

# Cannabis and Health

Module 15: Cannabis and Aging

Lecture 1: Healthy Aging

# An Aging Population

- People are living longer than ever before
- Oldest old (those 85 and over) are the fastest growing segment of the U.S. population.
- Per NIA:
  - “[The] challenge for the 21st century will be to make these added years as healthy and productive as possible”



# Why the challenge?

- With more people living to older ages come diseases and disabilities
  - Metabolic syndrome, osteoporosis, cardiovascular disease, Alzheimer's, etc.
  - Balance problems, falling
- Even in the absence of physical disease, quality of life can be compromised
  - Age-related impairments in cognition (e.g., executive function)
  - Alterations in social, emotional, and economic functioning

# The Good News...

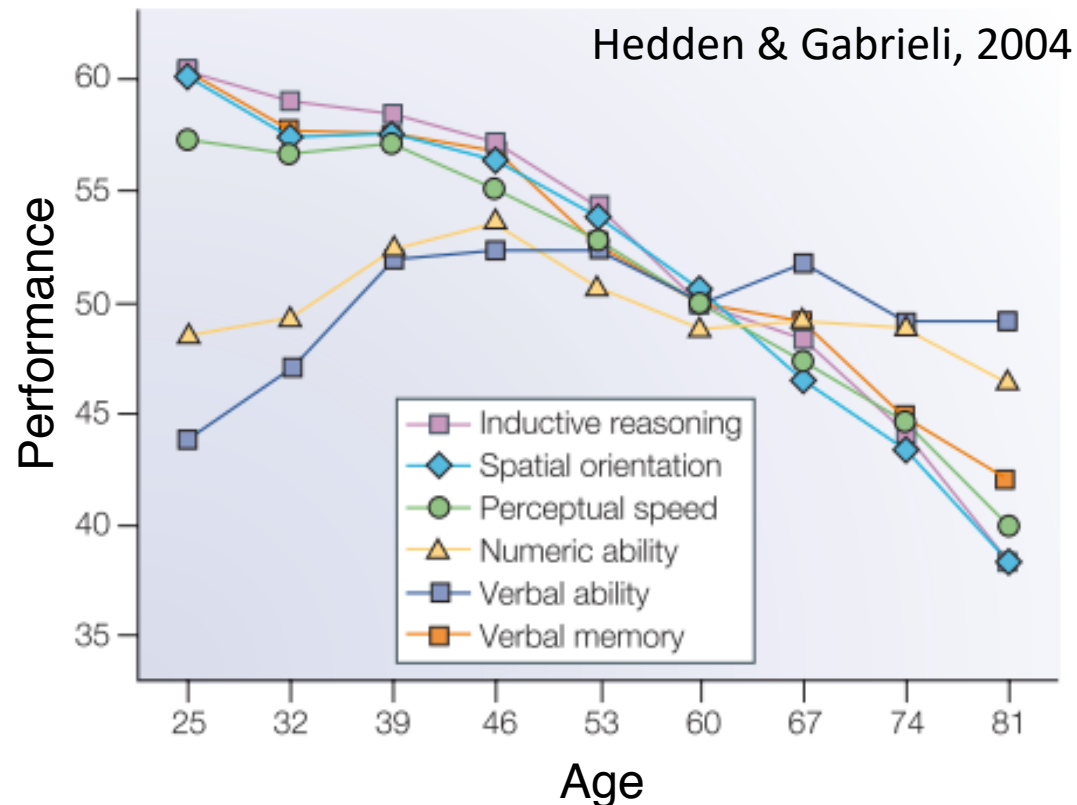
**With increasing age comes many preserved,  
and improved, abilities**

