

Psychosocial Determinants of Healthy Aging

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OUTLINE

- **Social Determinants of Health**
- **Social Isolation and Loneliness**
- **Wisdom**
- **Addressing Social Determinants in Healthcare**

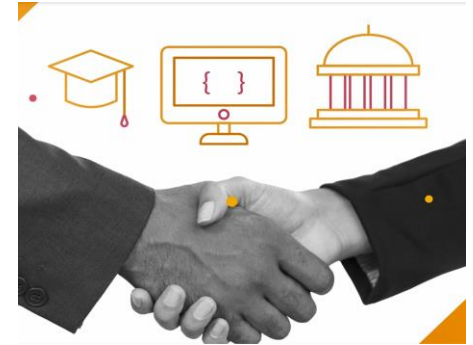
What are Social Determinants of Health (SDoH)



The conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks (and suggest protection/prevention strategies)

Social Determinants of Health (CDC/WHO)

- Early childhood development
- Education, job opportunities, income
- Social inclusion, Racial & other discrimination
- Safe housing, transportation, neighborhoods
- Polluted air and water
- Access to nutritious foods & physical activity ops
- Access to decent-quality affordable health services

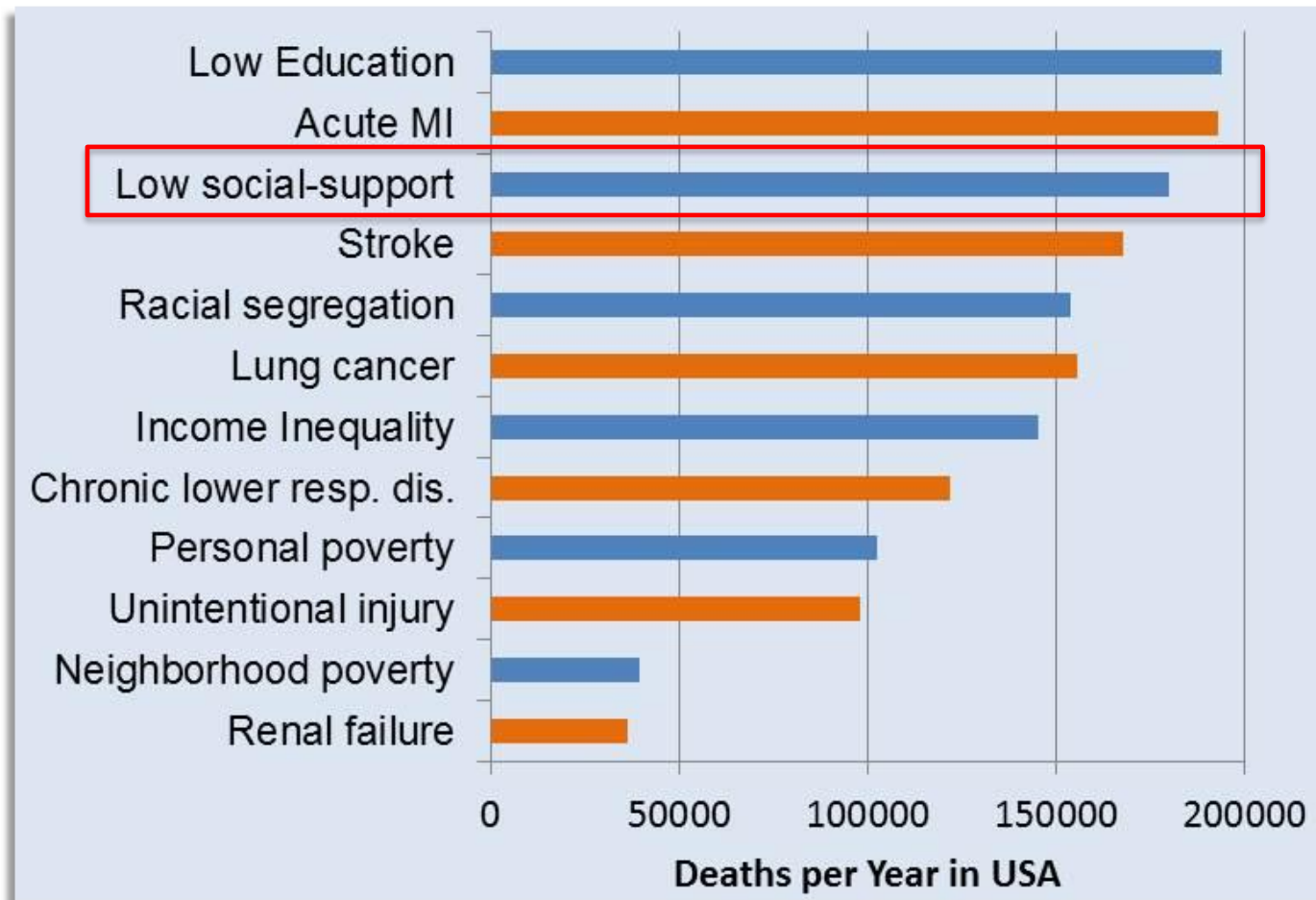


Missing Social Determinants of Health

- Social connections: Number and Quality
- Use of social media
- Stigmas against aging, mental illnesses, & immigration
- Positive psychosocial factors: Community-level Wisdom, Compassion, Resilience



