

Parks: The Public Health Superpower Hiding in Plain Sight



Howard Frumkin, M.D., Dr.P.H.

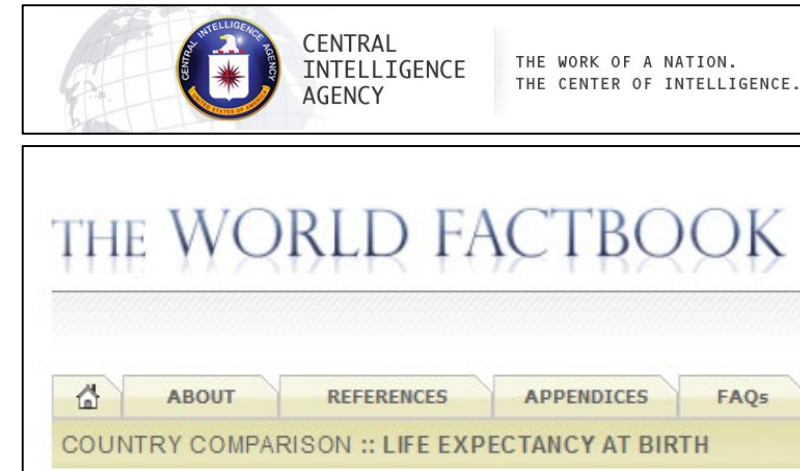
Senior Vice President and Director, Land and People Lab, Trust for Public Land
Professor Emeritus, University of Washington School of Public Health

We have a problem with...



Life expectancy at birth

1.	MONACO	89.64
2.	SINGAPORE	86.51
3.	MACAU	85.16
4.	JAPAN	85.00
5.	SAN MARINO	84.05
6.	CANADA	83.99
7.	ICELAND	83.83
8.	HONG KONG	83.80
9.	ANDORRA	83.61
10.	ISRAEL	83.54
11.	GUERNSEY	83.42
12.	SWITZERLAND	83.42



Life expectancy at birth

13.	MALTA	83.39
14.	AUSTRALIA	83.28
15.	SOUTH KOREA	83.17
16.	LUXEMBOURG	83.17
17.	JERSEY	82.83
18.	SWEDEN	82.80
19.	FRANCE	82.79
20.	ITALY	82.79
21.	SPAIN	82.78
22.	LIECHTENSTEIN	82.76
23.	NORWAY	82.75
24.	NEW ZEALAND	82.74

