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GENERAL HOSPITAL

PSYCHIATRY ACADEMY

Loneliness as an important target of treatment: what we know now

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Schizophrenia Education Day

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Disclosures

Neither I nor my spouse/partner has a relevant financial relationship with a commercial interest to disclose.

What is the difference between loneliness and social isolation?

- **Loneliness** = a *perception* of a deficiency in social bonds or intimacy; related to a difference between *desired* and *actual* levels of social connection
- **Social isolation** = an objectively low quantity of social contact

These can be correlated but not always! One can be isolated without being lonely, and lonely without being isolated...

At least four combinations

**Isolated &
Lonely**

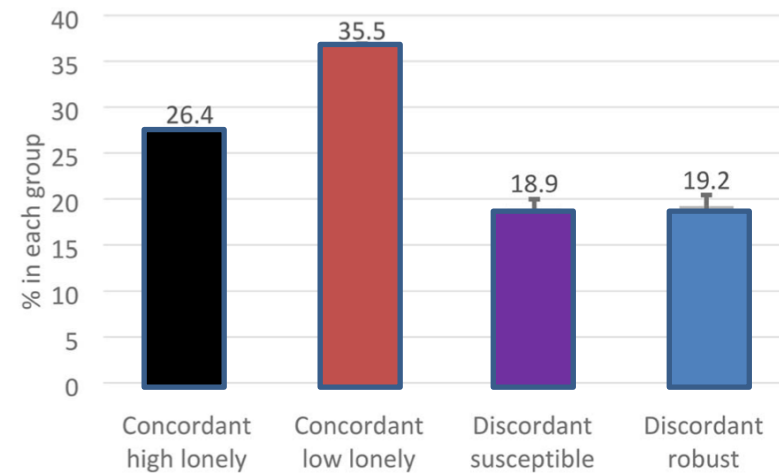
**Isolated & Not
Lonely**
("peaceful
solitude")

**Not Isolated &
Lonely**

("superficially
connected")

**Not Isolated &
Not Lonely**

~7,000 adults ≥ 50 years old



Ward et al, 2021

During the pandemic, lockdowns led to a dramatic, sudden increase in social isolation

- Adults reduced their social contacts by **~75%** during the early pandemic lockdowns (Jarvis et al, 2020)
- During the early pandemic, ~25-30% experienced loneliness in the UK (Li & Wang, 2020), ~43% in the U.S. (Bu et al, 2020)

Higher rates of loneliness in younger people, those with a mental health condition, living alone, or with a lower income

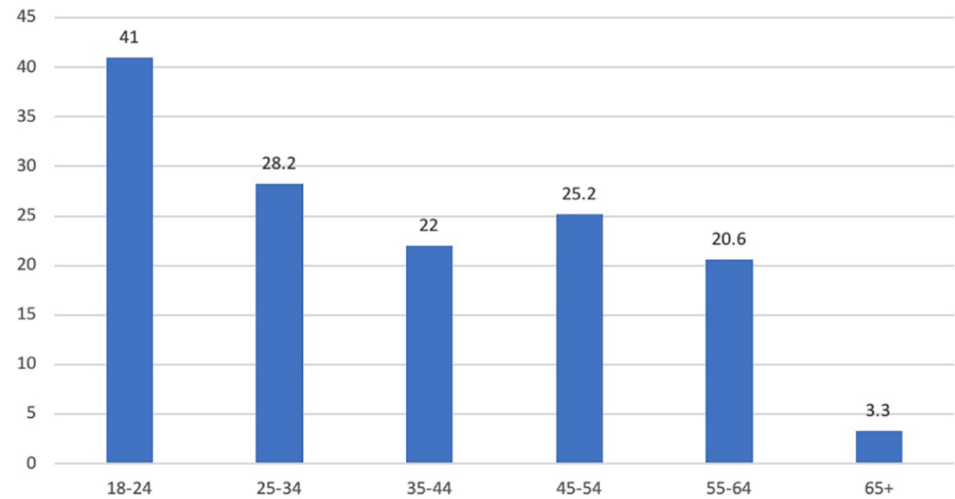


Fig 2. Prevalence of loneliness (%) by age group.

Groarke et al, 2020

Before the pandemic, isolation and loneliness described as “one of the greatest public health challenges of our time”

- More than 1 In 6 adults in the U.S. were lonely before the pandemic (Smith & Lim, 2020)
- 25% of adults in the U.S. currently live alone (10% more than 10 years ago)



In 2016-8, experts across the world described a “loneliness epidemic”

VENTURE • MENTAL HEALTH

Chronic Loneliness Is a Modern-Day Epidemic

BY LAURA ENTIS

June 22, 2016 12:09 PM EDT

The New York Times

Researchers Confront an Epidemic of Loneliness

By Katie Hafner

Sept. 5, 2016

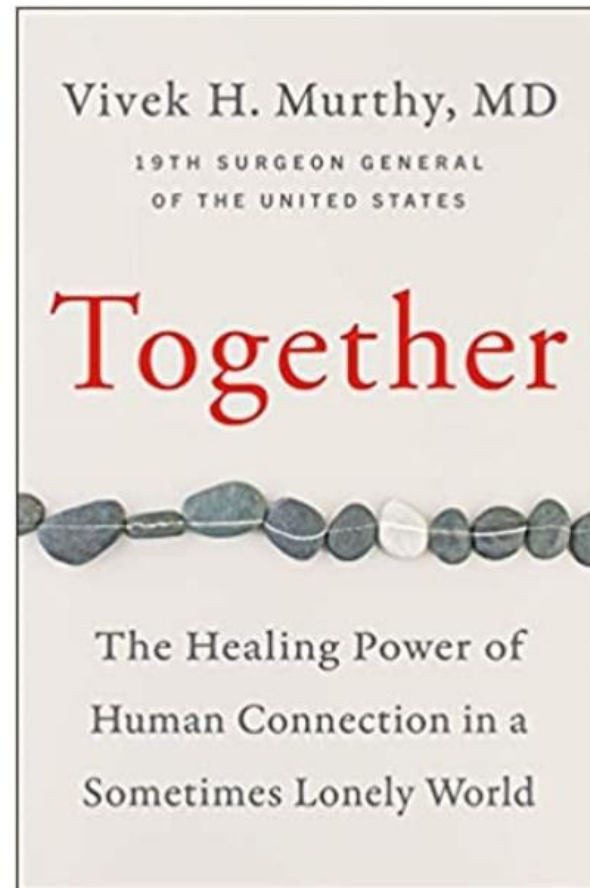
**‘Loneliness kills’: Former surgeon
general sounds alarm on emotional
well-being**