Deaths Attributable to Social Factors Compared to “Causes” of Death



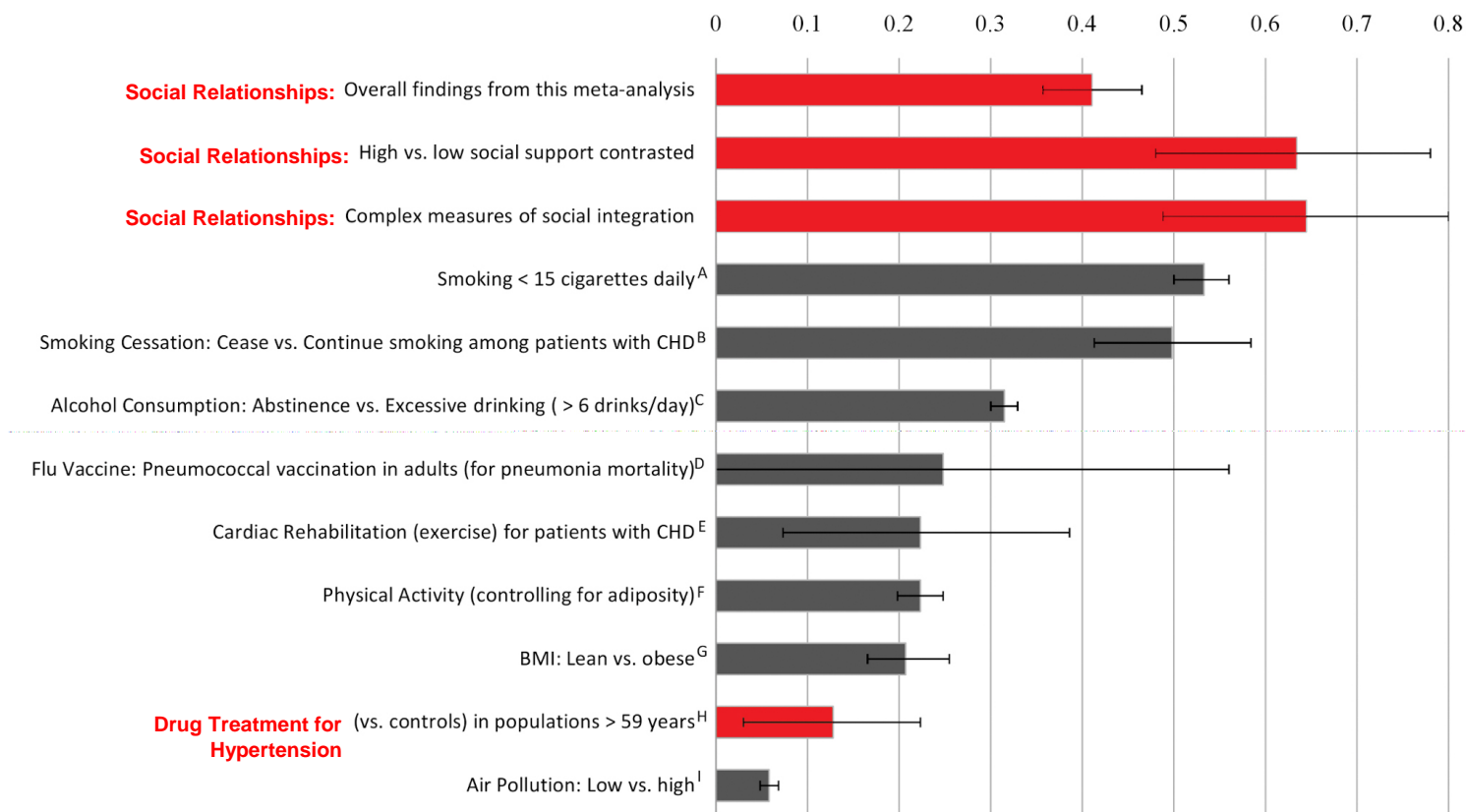
Mailman School of Public Health
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Center for Healthy Aging

Data from:

Galea, S. et al. *Am J Public Health* 2011; 101: 1456-1465
Minino, A. et al. *Natl Vital Stat Rep.* 2002; 50: 1-120.

Social Determinants of Health: Odds of Reduced Mortality



Holt-Lunstad J, et al., PLOS Medicine 7(7): e1000316, 2010.
<https://doi.org/10.1371/journal.pmed.1000316>

Social Connections are Very Special

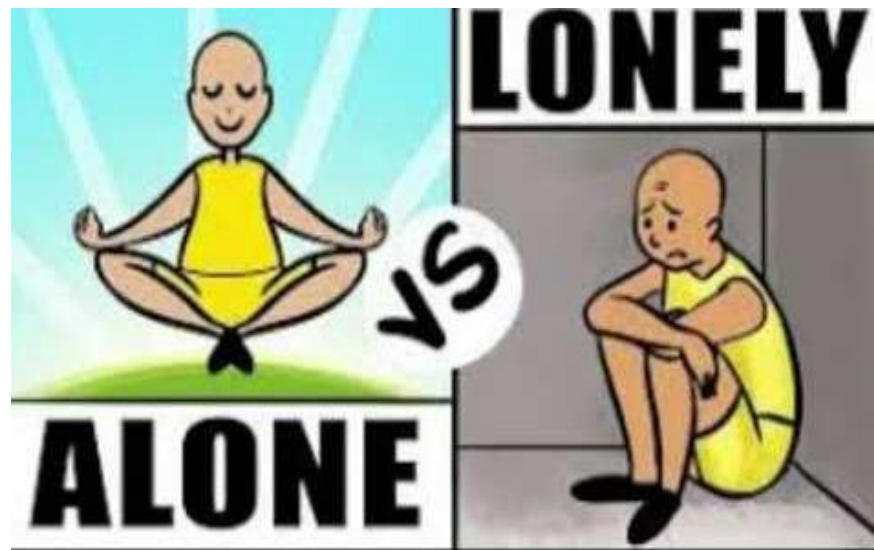


Humans need others to survive. Social connection is crucial to human development, health, and survival. The evidence supporting this contention is unequivocal. There are perhaps no other factors that can have such a large impact on both length and quality of life, from the cradle to the grave.