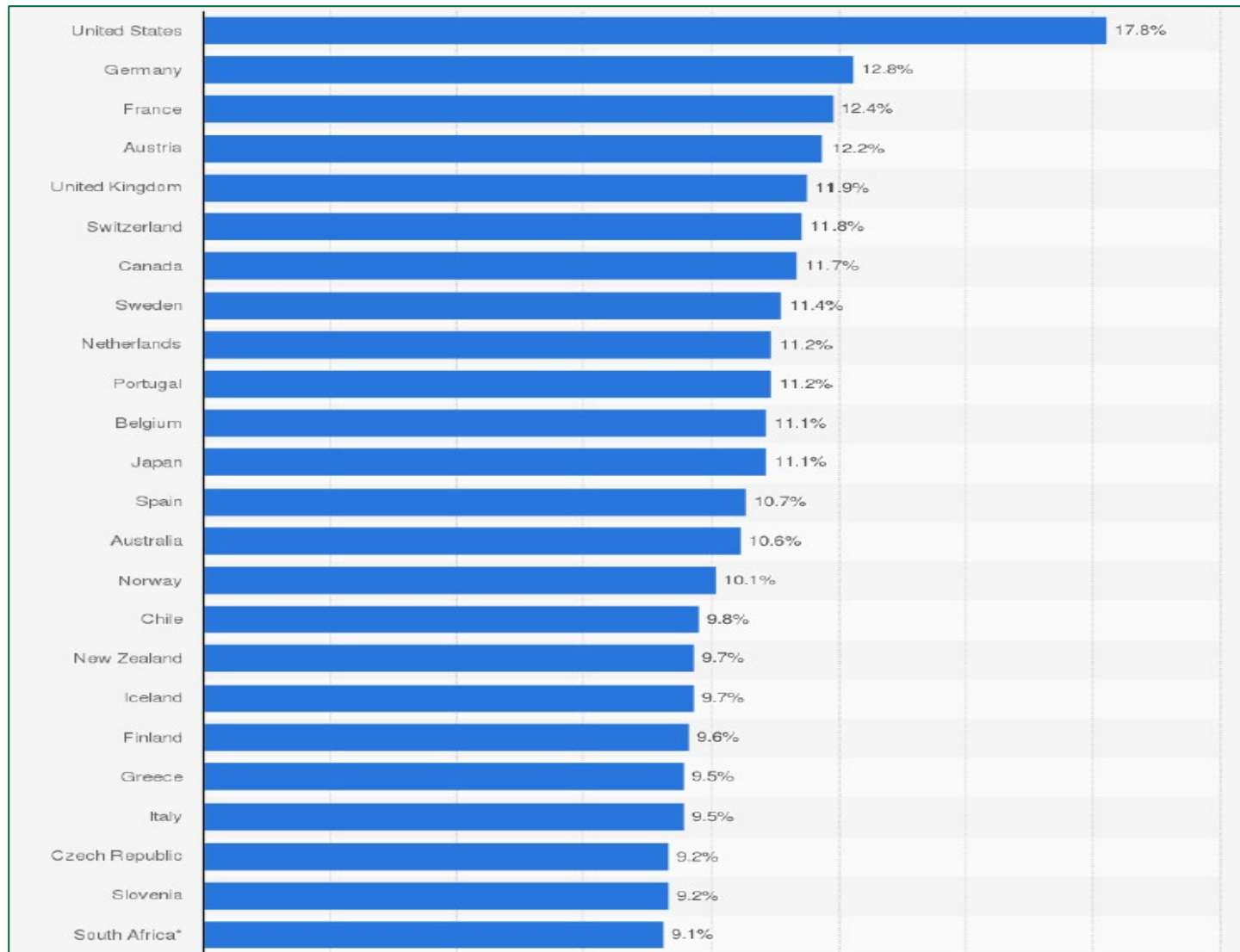
Life expectancy at birth

25.	AUSTRIA	82.48
26.	ANGUILLA	82.41
27.	NETHERLANDS	82.36
28.	BERMUDA	82.25
29.	CAYMAN ISLANDS	82.25
30.	ISLA OF MAN	82.25
31.	BELGIUM	82.06
32.	UNITED KINGDOM	82.05
33.	SLOVENIA	82.02
34.	FINLAND	81.96
35.	PUERTO RICO	81.89
36.	DENMARK	81.87

Life expectancy at birth

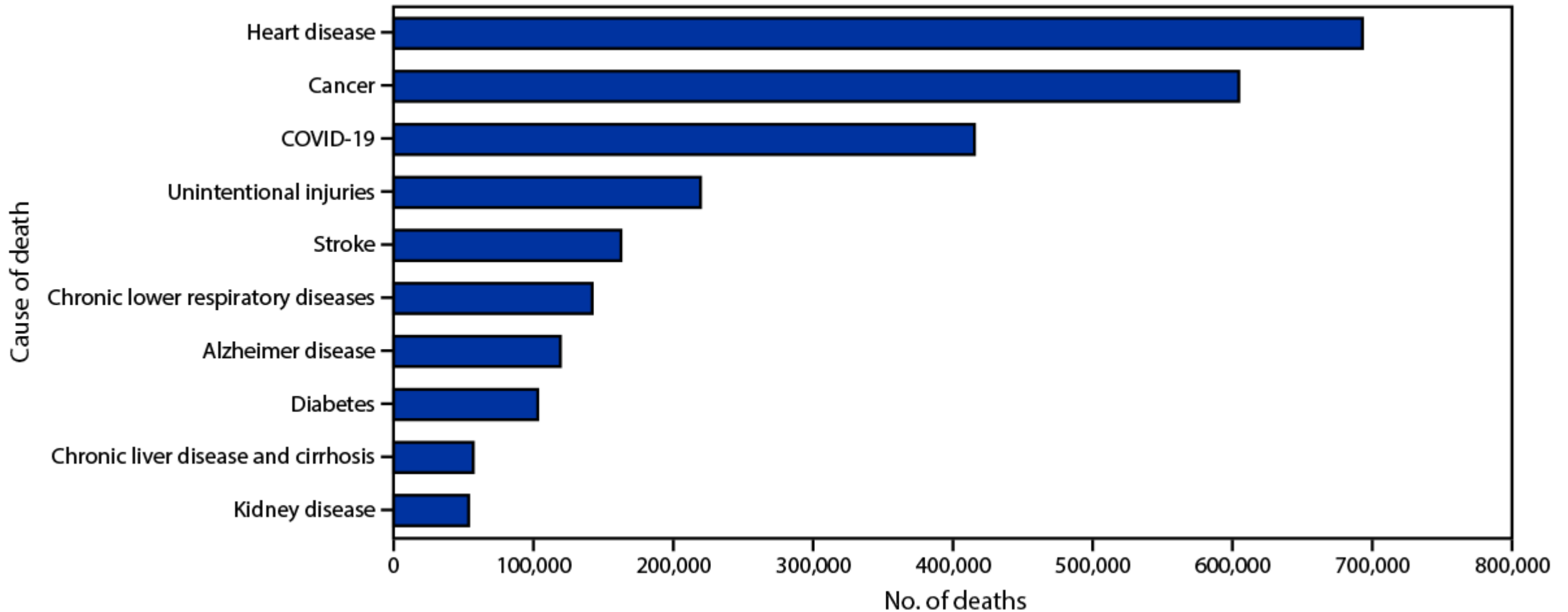
37.	IRELAND	81.87
38.	GERMANY	81.72
39.	GREECE	81.71
40.	PORTUGAL	81.71
41.	ST PIERRE & MIQUELON	81.62
42.	FAROE ISLANDS	81.47
43.	TAIWAN	81.38
44.	TURKS & CAICOS	81.04
45.	WALLIS & FUTUNA	80.89
46.	ST BARTHELMY	80.80
47.	ST MARTIN	80.80
48.	UNITED STATES	80.75