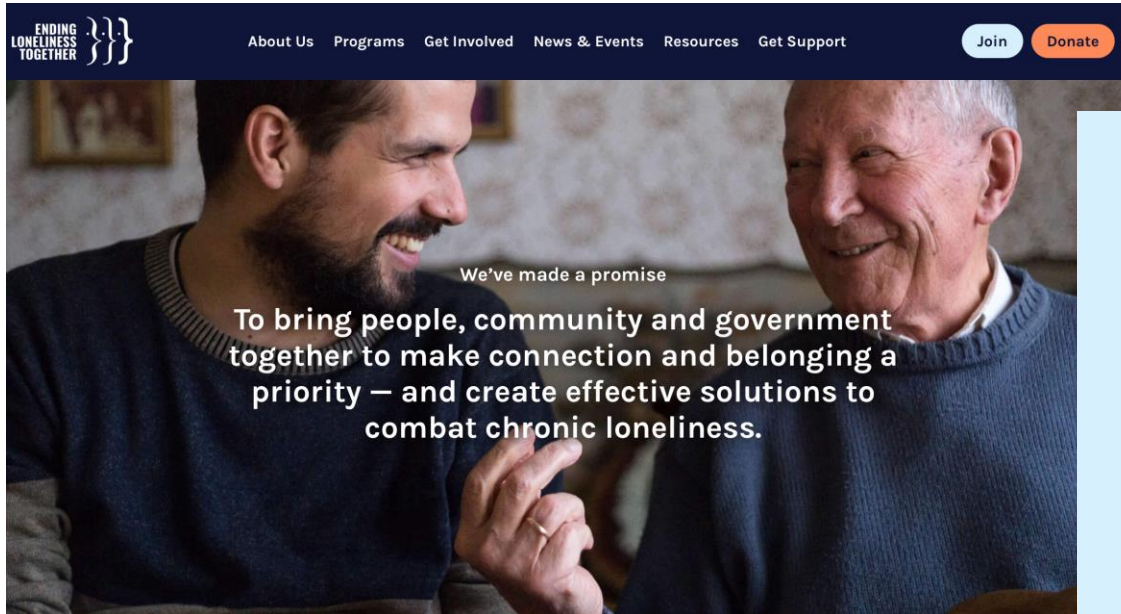
The minister for loneliness will need all
the friends she can get

Tue 23 Jan 2018 07.30
EST

Book on loneliness by our current surgeon general



“Ending Loneliness Together” initiative in Australia



Why is this so important?

Loneliness is associated with elevated risk for mental illnesses (depression, suicide), as well as premature death, heart disease, stroke and Alzheimer’s Disease

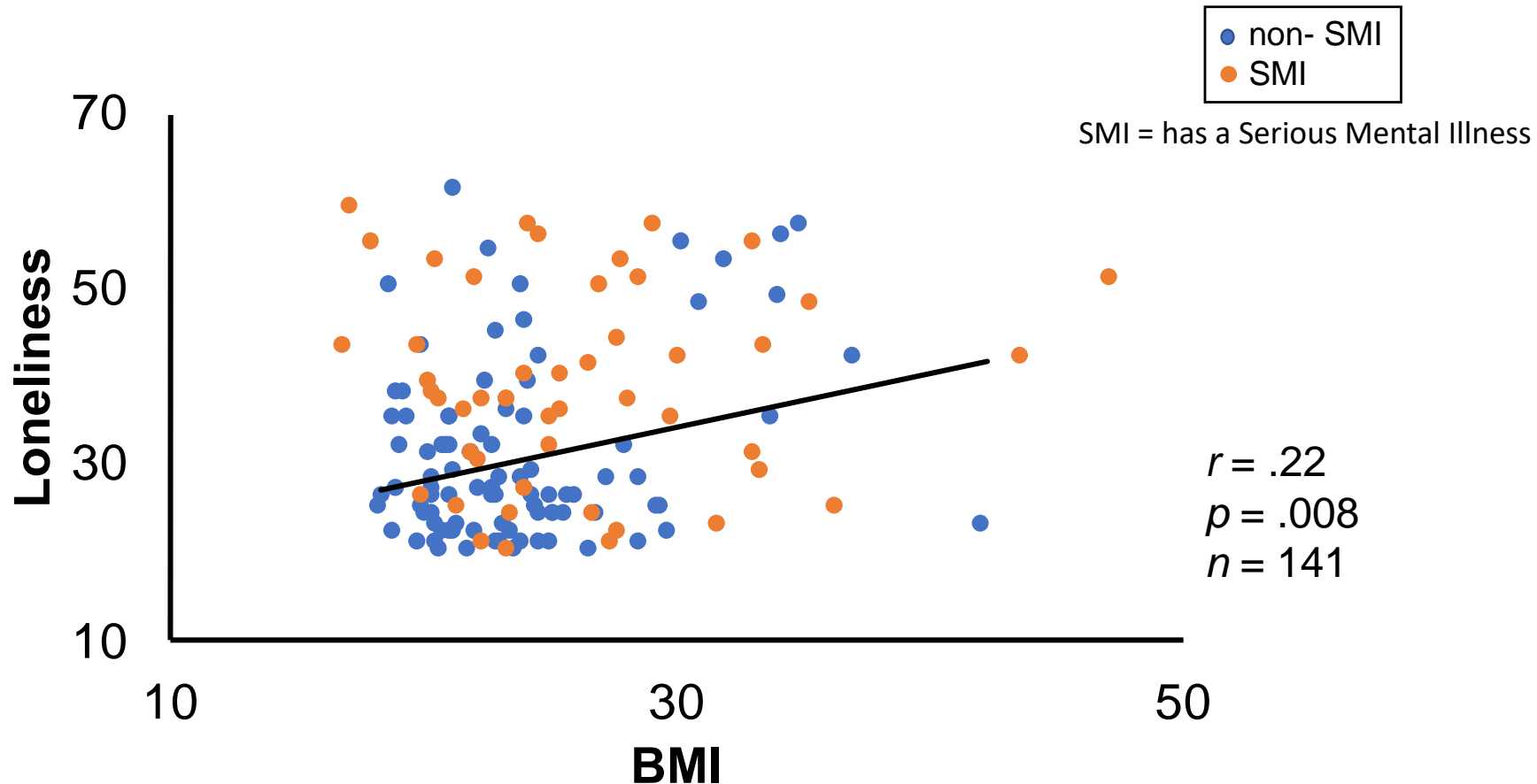
Prolonged/chronic loneliness and social isolation are associated with poor health

- A large meta-analysis (including ~3.5 million people followed for ~7 years) → Isolation, loneliness and living alone each associated with ~ **30% increased likelihood of mortality** (Holt-Lunstadt et al, 2015)
- Another meta-analysis (Valtorta et al, 2016) showed that loneliness or isolation are associated with (after controlling for other cardiac risk factors):
 - 29% increased risk of **heart disease**
 - 32% increased risk of **stroke**
- ***“Loneliness and social isolation can be as damaging to health as smoking 15 cigarettes/day.”***



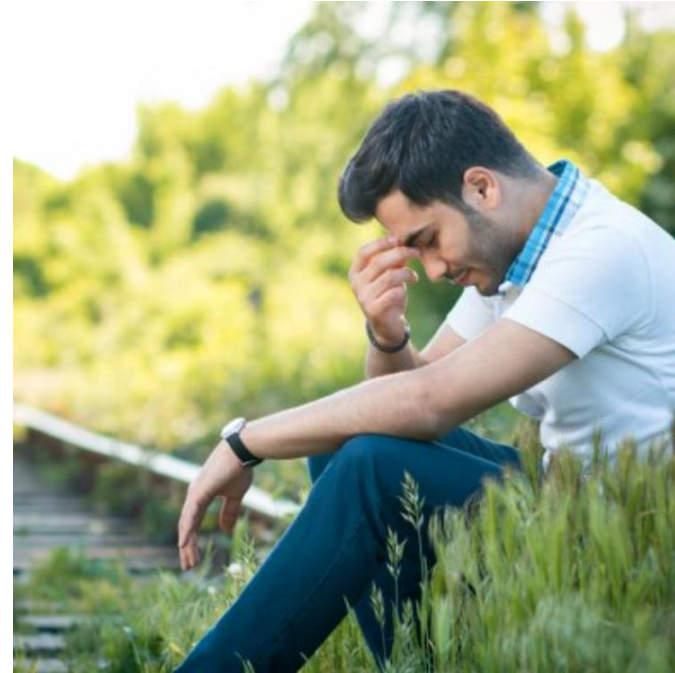
<https://www.hrsa.gov/enews/past-issues/2019/january-17/loneliness-epidemic>