- Wisdom
- Verbal ability / fluency
- Social functioning
- Emotional well-being

# The Not-So-Good News...

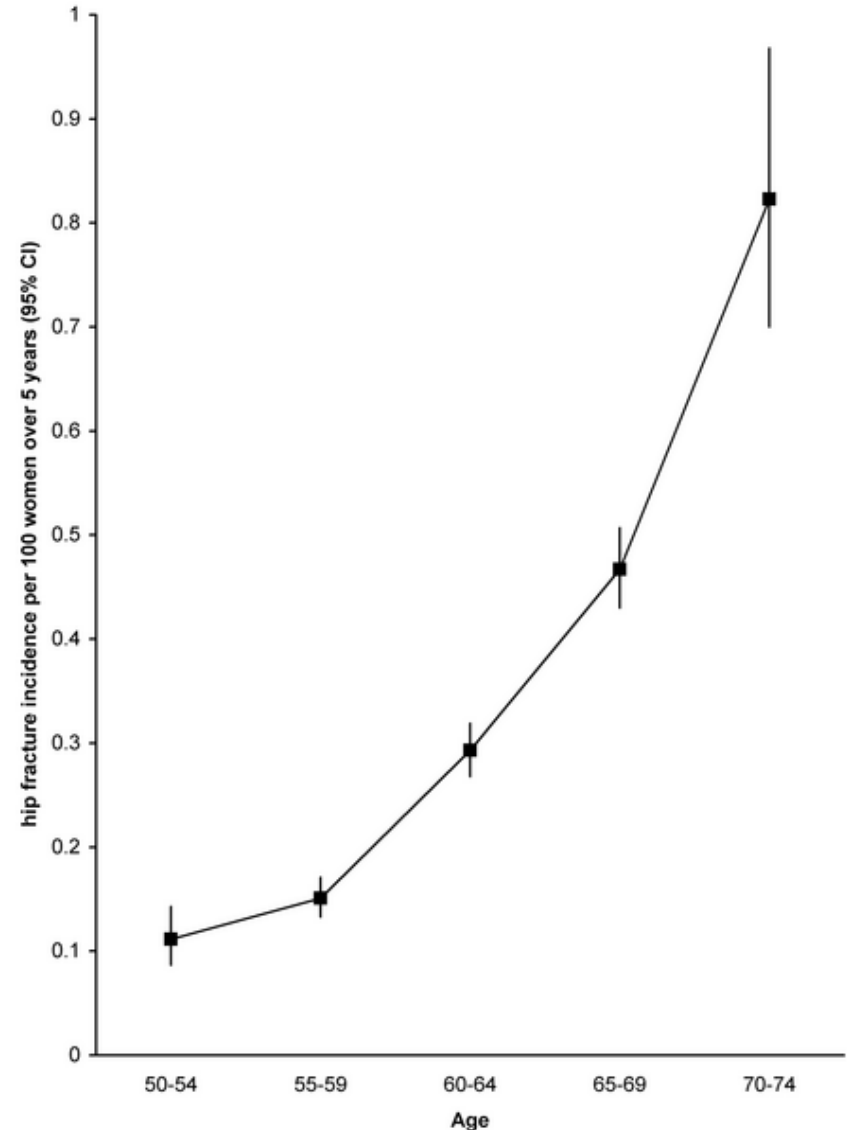
**Certain cognitive tasks may become more challenging**

- Difficulties with memory
- Difficulties with “Executive Functions”
  - Reasoning, Planning, Multi-tasking, Maintaining attention in the face of distraction



# More Not-So-Good News...

- Muscle atrophy increases (sarcopenia)
- Bone density decreases
- For example, risk of hip fracture increases dramatically with age
- Changes in muscle and bone are huge factor in loss of independence



Banks E, Reeves GK, Beral V, Balkwill A, Liu B, et al. (2009) Hip Fracture Incidence in Relation to Age, Menopausal Status, and Age at Menopause: Prospective Analysis. PLOS Medicine 6(11): e1000181. <https://doi.org/10.1371/journal.pmed.1000181>  
<https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000181>