Health spending as a proportion of GDP, 2021



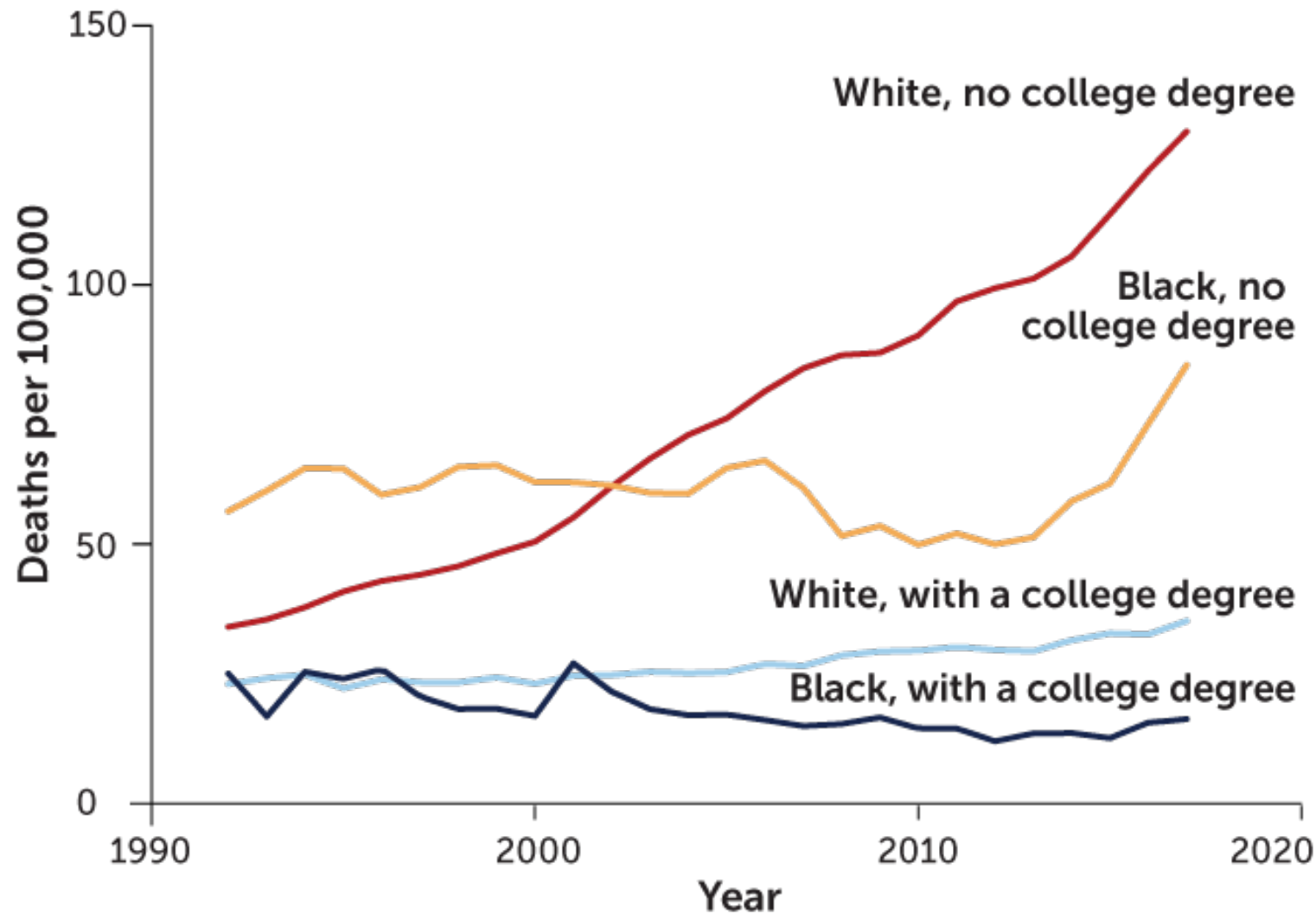
Data: OECD. Health expenditure and financing. OECD.Stat. Feb 2023.
Graphic: Statista. Health expenditure as a percentage of gross domestic product (GDP) in selected countries in 2021. Feb 2023.

Leading causes of death, U.S., 2021



Ahmad FB, Cisewski JA, Anderson RN. Provisional Mortality Data — United States, 2021. *MMWR Morb Mortal Wkly Rep* 2022;71:597-600. <http://dx.doi.org/10.15585/mmwr.mm7117e1>.