--- Holt-Lunstad, JM, et al., Am Psychol. 2017. 72: 517–530

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Loneliness vs. Social Isolation

- **Loneliness** = Subjective distress caused by a feeling of being alone (perceived isolation)
- **Social Isolation** = Inadequacy of social relationships (objective isolation)

(Cacioppo and Cacioppo, 2018)

LONELINESS



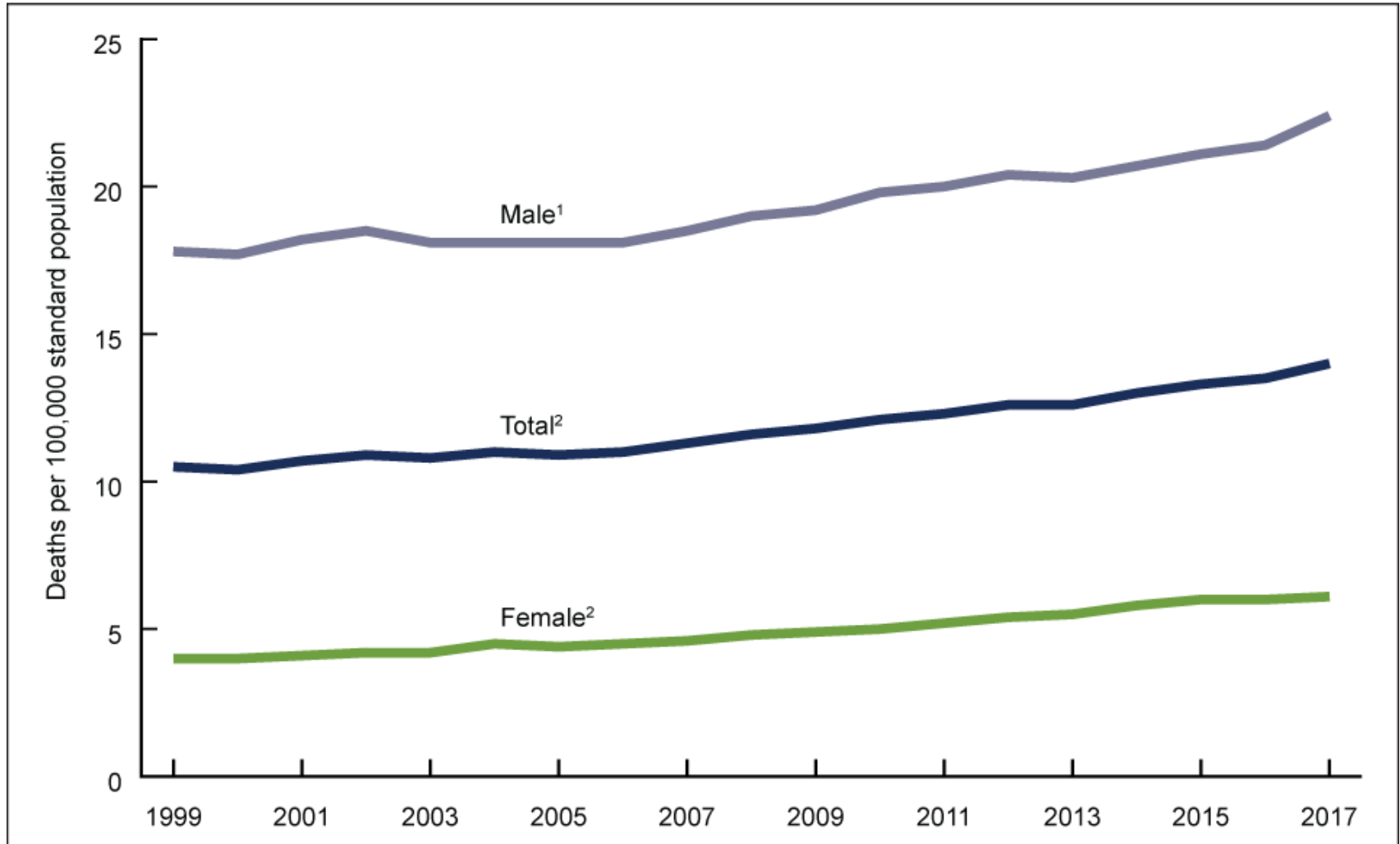
What Has Changed Since 1800?

- Growth of the consumer economy
- Popularity of evolutionary biology (Darwin's hypothesis)
- Declining influence of religion
- Result: Individualism replacing traditional, paternalistic visions of a society in which everyone had a place