# Healthy Aging

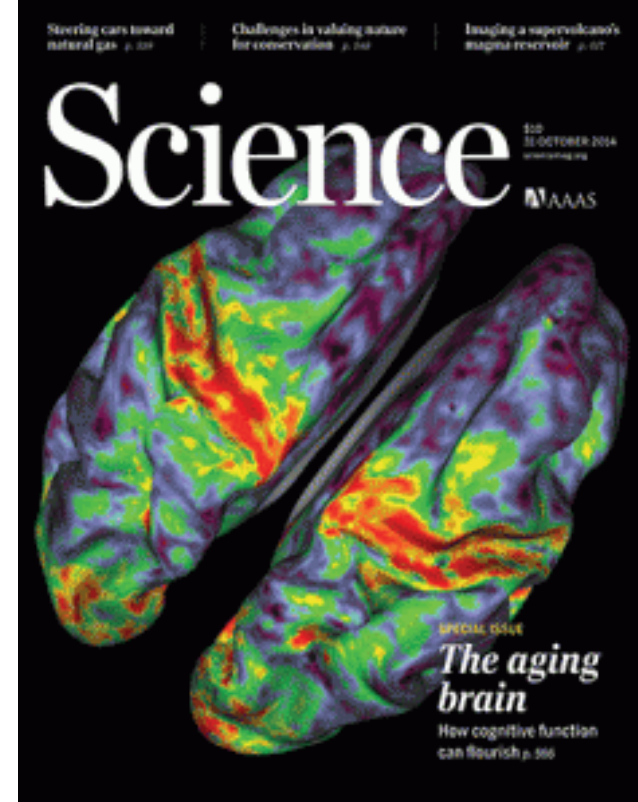
- To stay healthy...
  - Do things that are challenging (learn a language)
  - Cross-word puzzles, sudoku
  - Get involved in the community (volunteering) but most important...
- **Get or Stay physically active!!!**