Deaths of despair: Liver disease, drug overdose, suicide

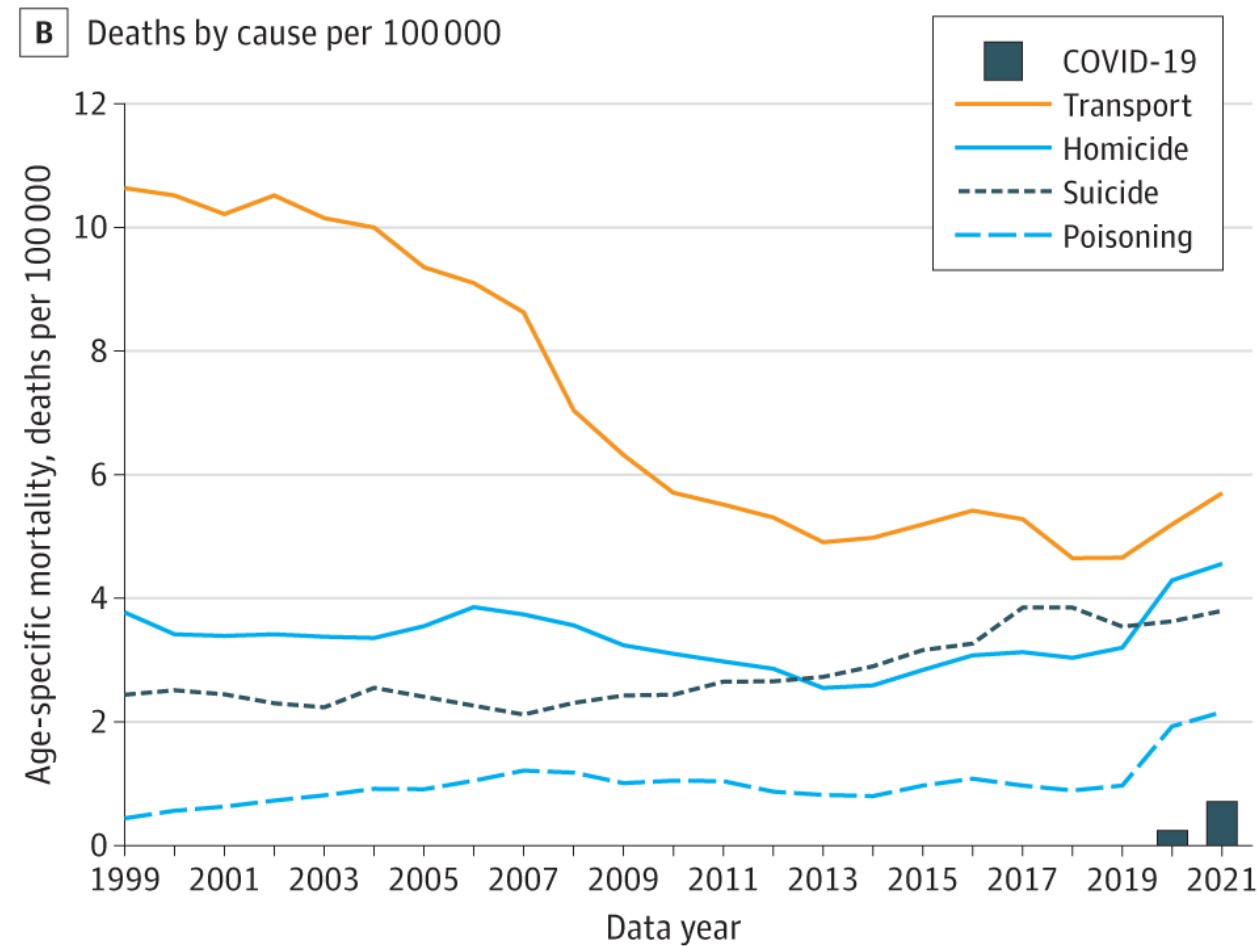
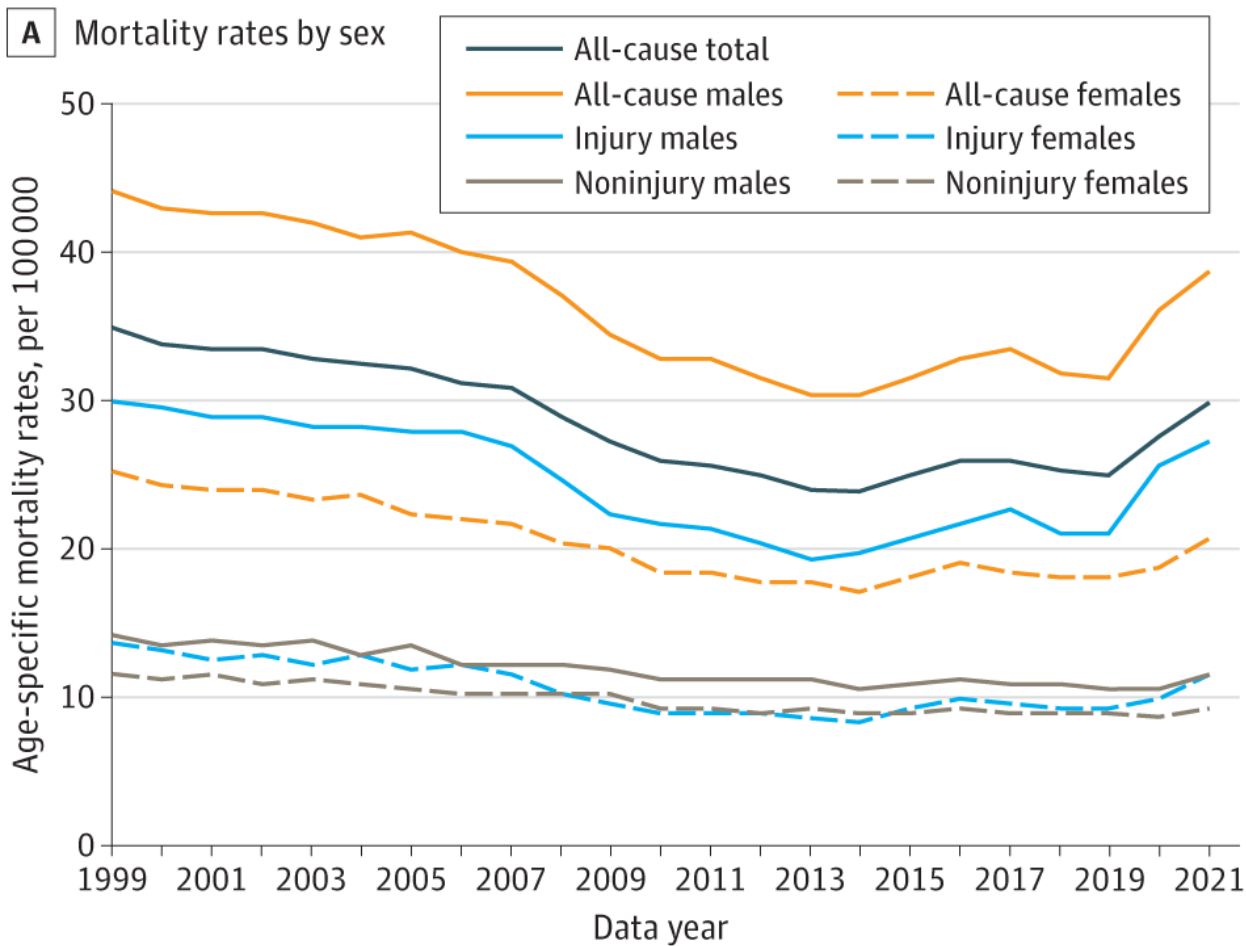


Data: Case A, Deaton A. *Deaths of Despair and the Future of Capitalism*. Princeton University Press, 2020.