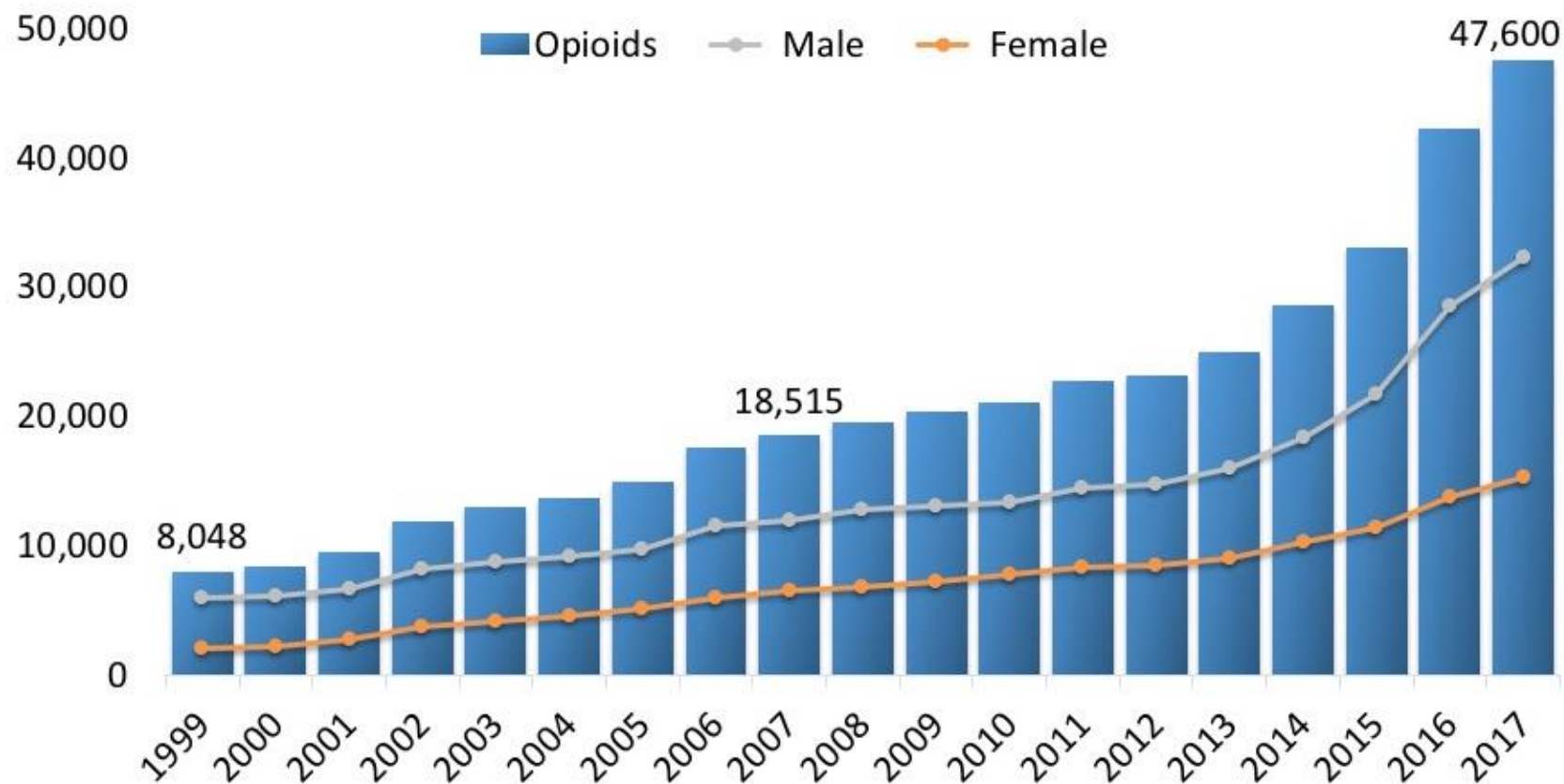
--- Fay Bound Alberti, 2018



US Suicide Rates Increased by 33% in 2 Decades (1999 – 2017) (CDC Statistics)

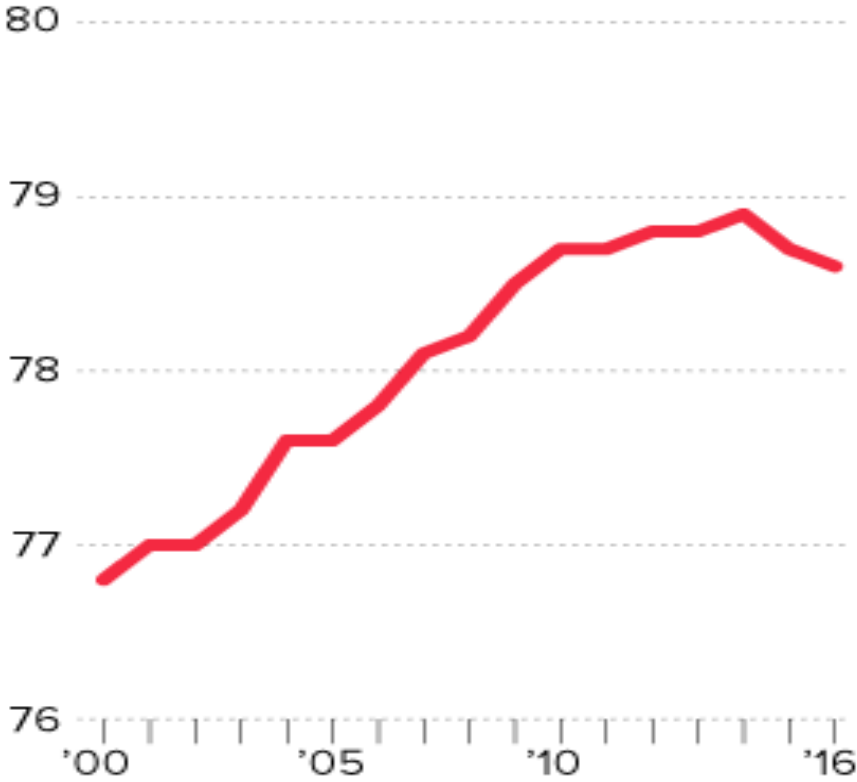


Mortality from Opioid Abuse (1999-2017)



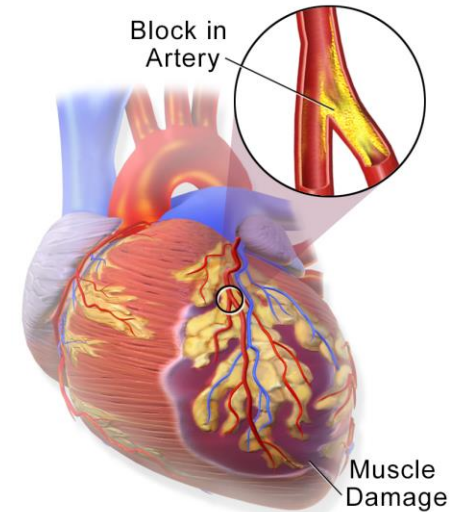
Source: : Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018