Loneliness, but not social isolation, associated with a higher **Body Mass Index (BMI)**



High rates of social isolation and loneliness in people with psychotic disorders

- Misconception: that people with psychotic disorders are less interested in social relationships
- Actually, improving social relationships is frequently a top treatment goal
- **The prevalence of loneliness in people with psychotic disorders is ~80%**
 - more than twice the rate in the general population (~35%) (Stain et al, 2012)



Poor physical health is common in people with psychotic disorders, isolation and loneliness may play a role

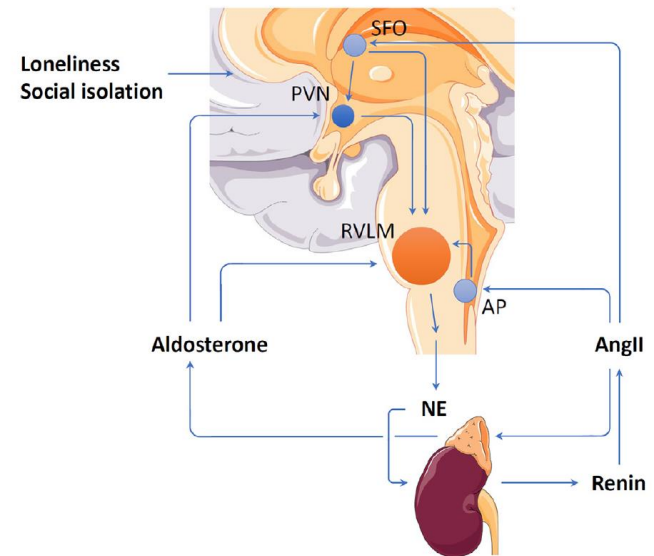
- People with psychotic disorders have lifespans that are 20-25 years lower on average than the general population (Kilbourne et al, 2009)
- In people with psychotic disorders, loneliness is linked with higher rates of **“metabolic syndrome”** (increased waist circumference, hyperlipidemia, elevated blood glucose, high blood pressure) (Badcock et al, 2019; Treméau et al, 2016)
- Living alone is a stronger predictor of mortality than smoking or metabolic syndrome in people with psychotic disorders (Green et al, 2017)



Do isolation and loneliness play a role in many of the health issues associated with having a serious mental illness? If so, how?

Why are social isolation and loneliness bad for your health?

- Resources: less access to health-promoting information, relationships and activities, financial support
- Psychological: increases risk for depression, which is linked to poor cardiovascular health; associated with substance abuse, smoking
- Physiological: increases sympathetic nervous system activity, interferes with sleep, glucose regulation and inflammation

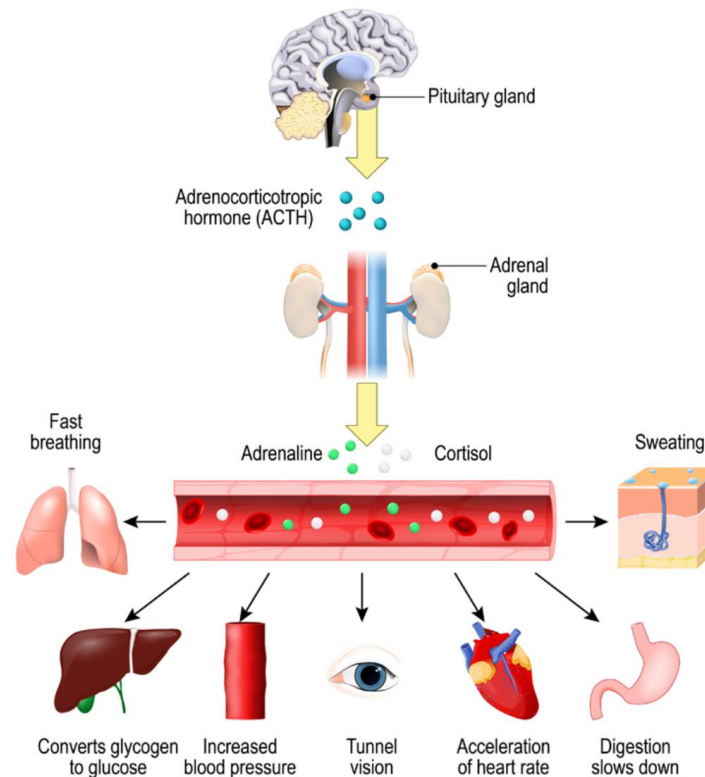


The Hypothalamic-Pituitary-Adrenal (HPA) Axis

Li & Xia, 2020

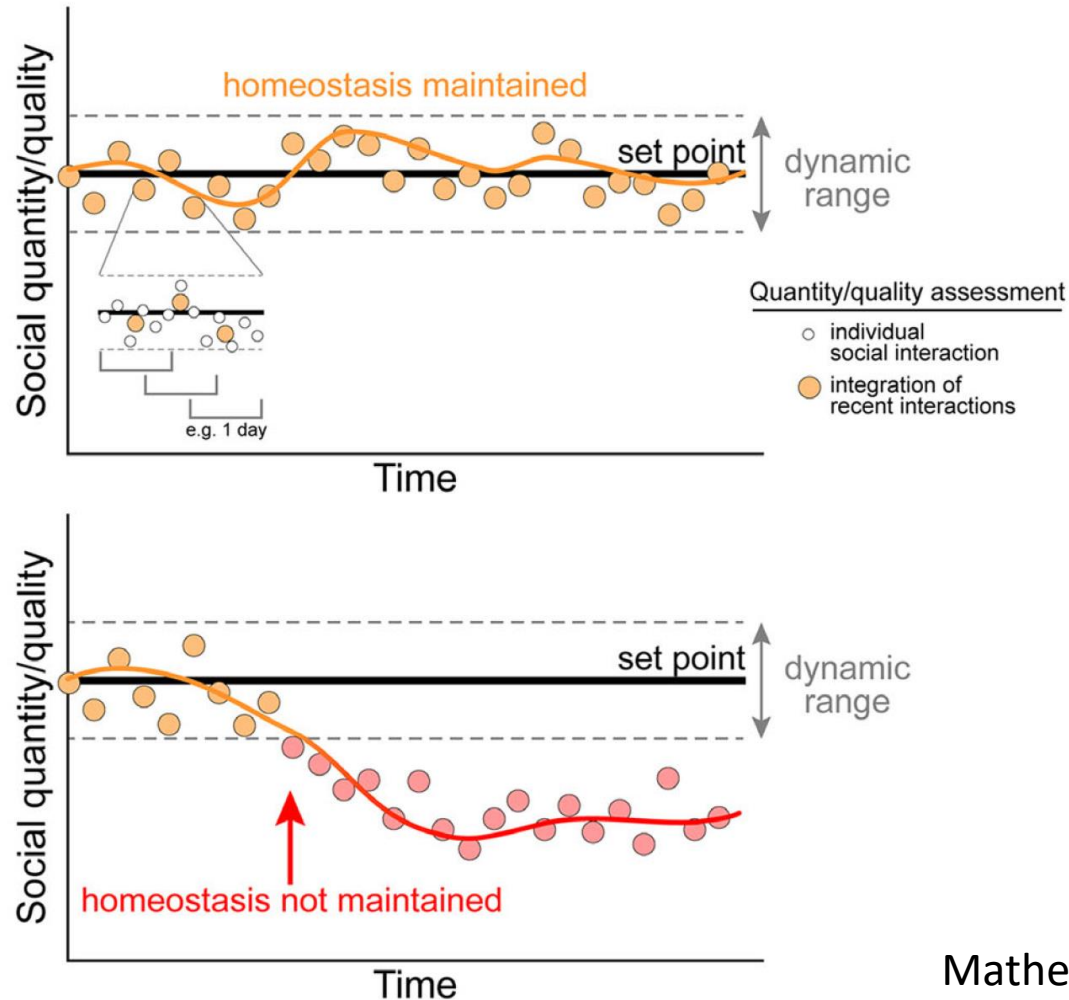
Isolation and loneliness trigger the body's stress response