  - Aerobic activity, Strength training, Yoga, Tai chi

PUBLIC HEALTH

## 10 Minutes of Daily Exercise Could Prevent Disability in Old Age, Study Finds

By Sam Nickerson | Apr. 05, 2019 09:35AM EST

HEALTH + WELLNESS



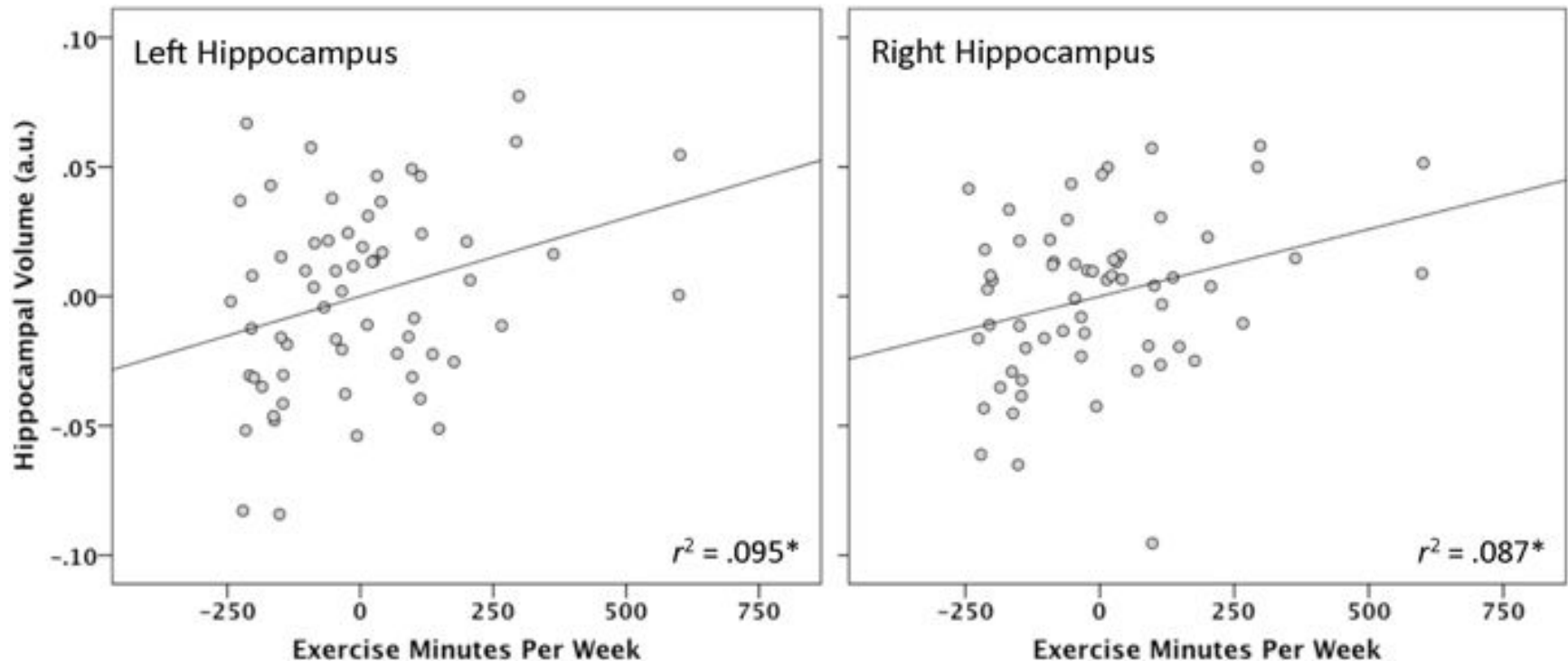
# Why Physical Activity?