Recent Pre-Covid Decline in Average US Lifespan

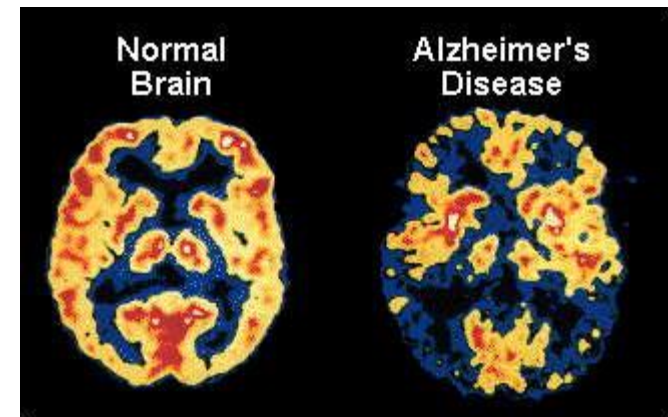


Loneliness Increases the Risk for Major Diseases

- Heart disease
- Diabetes
- Obesity
- Major depression with suicide
- Opioid and alcohol use
- Anxiety disorders
- Alzheimer's disease and other dementias



Heart Attack



Genetic Basis of Loneliness



GWAS analyses for loneliness in UK Biobank study (N=452,302)

- Twin- and family-based studies found that loneliness is a modestly (37%-55%) heritable trait with a highly polygenic architecture
- Genetic predisposition toward loneliness predicts cardiovascular, metabolic, and psychiatric disorders (depression, dementias)

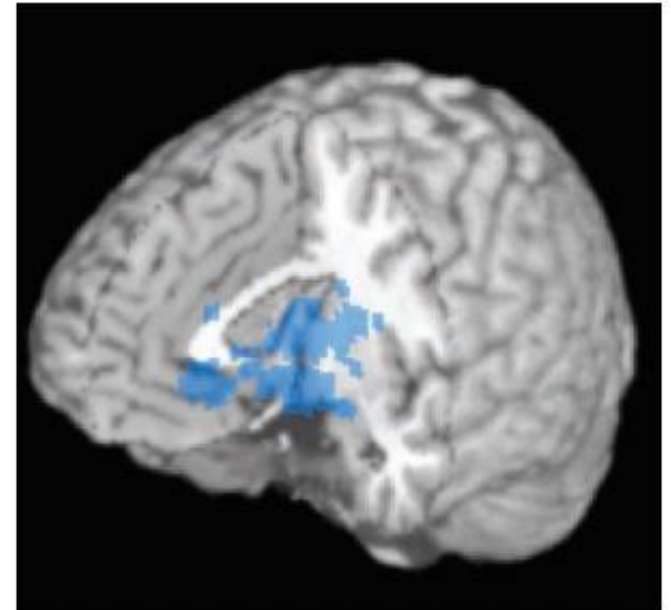
(Day, FR, et al. Nat Commun. 9:2457, 2018;

Gao, J, et al. Neuropsychopharmacology. 2017;42:811-8218)

Abdellaoui, A, et al., bioRxiv, Nov. 14, 2018)

Putative Biological Mechanisms underlying Loneliness

- Involvement of prefrontal cortex and ventral striatum
- HPA axis dysregulation
- Inflammation and immune dysregulation



Unrewarding. Lonely people take less enjoyment from social interactions and exhibit less activity (blue) in the ventral striatum.

Risk Factors for Loneliness

(Lee, EE, et al., Int'l Psychogeriatrics, 2019)



- **Age: 20s, 50s, 80s**
- **Being single or having stressful marital relationship**
- **Serious mental illnesses**
- **Physical illnesses**
- **Chronic work or social stress**
- **Socioeconomically disadvantaged groups**

Social Media Use & Perceived Social Isolation Among Young U.S. Adults



- Data from a nationally representative sample of 1,787 U.S. adults aged 19–32 years
- Social Media Use Time: Those in the highest quartile had a 2-folds greater Perceived Social Isolation than those in the lowest quartile
- Social Media Use Frequency: The odds of having greater Perceived Social Isolation were 3.4-folds higher for the highest quartile



(Primack, B.A., et al.: Am J Prev Med 53:1–8, 2017)

Loneliness among Older LGBT Adults

- Older LGBT adults vulnerable to loneliness: more likely to be single, live alone, and have lower levels of contact with relatives
- Less likely to engage with local services: ~80% of older LGBT individuals reportedly do not trust professionals to understand their culture or lifestyle

(Alden, S and Wigfield, A (2018) Reducing social isolation amongst older LGBT people: A case study of the Sage project)