STRESS RESPONSE



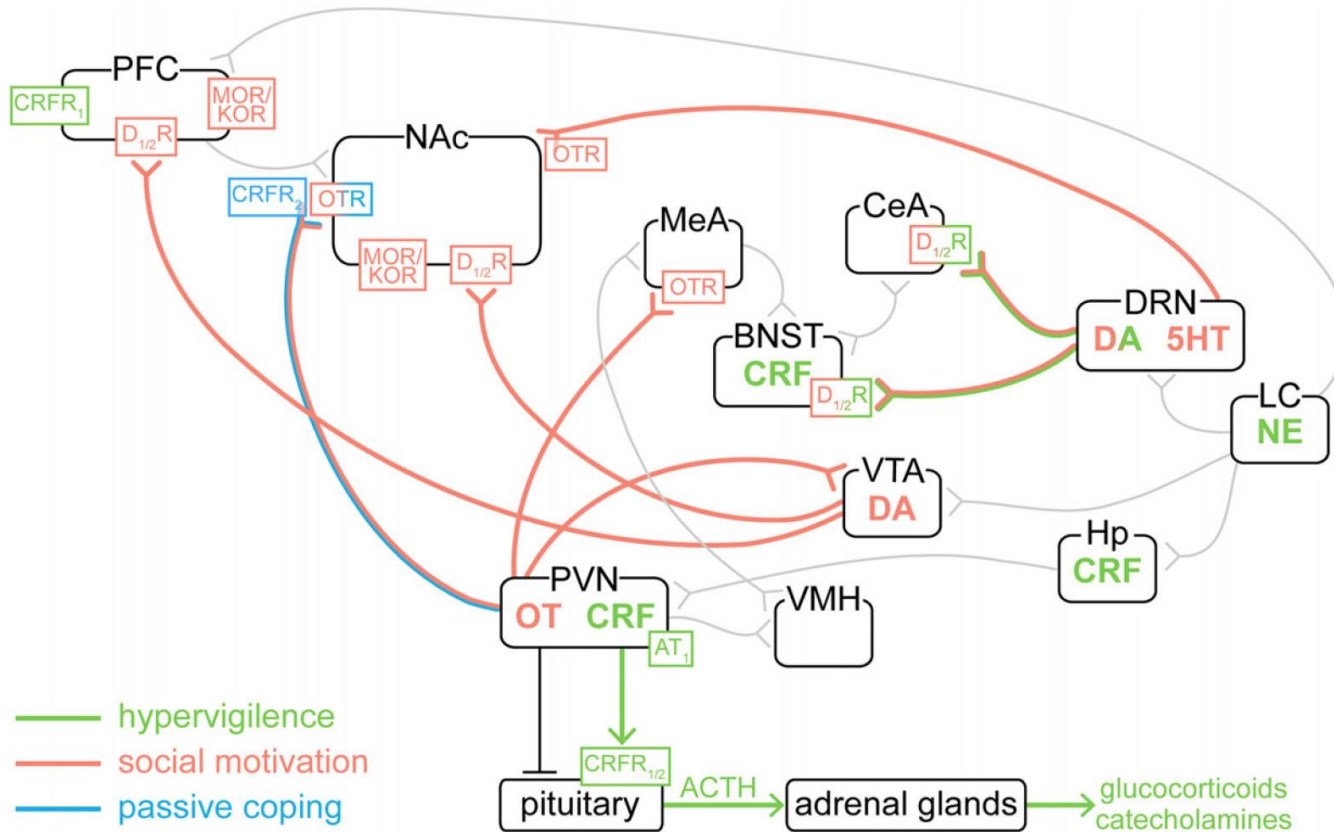
<https://www.scienceabc.com/eyeopeners/does-loneliness-affect-the-body.html>

Loneliness is a signal that “social homeostasis” has been lost and must be corrected



Mathews & Tye, 2019

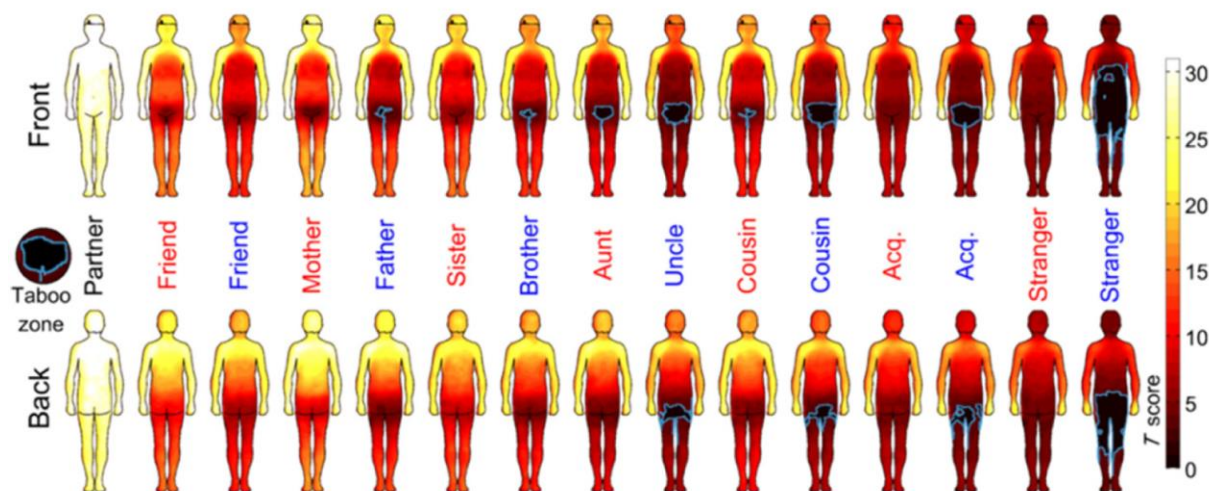
The proposed brain mechanisms of social homeostasis



Increases in rewarding endorphin release with forms of “behavioral synchrony”

- Touch (closest family and friends; similar to grooming in other animal species)
- Singing
- Laughing
- Dancing
- Eating together
- Storytelling

Bzdok & Dunbar, 2020



Topography of social touching depends on the strength and types of social bonds, independent of culture

