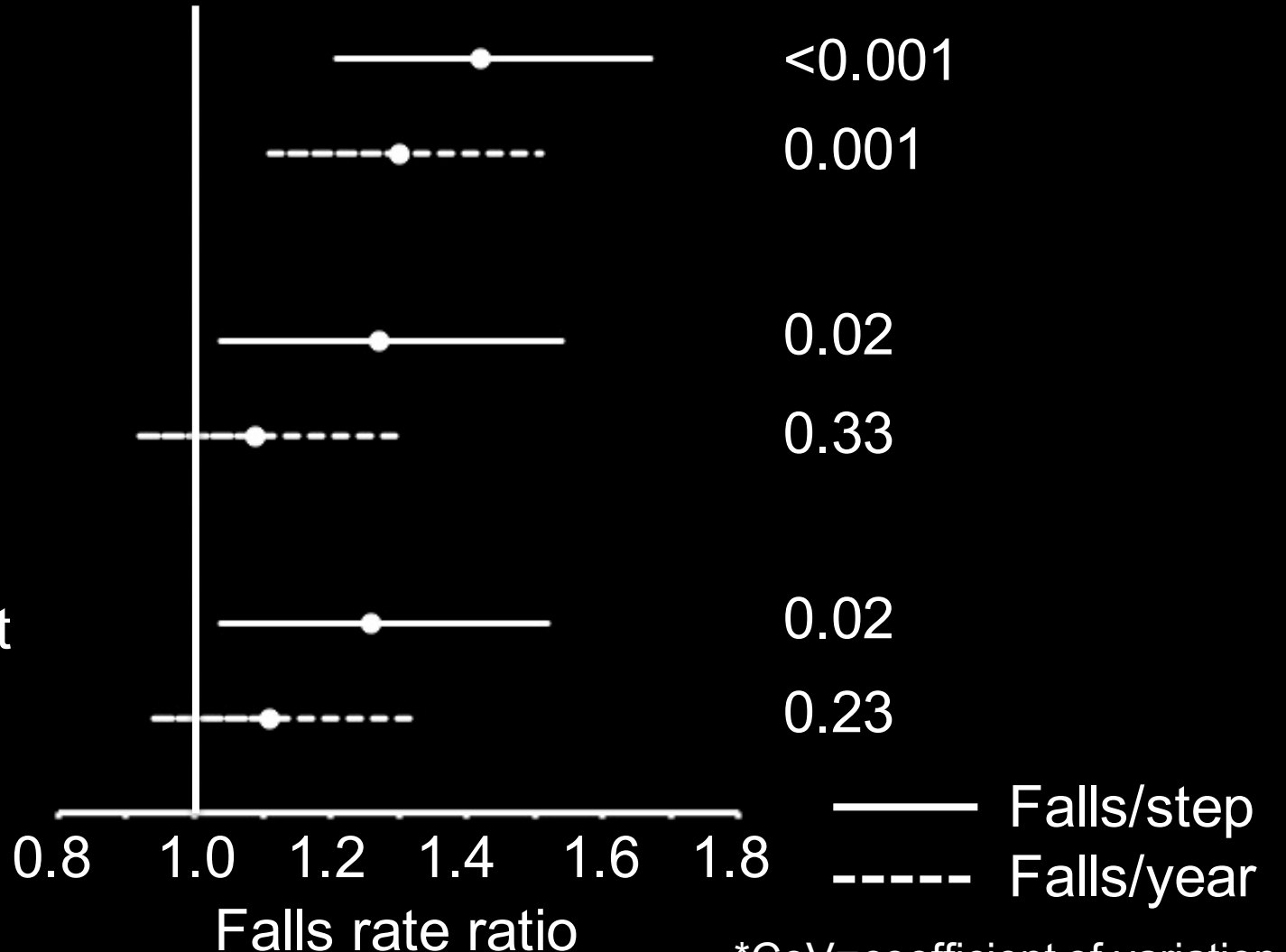
0.02

0.33

Double support
time CoV

0.02

0.23



*CoV=coefficient of variation

Take-home points

Loss of inferior peripheral vision is associated with the increased fall rates in individuals with glaucoma

Several gait parameters are associated with the increased fall rates in individuals with glaucoma

Falls prevention interventions could be directed at gait modification

Gait parameters may serve as an early marker to gauge success of falls prevention efforts

Questions and Answers

Thank you for listening!