Graphic: Bower B. 'Deaths of despair' are rising. It's time to define despair. *Science News*, Nov 2, 2020.

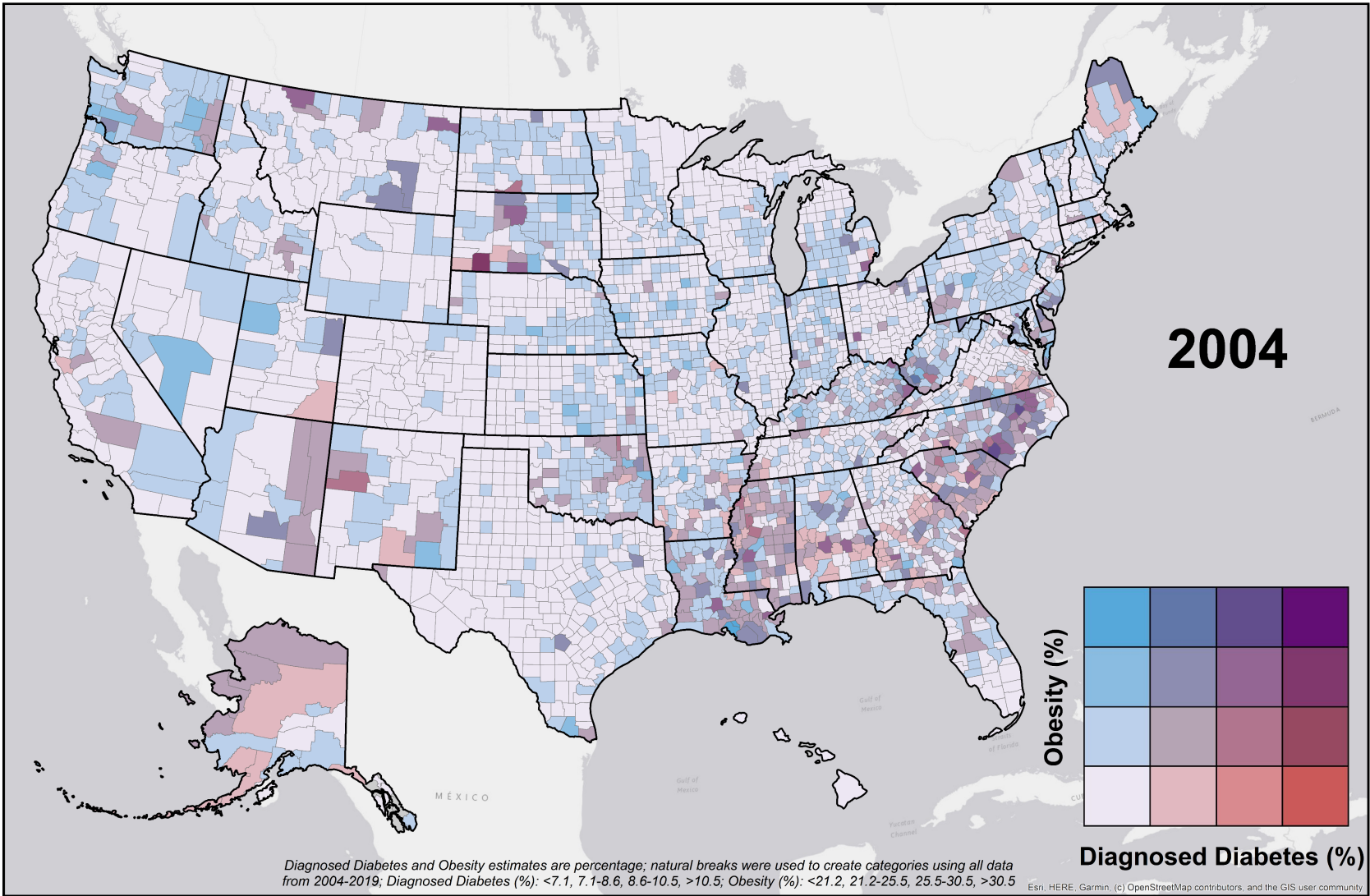
<https://www.sciencenews.org/article/deaths-of-despair-depression-mental-health-covid-19-pandemic>