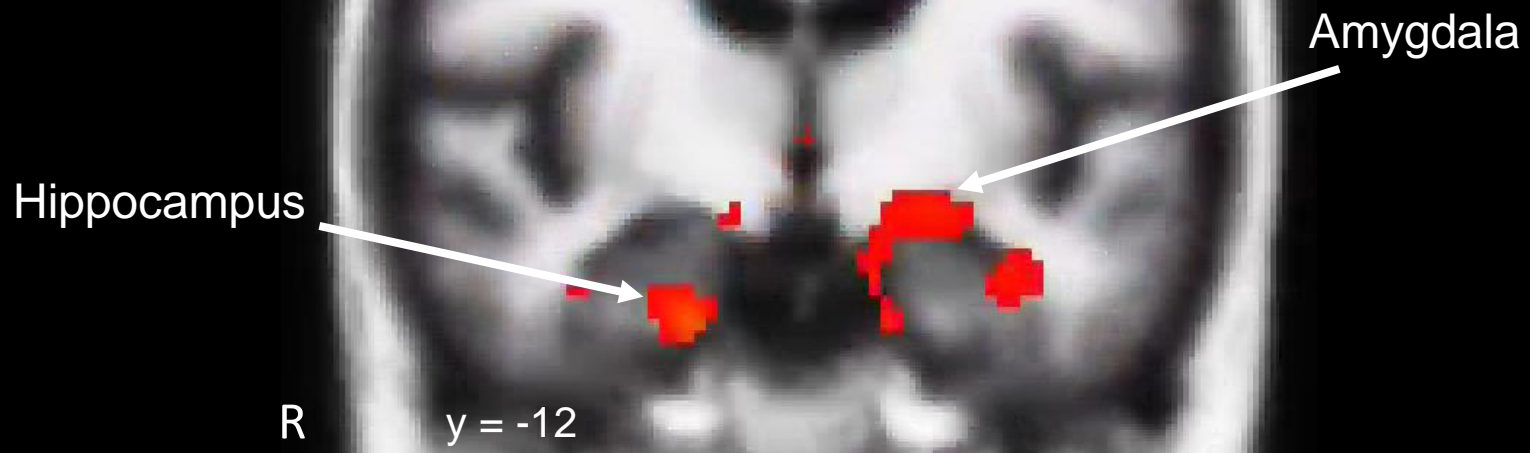
Suvilehto et al, 2015

fMRI stimuli of our recent studies: Looming faces



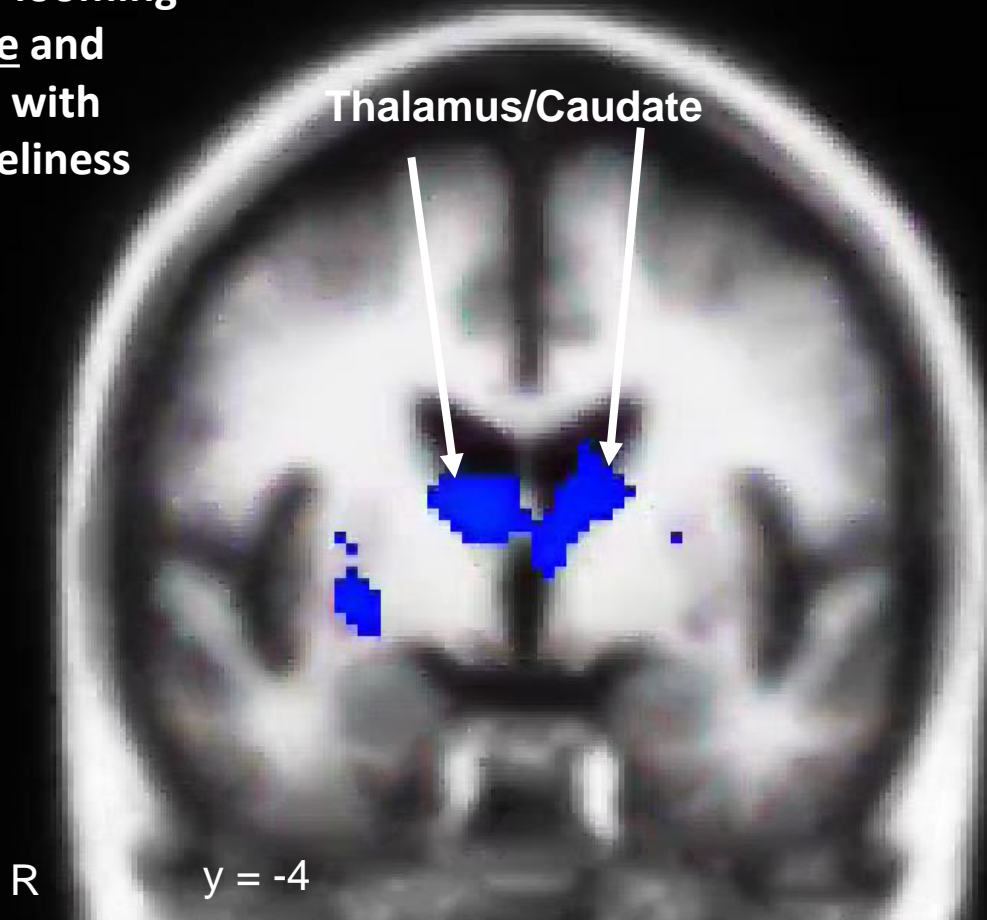
Changes in the brain associated with social isolation

Greater responses to looming faces of the amygdala and hippocampus in people with less social isolation/more social contacts