- Physical activity in older adults results in...
  - Psychological benefits
  - Reduced depression, increased satisfaction with life
- Physiological benefits
  - Improved insulin action and cardiac function
  - Decreased inflammation and blood pressure
- Neurocognitive benefits (Kramer & Erikson, 2007; Kramer & Wills, 2002)
  - Increased cerebral blood flow, increased gray and white matter volume
  - Improved working memory



# Physical Activity and Cognitive Function

- Numerous meta-analyses detailing the benefits of exercise for the aging brain

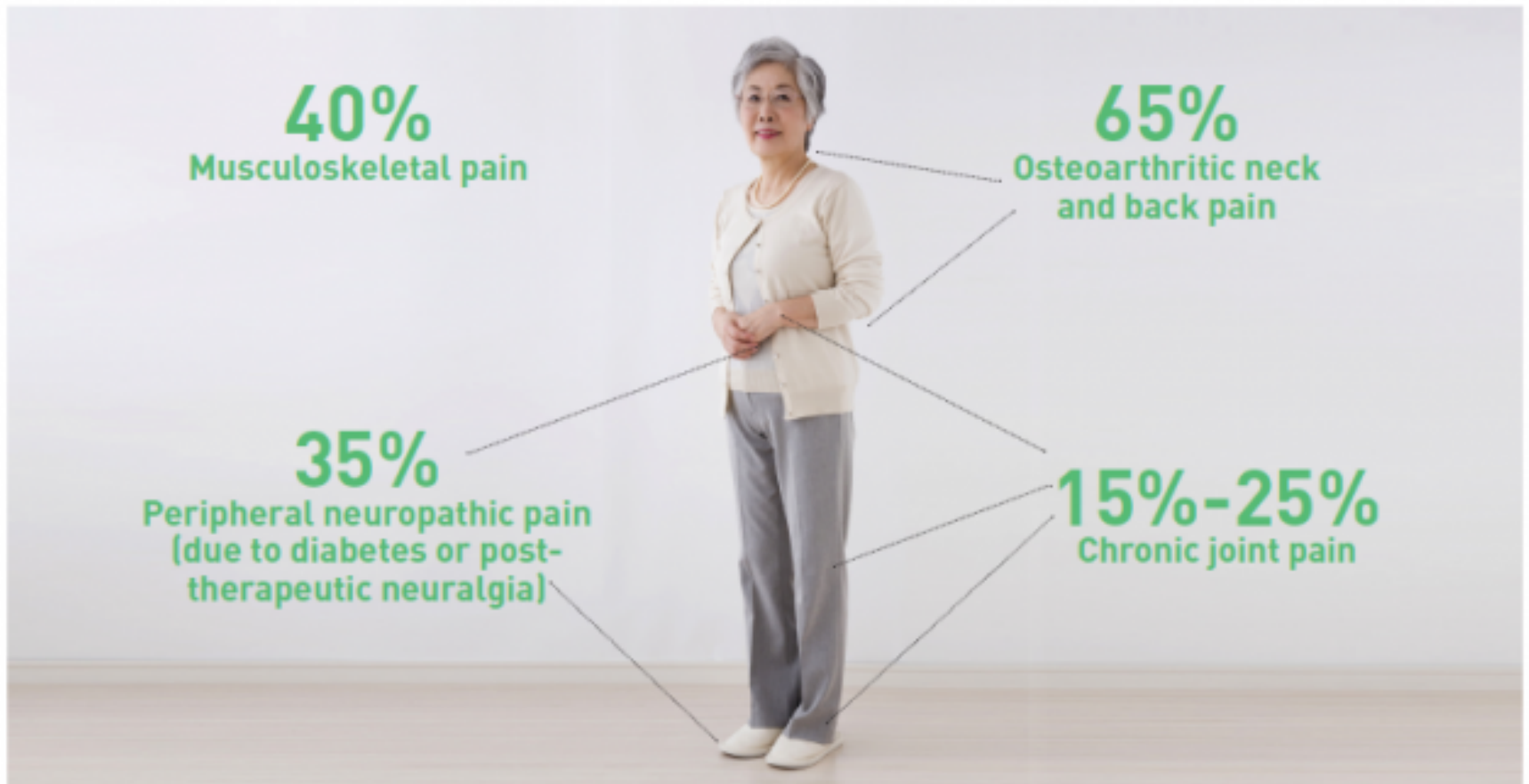


# The problem with exercise and aging

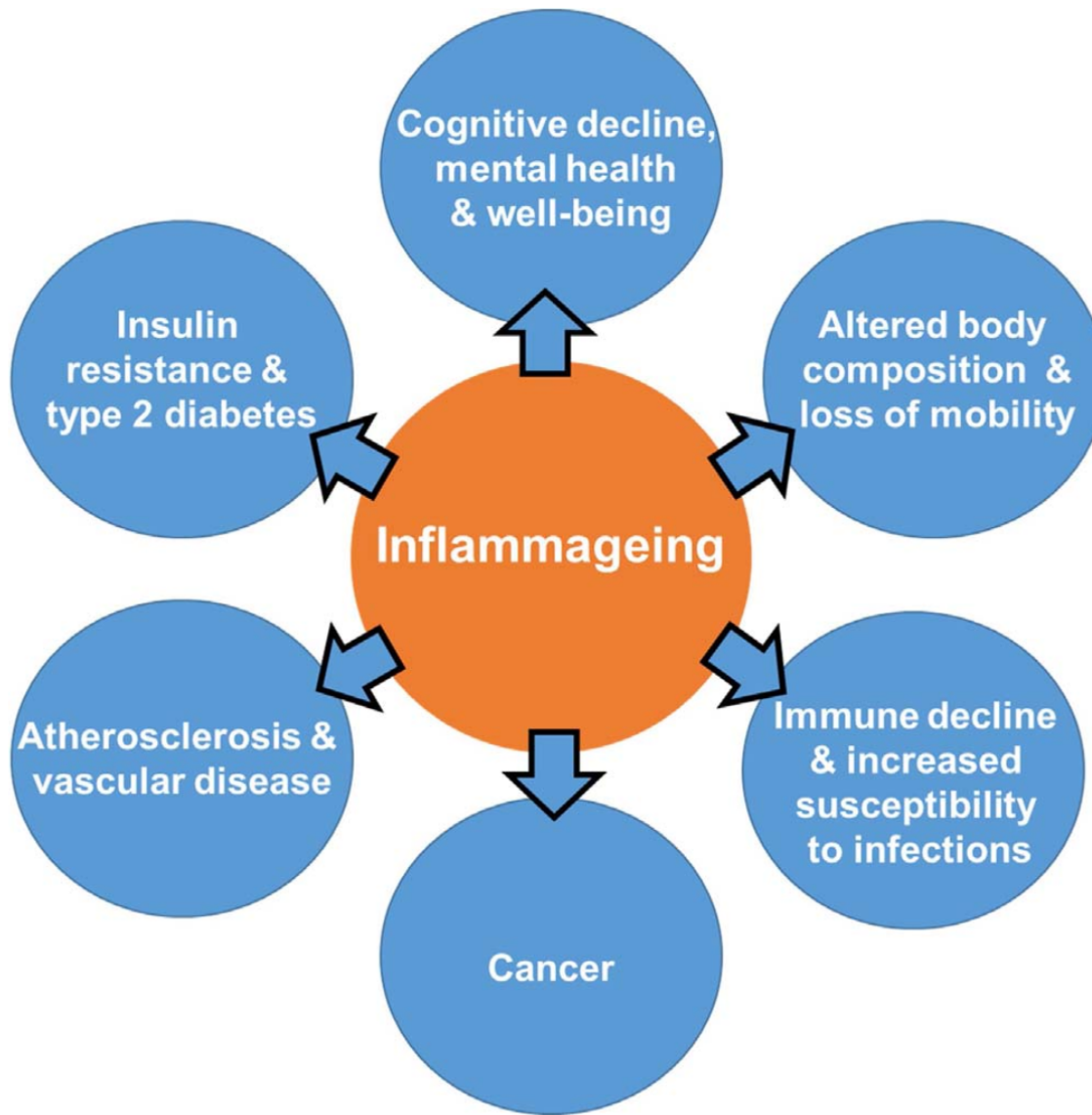
- No doubt that exercise and staying active and engaged is important for physical and mental health as we age
  - Though its important at EVERY age, for older adults physical and mental health impact independence and quality of life
- What else do we know about aging?
  - IT HURTS!!!
  - Sleep is compromised
    - Though some of this may be related to medication or physical ailments
  - Risk for disease (e.g., cancer, Type II diabetes, cardiovascular disease) increases

# Aging and Pain

**Table 1. Breakdown of Pain Types Within the Older Population**



Source: Denard PJ, Holton KF, Miller J, et al. Back pain, neurogenic symptoms, and physical function in relation to spondylolisthesis among elderly men. *Spine J.* 2010;10(10):865-873.