Rising death rates among children and adolescents

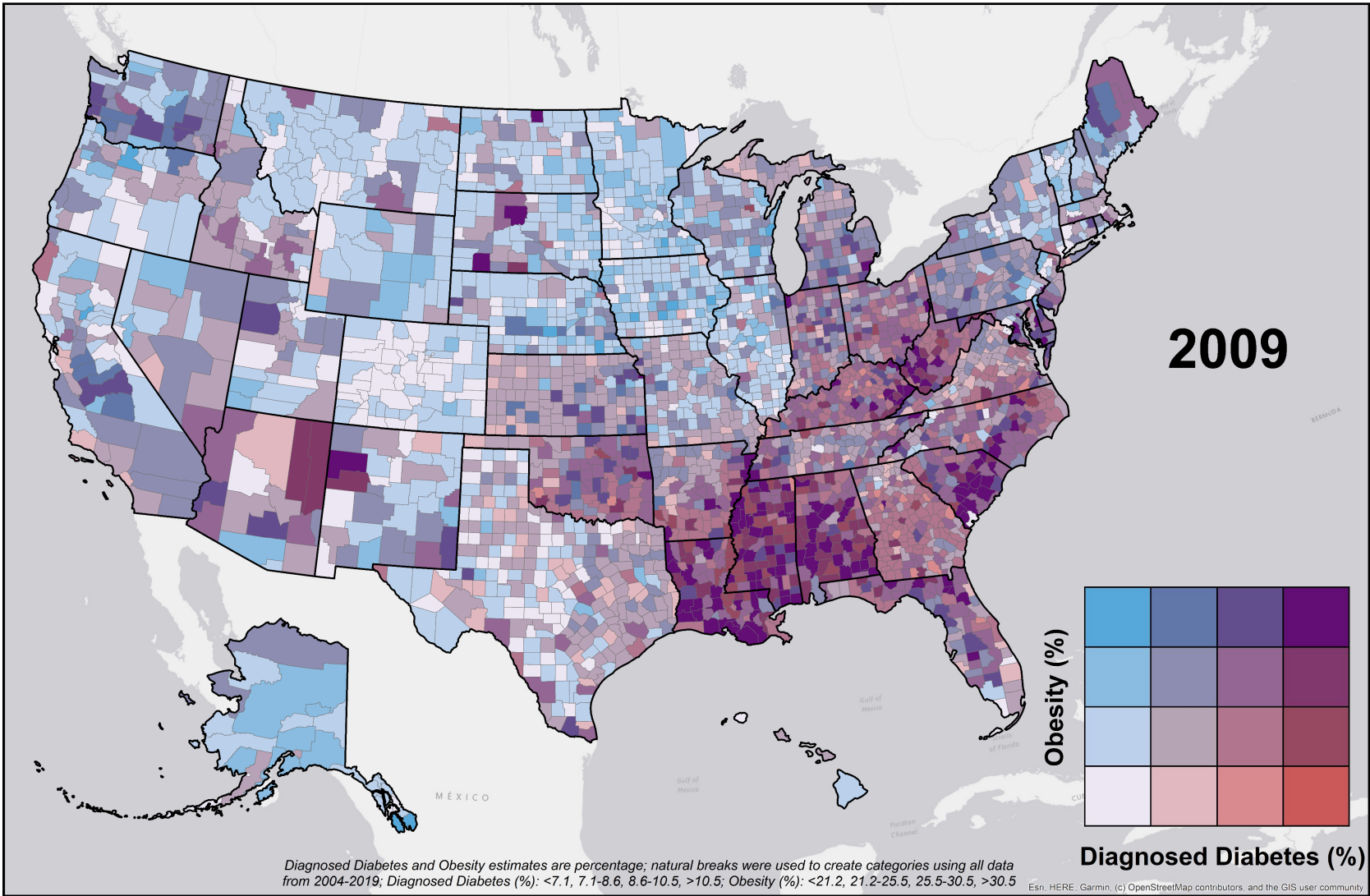


Woolf SH, Wolf ER, Rivara FP. The new crisis of increasing all-cause mortality in US children and adolescents. JAMA. Published online March 13, 2023. doi:10.1001/jama.2023.3517.