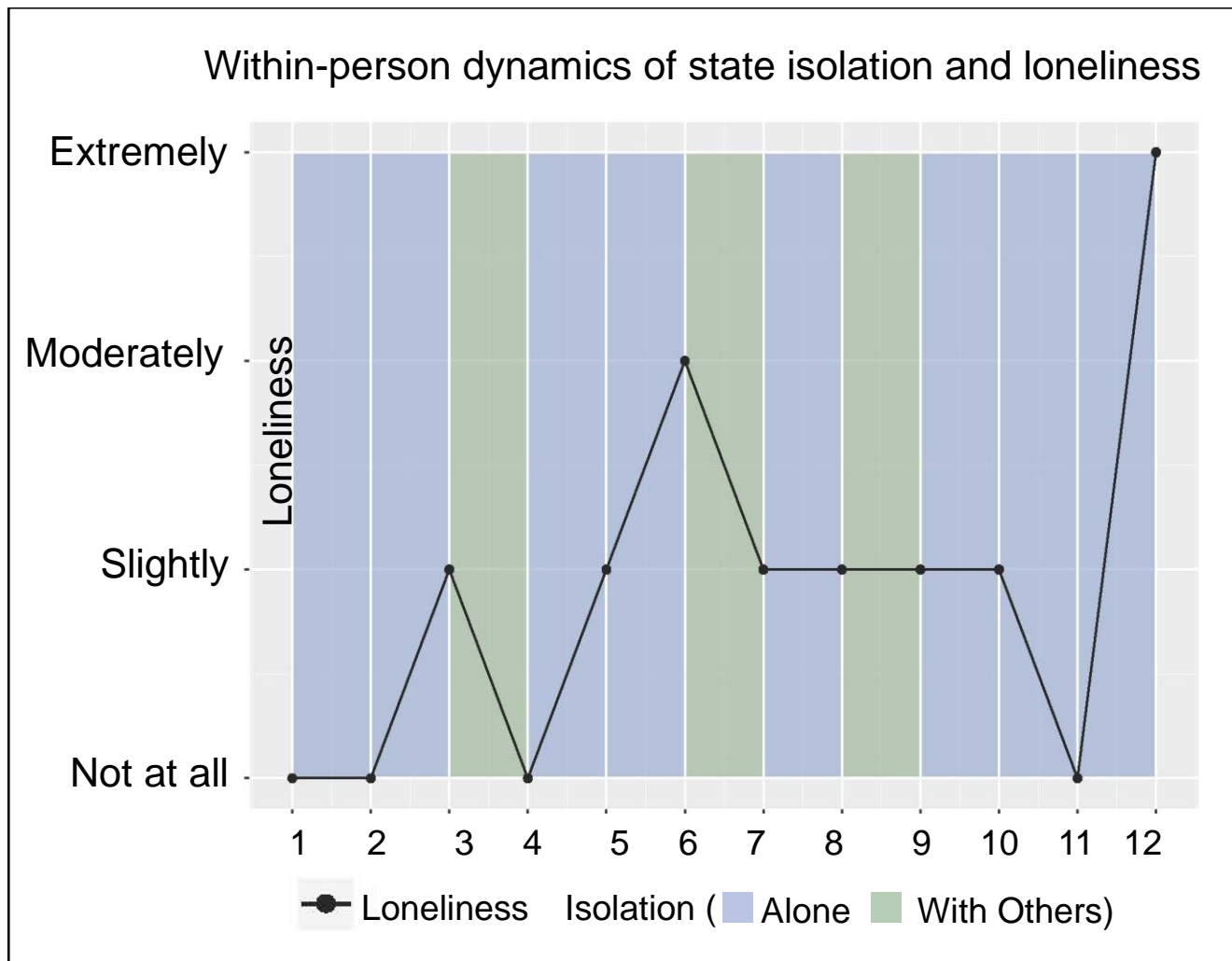


Changes in the brain associated with loneliness

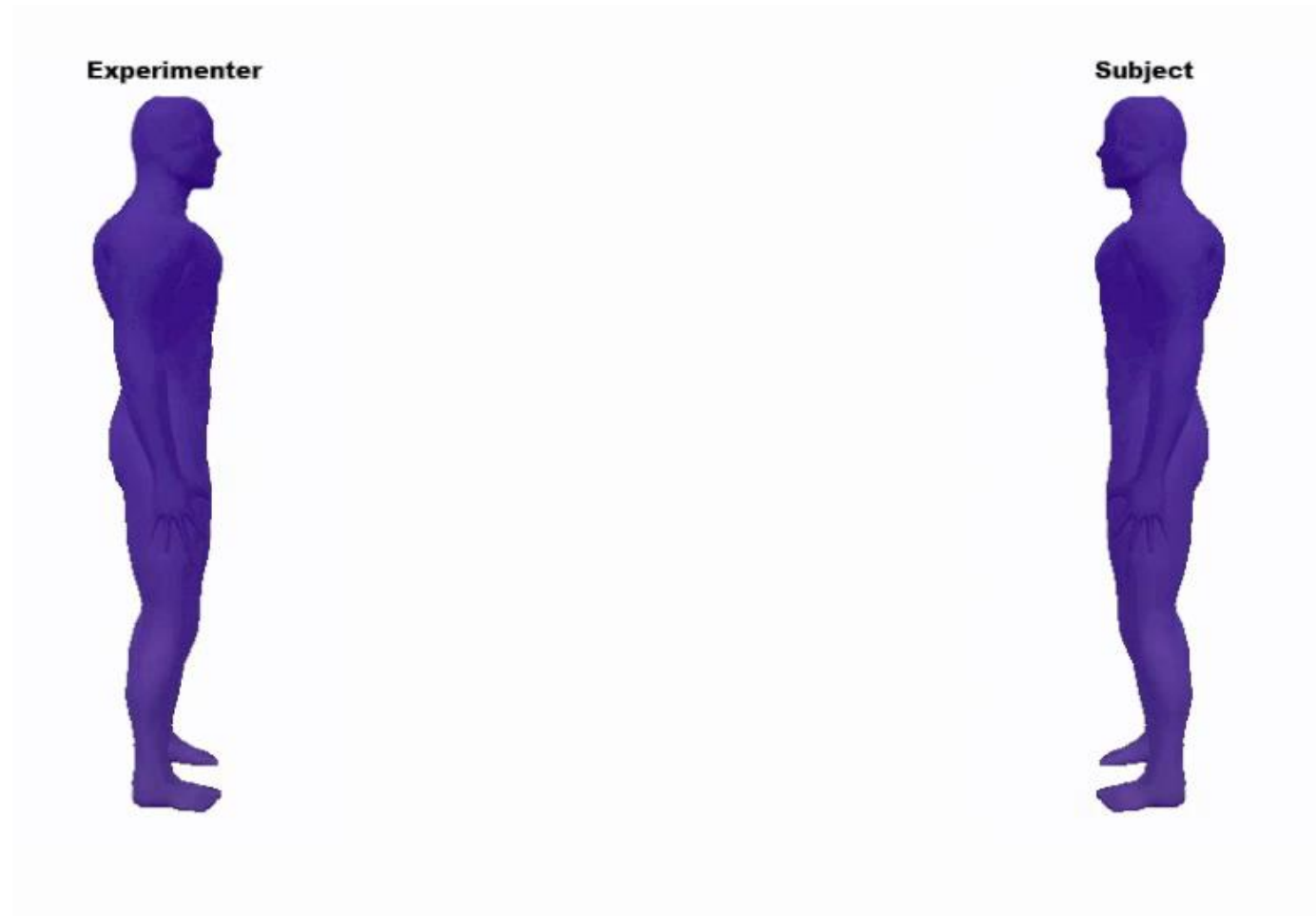
Lower responses to looming faces of the caudate and thalamus in people with higher levels of loneliness