Loneliness & Ethnic Diversity in Middle Schools

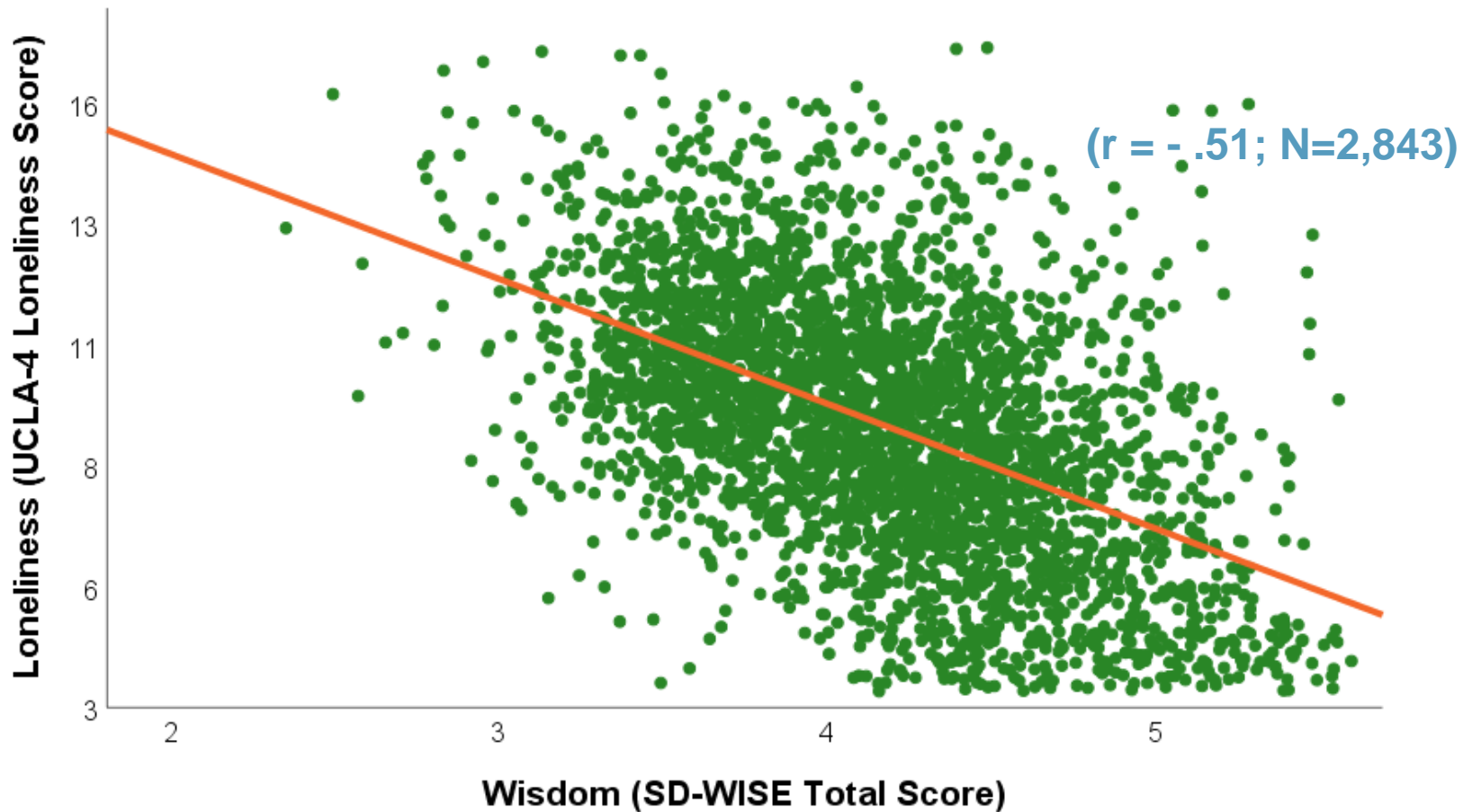
- 11 public middle schools (>70 sixth-grade classrooms) with varied ethnic diversity
 - Higher classroom diversity was associated with feelings of safety and social satisfaction
 - African American (n=5,511) and Latino (n=5,910) students felt safer in school, were less harassed by peers, felt less lonely, and had higher self-worth in more ethnically diverse classrooms, even on controlling for classroom differences in academic engagement
- (Juvonen, J, et al.: Psychological Science, 17:393-400, 2006)



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Loneliness vs. Wisdom: mTurk: Amazon-based Survey (Nguyen, et al., J Clin Psychiatry, 2020)



Wisdom: A Multi-component Trait



San Diego Wisdom Scale (SD-WISE)