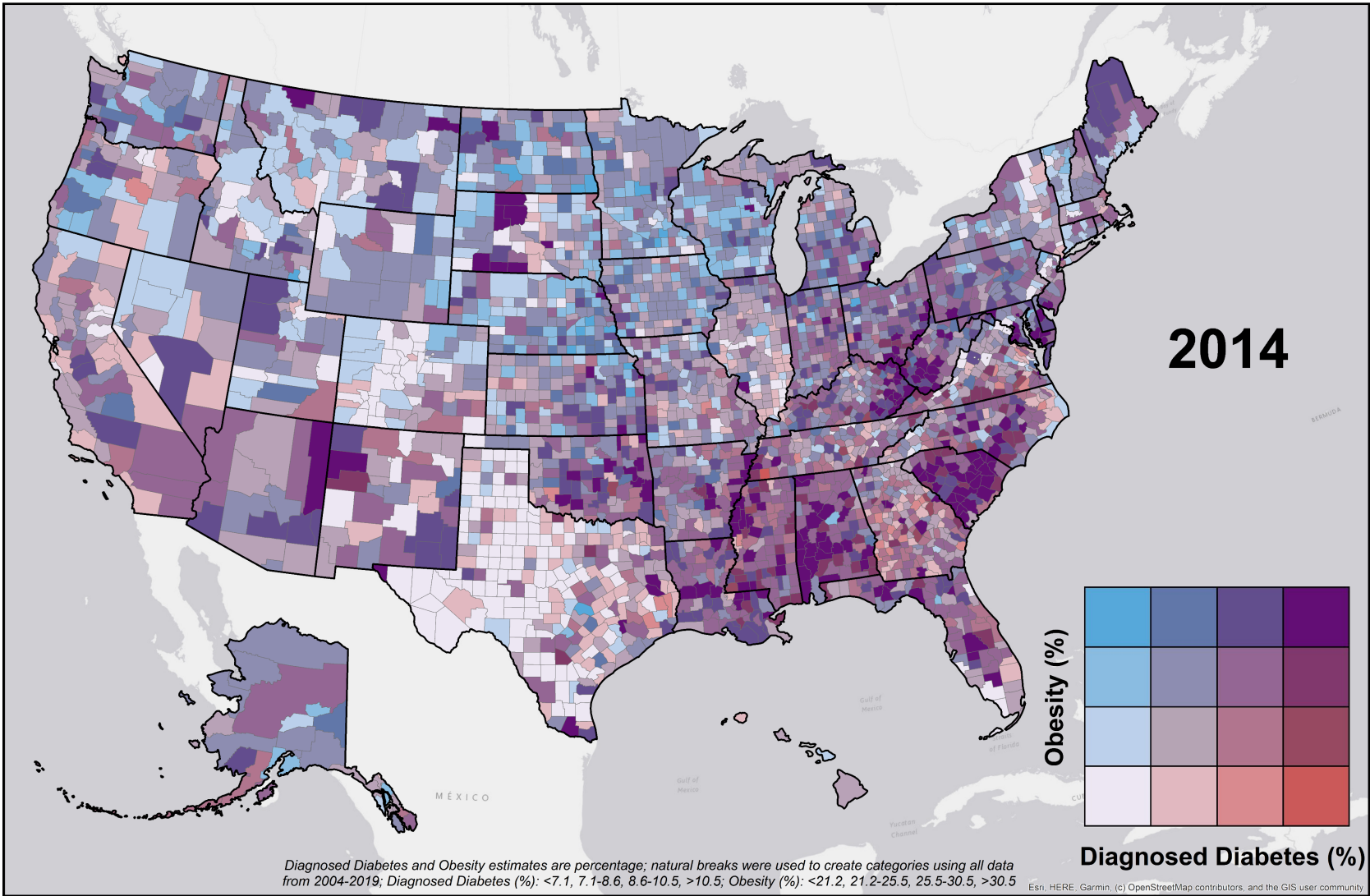
Obesity and diabetes, U.S., 2004



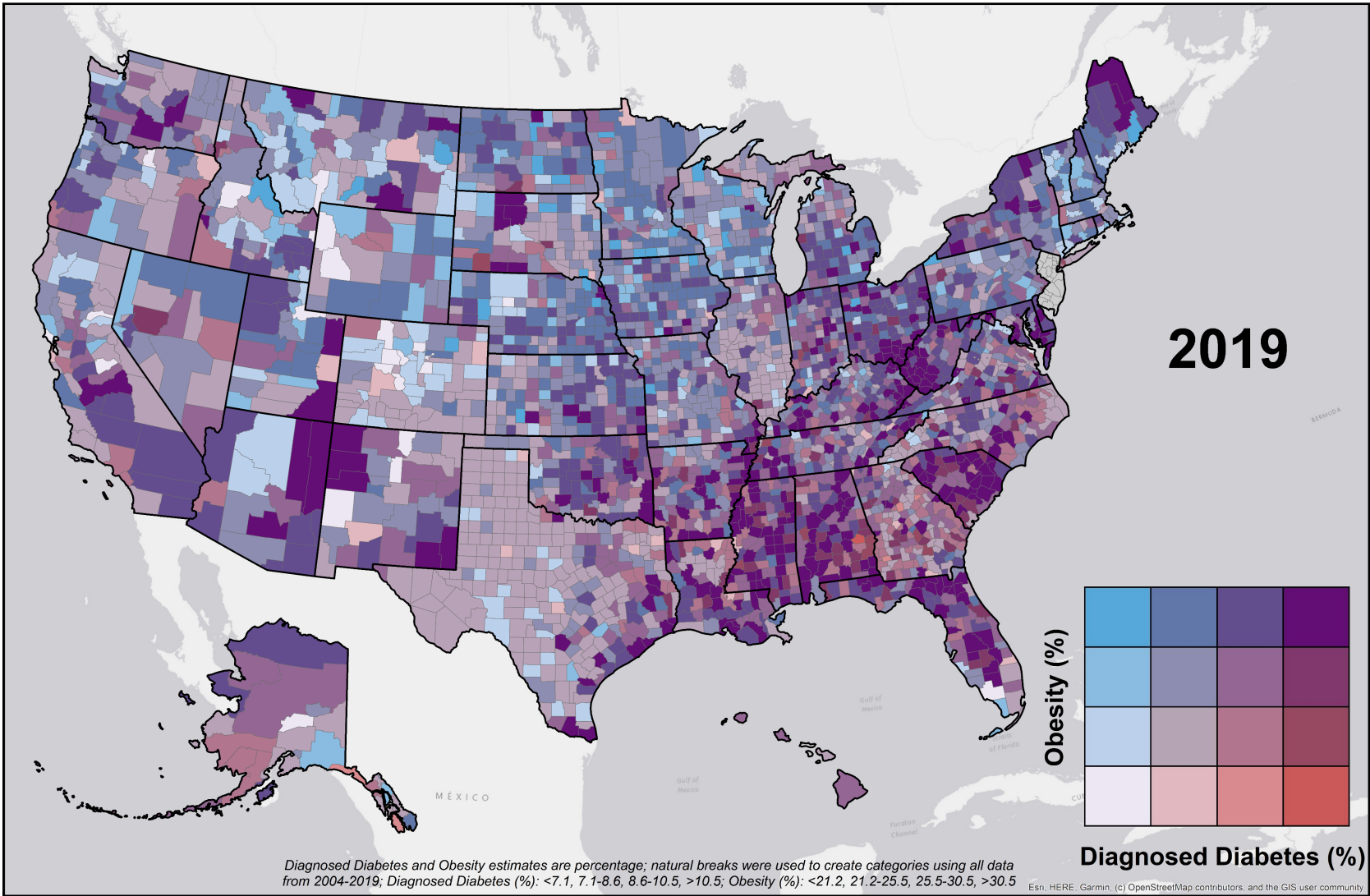
Obesity and diabetes, U.S., 2009



Obesity and diabetes, U.S., 2014



Obesity and diabetes, U.S., 2019



Parks and health: Three major pathways



Nature contact



Physical activity



Social interactions

Nature contact is good for health



Nature contact: Mental and behavioral health



REDUCED
STRESS



REDUCED
DEPRESSION
AND
ANXIETY



REDUCED
ADHD
SYMPTOMS



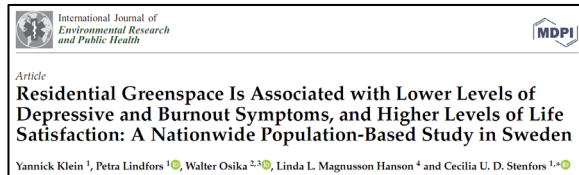
PROSOCIAL
BEHAVIOR



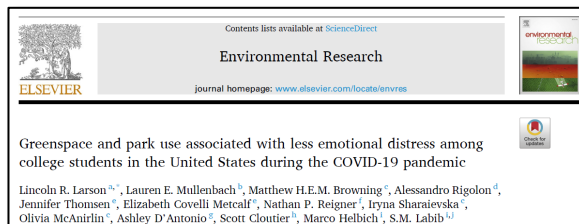
REDUCED
AGGRESSION

Nature contact: Mental and behavioral health

More greenspace exposure associated with...



Fewer depressive and burnout symptoms.



Less emotional distress during the COVID pandemic.



Lower sales of mood and anxiety disorder medications.



Less post-partum depression.

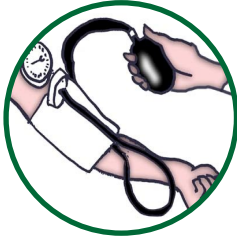
Suicide and Homicide More Common with Limited Urban Tree Canopy Cover

Thomas V.L. El-Mallakh, *University of Louisville*
Scott Hedges, *Seven Counties Services*
Jayesh P. Raj, *University of Louisville*