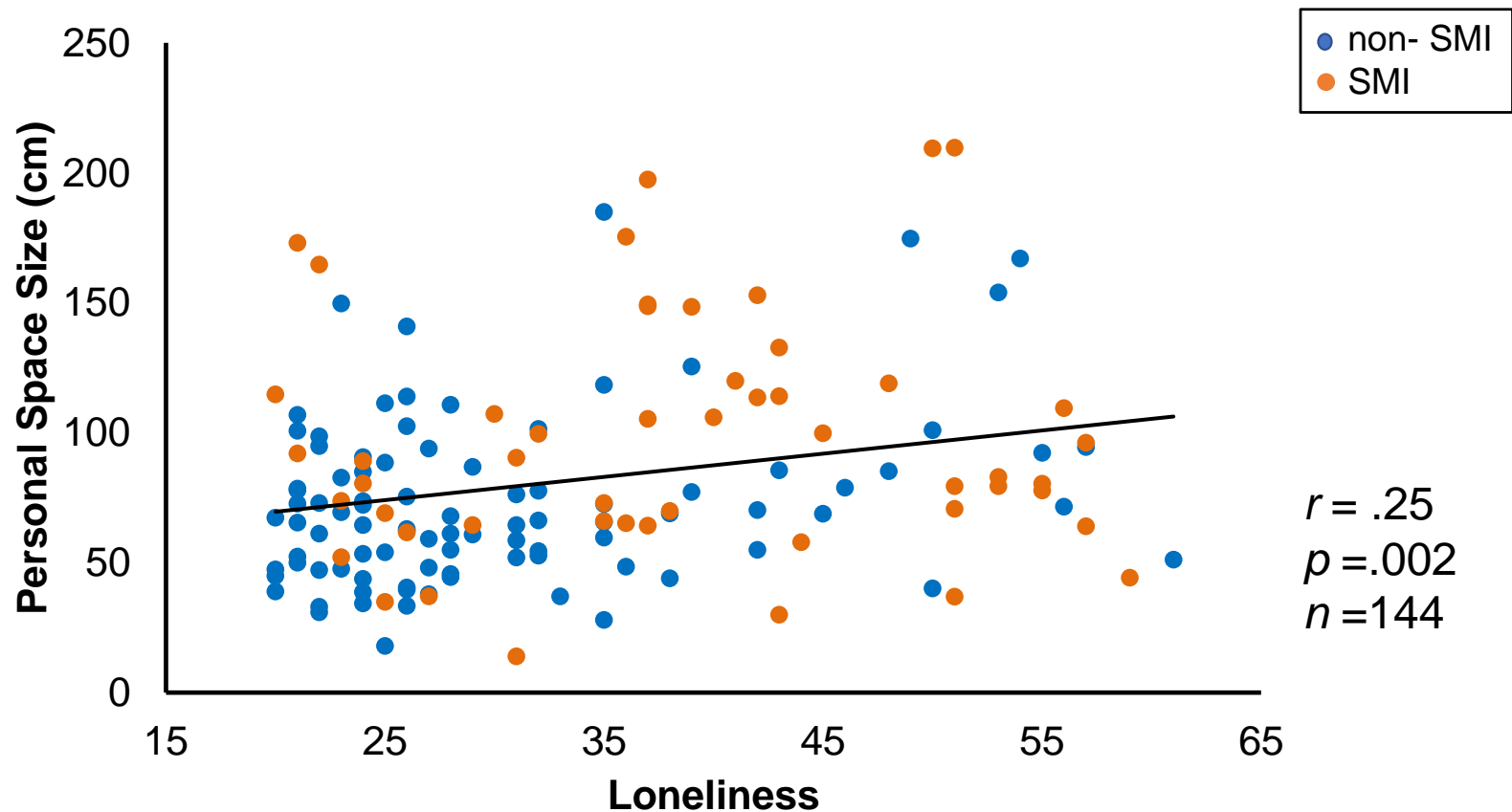
Moment-to-moment experiences of loneliness: increases related to sensitivity to potential rejection (“social threat”)



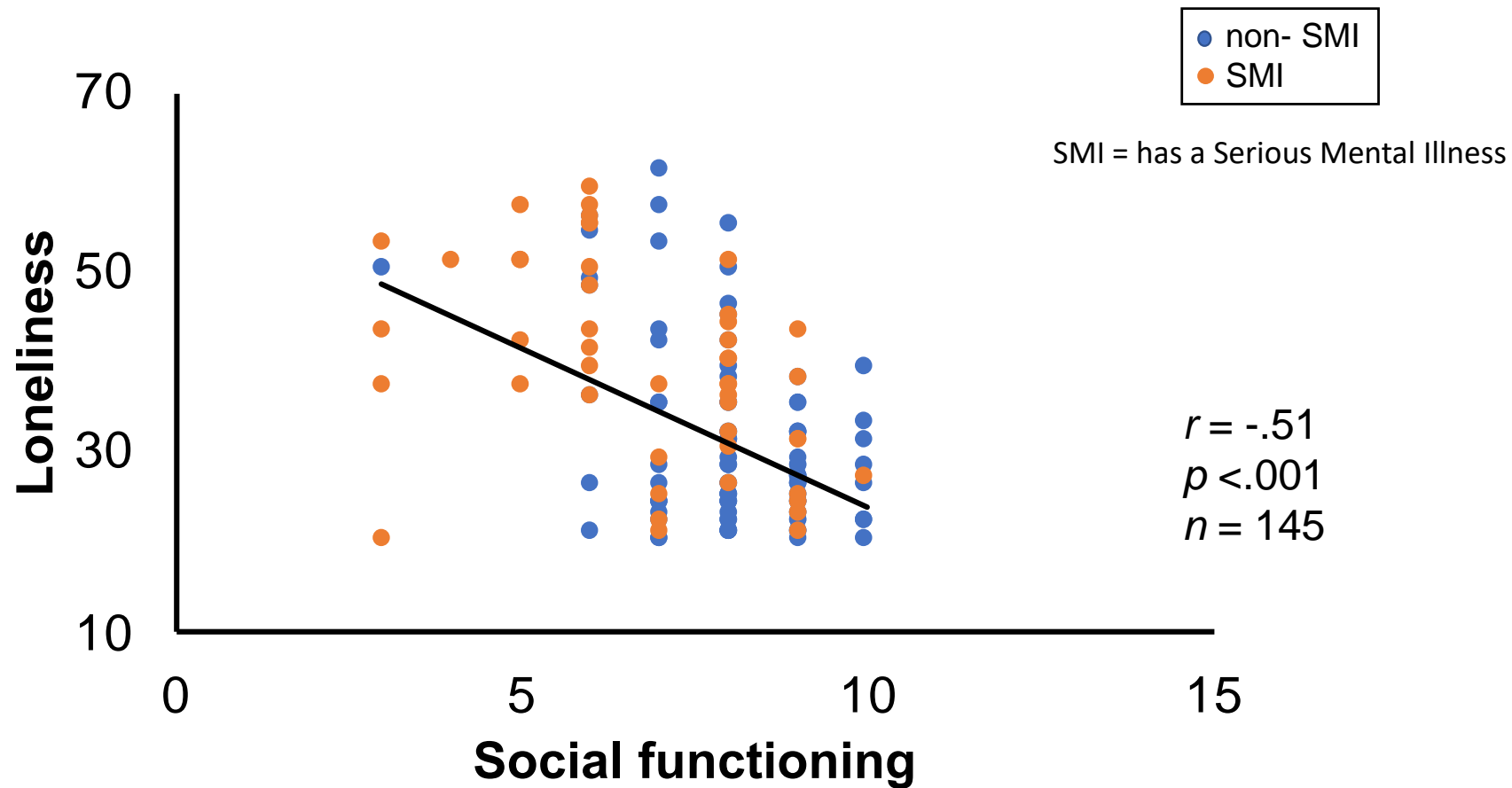
Measured the distance preferred from others
("personal space")