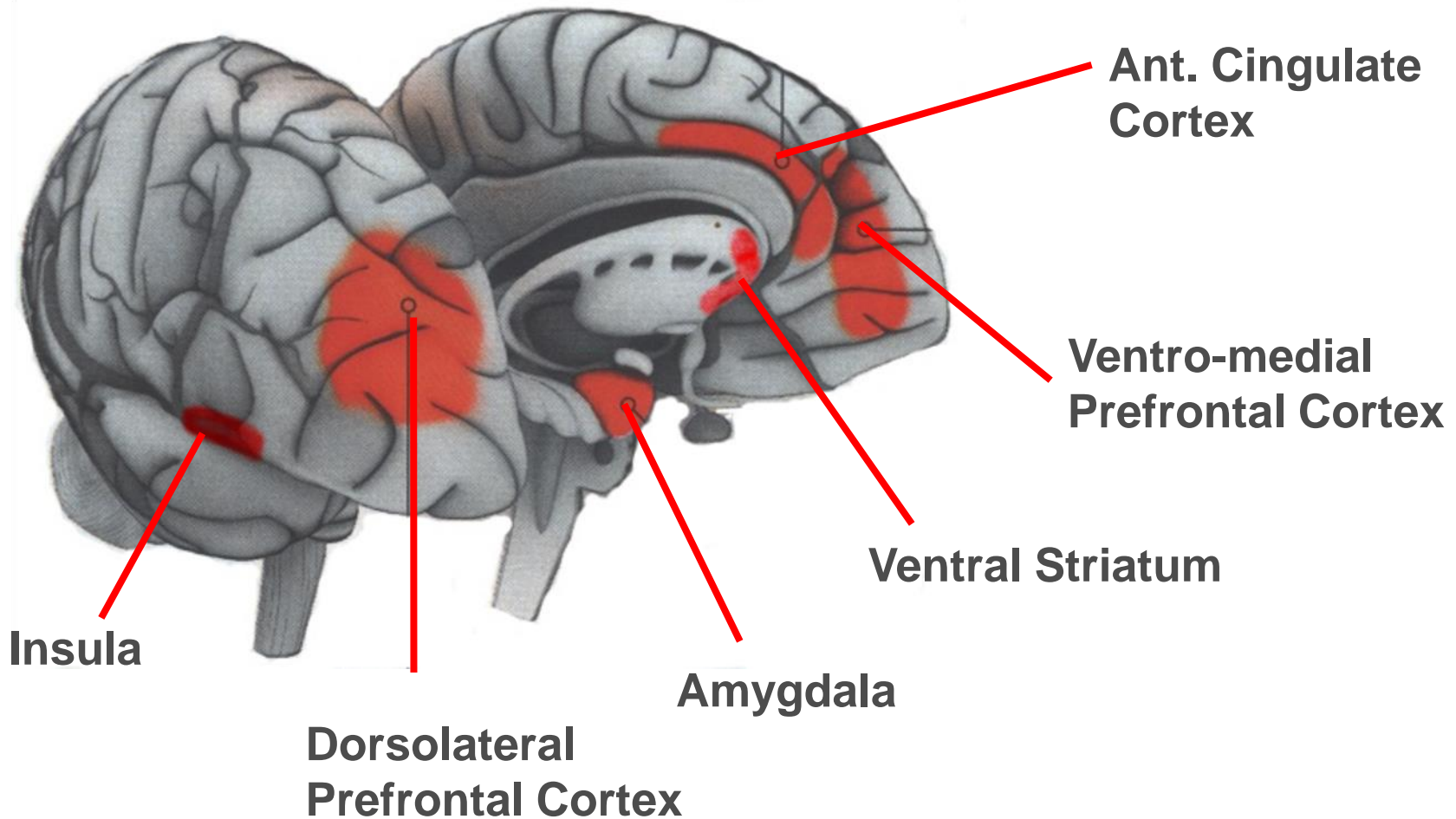


- Total 28 items, each to be rated on a 1-5 scale (“strongly disagree” to “strongly agree”)
- Good to excellent psychometric properties
- Examples of items:
 - “It is important that I understand the reasons for my actions.”
 - “I have trouble thinking clearly when I am upset.”

(Thomas ML, et al., J Psychiatric Research, 108:40-47, 2019;
Jeste DV, et al., JPR, 2020)

Brain Regions Involved in Wisdom

(Meeks & Jeste, Arch Gen Psych 2009)



Abilities that Tend to be Better in Older Adults than in Youth



- Emotional regulation
- Positivity: Favoring positive emotions & memory
- Empathy and Compassion
- Self-reflection
- Experience-based decision making

(Carstensen et al., 2004; Mather et al., 2004, Birditt et al., 2005, Kennedy et al., 2004, Brassens et al., 2012; Meeks & Jeste, 2009; Bangen, et al., 2013; Helmuth et al., 2003; Jeste et al., 2010; Grossman, et al., 2010; Worthy, et al., 2011)

Prevalence of Psychopathology during Covid-19 Pandemic



Lower prevalence of psychopathology & higher resilience in older adults (Vahia, Jeste, Reynolds, JAMA, 2020)

Survey of 945 Americans ages 18-76 years: Aging was associated with higher frequency and intensity of positive emotions, and lower frequency and intensity of negative emotions (Carstensen, et al., Psych Sci, 2020)

Survey of 5,186 US adults: Prevalence of psychopathology was 15% in adults over age 65, and 75% in adults aged 18-24 years (Czeisler, et al., JAMA Network Open, 2021)

Loneliness versus Wisdom/Compassion



- Loneliness is associated with worse physical & mental health, and wisdom/compassion with better physical & mental health (many studies)
- Qualitative study: Compassionate activities reduced loneliness (Morlett Paredes, et al., 2020)
- Strong inverse correlation between loneliness and wisdom/compassion (Lee, et al., 2019; Nguyen, et al., 2020; Jeste, et al., 2020 a & b)

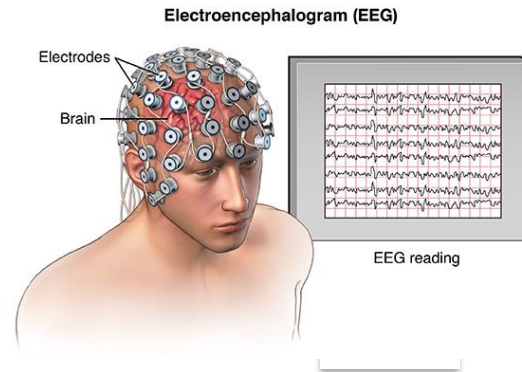
Loneliness vs. Wisdom/Compassion

- Longitudinal study (N=1,261): Baseline wisdom/compassion scores and increases in wisdom/compassion scores during follow-up predicted lower loneliness and better mental well-being scores 7 years later
- Review of Neurobiology: Similar fronto-limbic brain regions involved in loneliness & wisdom



EEG – Loneliness vs. Wisdom

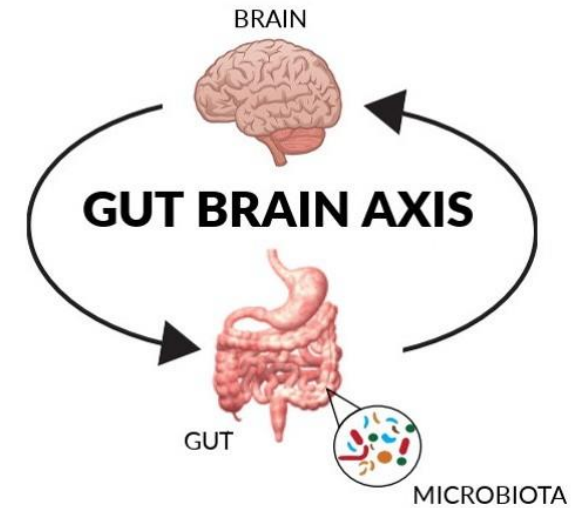
(Grannan G, et al., Cerebral Cortex, 2021)