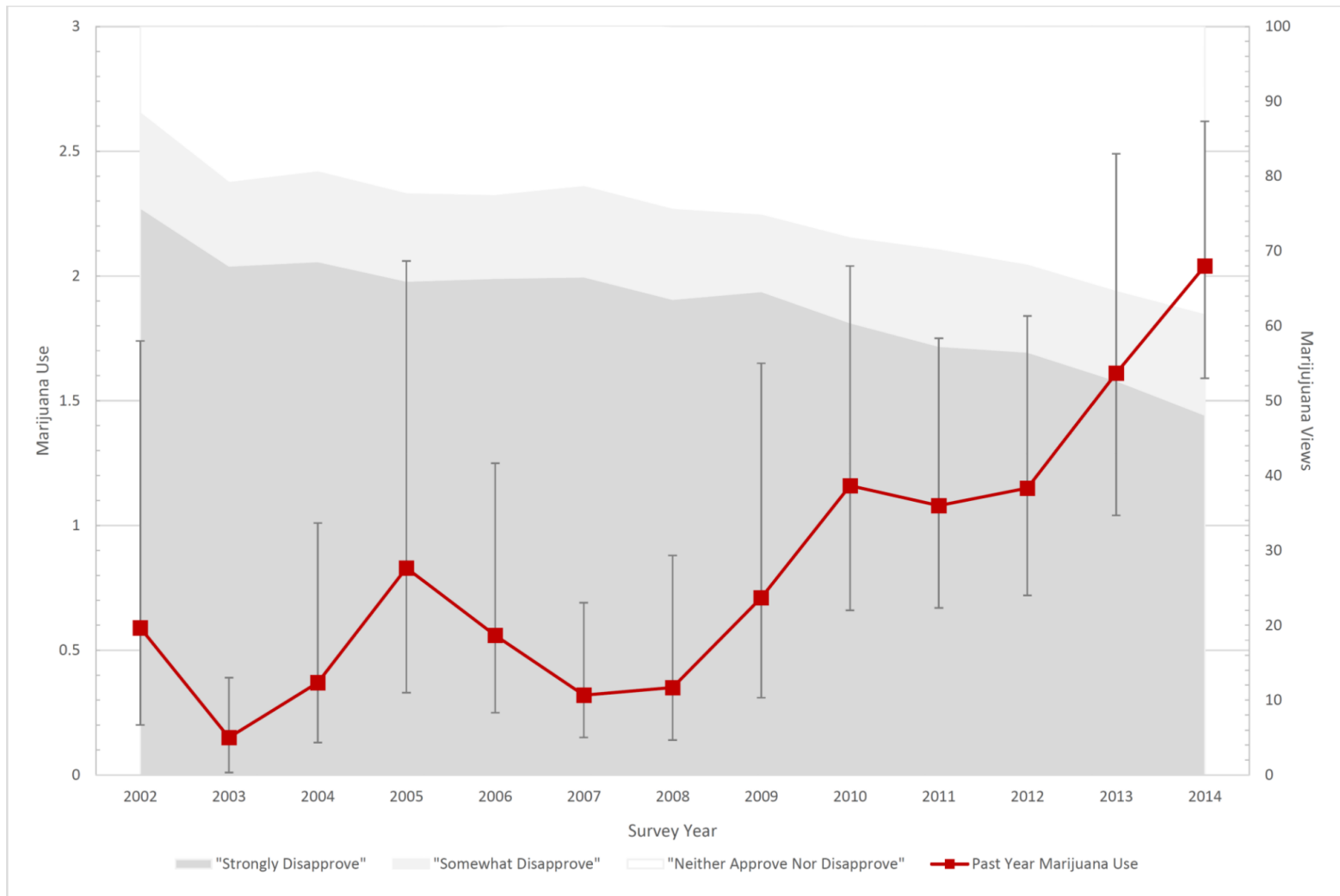
- Most of the things that “go wrong” as we age are the direct or indirect result of inflammageing
- Aging is often characterized by chronic inflammatory state

Fig. 2. Central role of inflammageing in chronic conditions of ageing.

# Putting it all together

- Aging is characterized by chronic inflammatory state
- In addition to its numerous other benefits, exercise is also anti-inflammatory over the long term
- But the problems that characterize aging make it difficult to exercise
  - Musculoskeletal and joint pain
  - Muscle atrophy
  - Sleep disturbance

# Cannabis Use in Older Adults



**Figure 2.**

Prevalence and 95% Confidence Intervals for Past Year Marijuana Use and Disapproval among Adults Ages 65 and Older in the United States between 2002 and 2014 based on Data from the National Survey on Drug Use and Health

# Summary

- We are living to older ages than ever before
- The challenge is to make sure that we are adding QUALITY of life in addition to QUANTITY of life
  - Inflammaging and its associated conditions (cognitive decline, disease, pain) make it difficult to do the things that would help us to stay healthy
- Older adults may be turning to cannabis as a way to feel better and get healthier
  - But why would cannabis help?
  - Is it working?