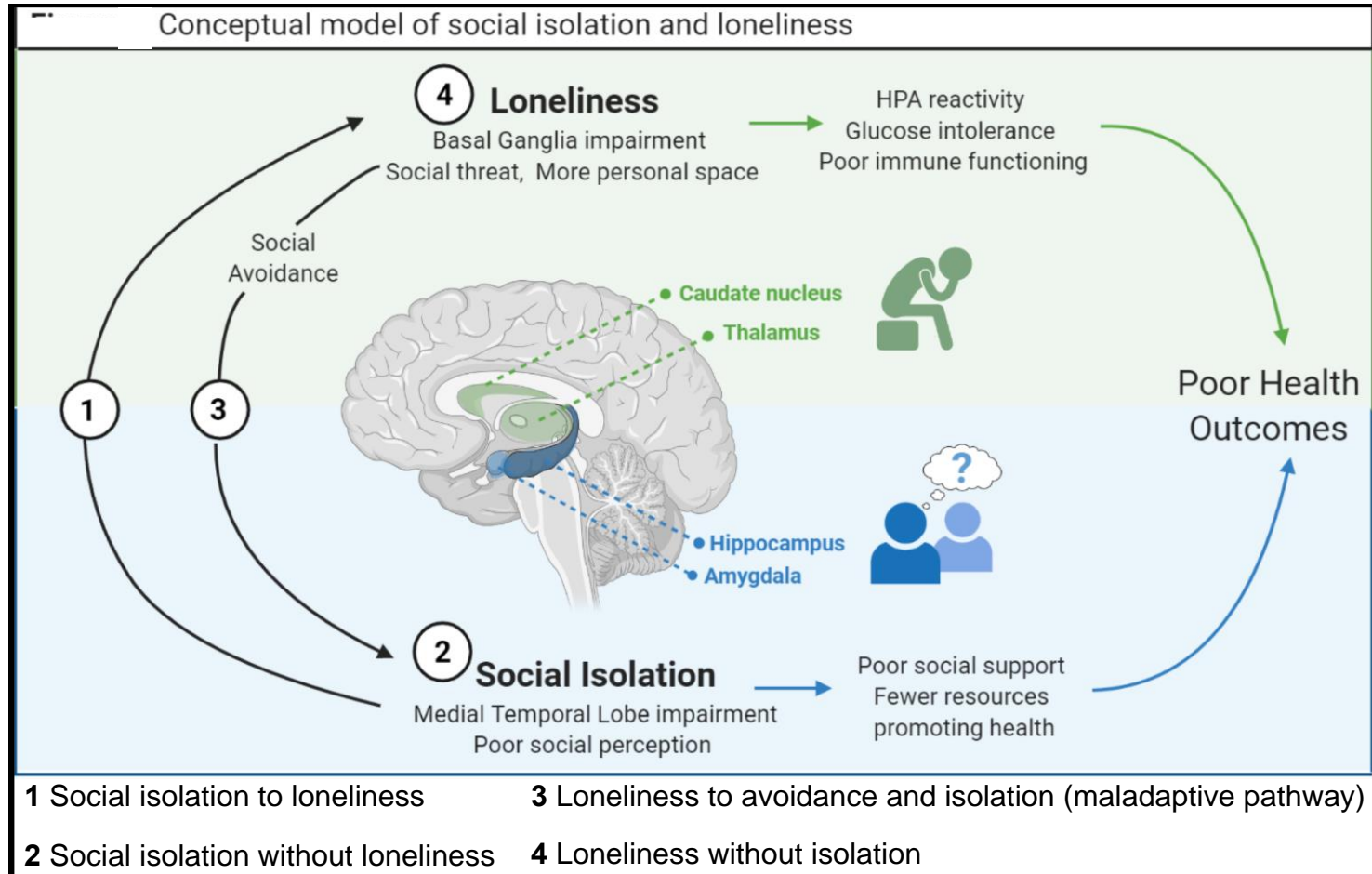
Loneliness linked to a need for more physical distance from others (personal space)



Loneliness predicts poorer social functioning



Model of the neuropsychological basis of loneliness and social isolation



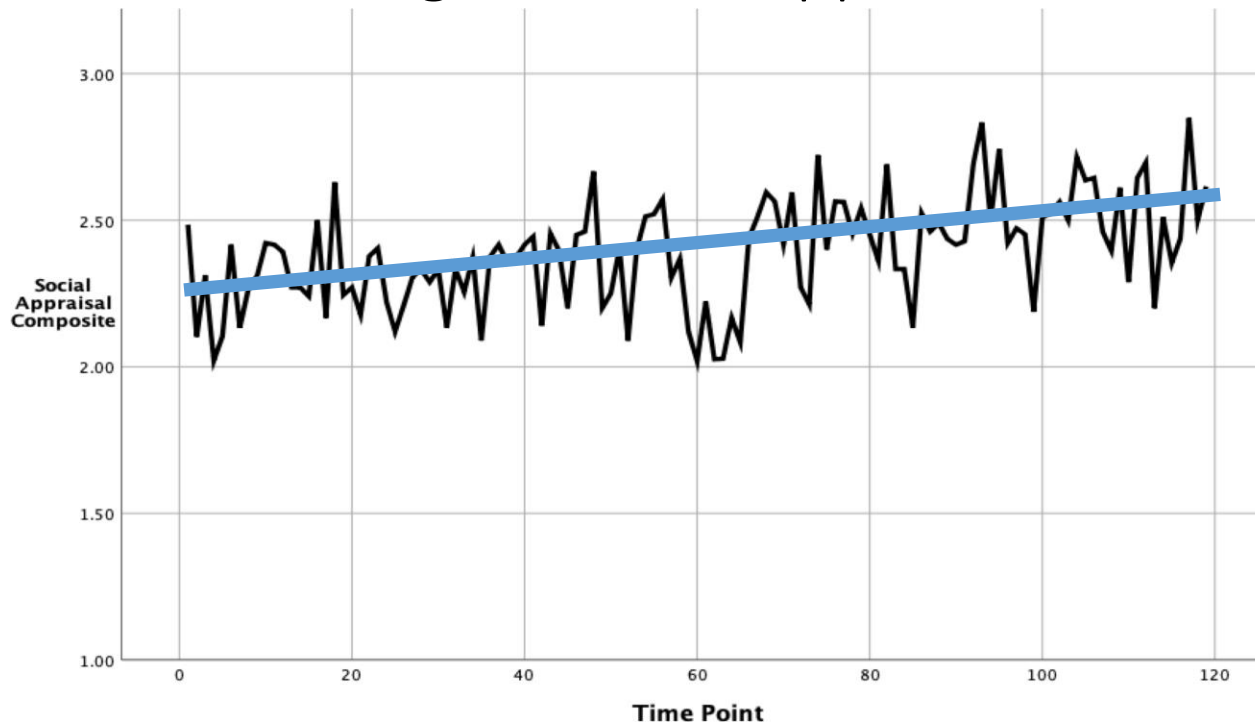
What can we do about this “epidemic of loneliness”?

- Screen for loneliness and isolation in healthcare settings, schools, online
- Educate the public about the detrimental effects of loneliness → change in social behavior and culture?
- Provide interventions to combat chronic loneliness including:
 - Mindfulness-based therapies
 - Tai Chi Qigong meditation, laughter therapy
 - **Cognitive behavioral** or **educational** programs addressing mental barriers to social connection and practical strategies for reducing isolation, loneliness



Motivation and Skills Support (MASS) App, focused on increasing social motivation

Change in social appraisals



Fulford et al, 2020 and under review

Loneliness may be reduced by pets

- One study showed: of 830 older adults, pet owners were 36% less likely to report loneliness (Stanley et al, 2014)
- **Robopets (robots that look and act like pets)** may also reduce loneliness in older adults (Hudson et al, 2020)



"Joy for all" companion pets

Summary & Conclusions

- Social isolation and loneliness are not the same thing
- If persistent, they can both have detrimental effects on mental and physical health
- A feeling of loneliness is a signal from our body that our social needs are not being met
- This widespread problem can be addressed via multiple approaches— **education and awareness are critical**

Thanks!

The Emotion and Social Neuroscience Laboratory



<https://holtlab.wixsite.com/esnlab>



Dan Fulford, PhD
Boston University

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