- Neural Engineering & Translation Labs
- 147 adults, ages 18 to 85
- Temporo-Parietal Junction: Loneliness was associated with greater activity in the presence of angry emotions; Wisdom was associated with greater activity in the presence of happy emotions
- Differential involvement of ventral striatum in loneliness vs. insula in wisdom

Gut Microbiome – Loneliness vs. Wisdom

(Nguyen TT, et al., Front. Psychiatry, 2021)



- Center for Microbiome Innovation – 16S rRNA
- 184 adults (age 28-97 years)
- Alpha and Beta diversity measures of phylogenetic richness were associated with higher levels of compassion, wisdom, and social engagement, and lower level of loneliness

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Interventions to Enhance Wisdom Components

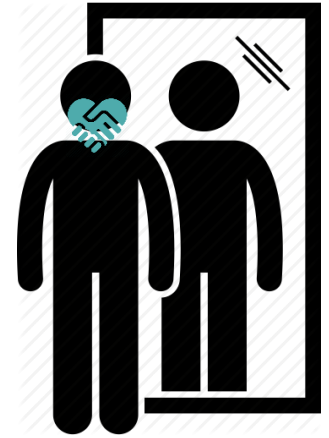
(Lee, et al., JAMA Psychiatry, 2020)



- **57 RCTs to enhance:**
 - Empathy/Compassion/Altruism, Emotional regulation, and Spirituality
- **Participants:** People with mental illnesses, people with physical illnesses, and those from general population
- **47% of studies reported significant enhancement of a wisdom component (moderate to large effect size)**

Strategies for Compassion Toward Others and Toward Self

- Gratitude journal
- Volunteering



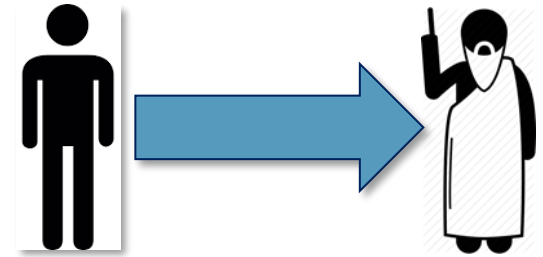
- Sense of common humanity:

“Everyone makes mistakes, and faces serious challenges”

- Self-kindness
- Mindfulness: “I have had similar stresses in the past and survived”


RCT to Enhance Resilience and Wisdom

- 1-month manualized behavioral intervention administered by trained but unlicensed residential staff in 5 retirement communities in 3 states
- Included savoring, engagement in value-based activities, gratitude diary, & “homework”
- Significant improvement in Resilience & Wisdom, and reduction in Subjective stress



(Treichler E, et al., Int’l Psychogeriatrics, 2020)

Individual Level Interventions

-  Social skills
- Social support
- Opportunities for social interactions



(Perissinotto, C., et al. J Am Geriat Soc, 2019)

Practice Pointers



- Don't assume who is or who is not lonely – e.g., a person who doesn't feel lonely may be socially isolated
- Use short, validated screening measures (e.g., 3-item loneliness screen)
- Consider probable cause of loneliness and relevant remedy
- Use local community resources: AARP, Area Agency on Aging

(Perissinotto, C., et al. J Am Geriat Soc, 2019)

Effects of Grandparenting on Behavior Problems in Grandchildren

(Attar-Schwartz, et al., J Family Psychology, 23:67-75, 2009)

- 1,515 secondary school students (age 11-16) in UK
- Greater grandparent involvement was associated with fewer emotional problems, more prosocial behavior, and reduced adjustment difficulties, especially among teenagers from lone-parent and step-parent families

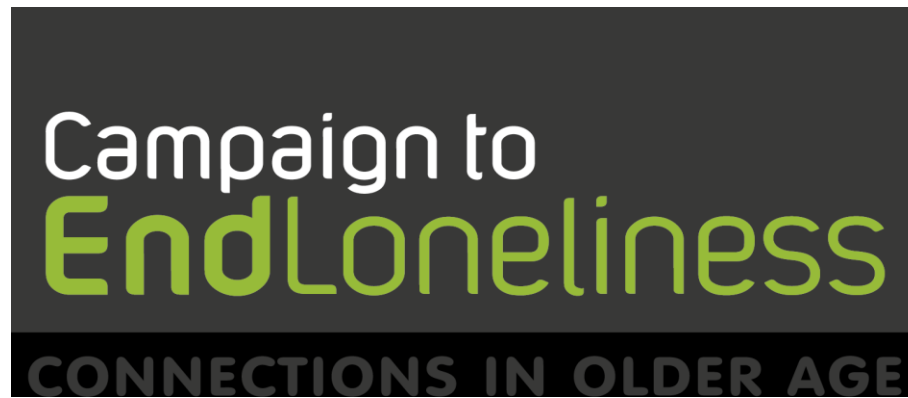


Inter-Generational Activities Benefit both Generations



- Experience Corps: Trained older adult served in public elementary schools
- Outcomes:
 - Improvement in children's grades & happiness
 - Enhancement of seniors' mental & physical health, biomarkers of stress & aging in blood & urine, and hippocampal volume on brain MRI

(Parisi, JM, et al., Educat'l Gerontol, 35, 867-879, 2009)



- High quality childcare
- Social determinant assessment protocols in clinics
- Research on social isolation in marginalized groups
- Addressing isolating consequences of sensory losses
- Creating opportunities for social ties through evidence-based technology-supported interventions

(Lubben, J., et al., Am Acad Soc Work & Soc Welfare, 2015)



WHO Global Network for Age-friendly Cities and Communities



Great Southern Compassionate Communities



Social Determinants of Health: What is Needed?



- **Clinical:** Clinical competency; Practice Guidelines
- **Research:** Bio-psycho-social studies; Mechanisms; Interventions
- **Public Health:** Public education; Prevention
- **Policy:** Advocacy, Healthcare access; Healthcare economics