Aruni Bhatnagar, *University of Louisville*
Sarah Moyer, *University of Louisville*
Rif S. El-Mallakh, *University of Louisville School of Medicine*



Lower suicide rates.

Nature contact: Physical health



LOWER
BLOOD
PRESSURE



SMOOTHER
POST-OP
RECOVERY



BETTER
BIRTH
OUTCOMES



IMPROVED
PAIN
CONTROL



LESS
OBESITY



REDUCED
DIABETES



BETTER
EYESIGHT

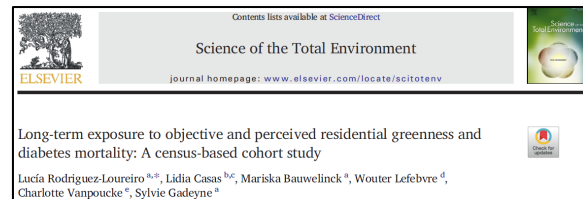


+/- ASTHMA
& ALLERGY
EFFECTS

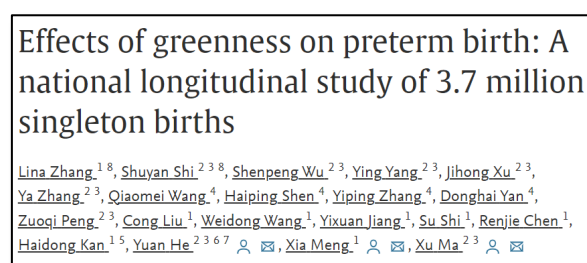
Nature contact: Physical health



Less cardiovascular disease.



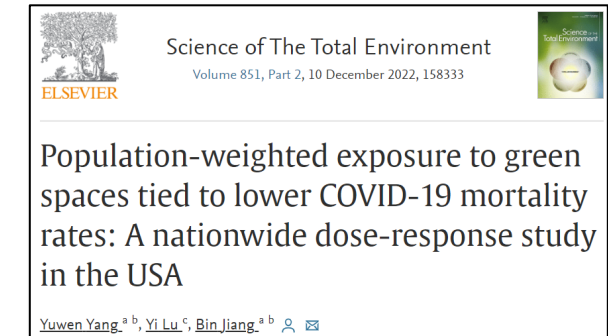
Lower diabetes mortality.



Less preterm birth.



Fewer premenstrual symptoms.



Lower COVID mortality.

Nature contact: Overall health and well-being



IMPROVED
SLEEP



IMPROVED
HEALTH IN
CANCER
PATIENTS



BETTER
GENERAL
HEALTH



HEALTHIER CHILD
DEVELOPMENT



LONGER LIFE
EXPECTANCY



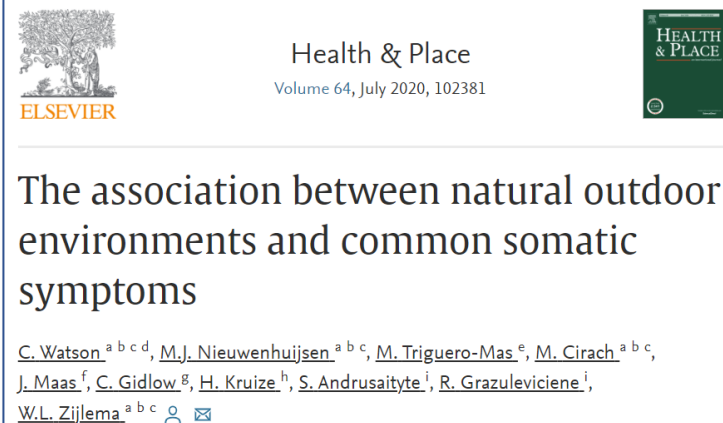
GREATER
HAPPINESS

Nature contact: Overall health and well-being

Influence of Neighborhood Built Environments on the Outdoor Free Play of Young Children: a Systematic, Mixed-Studies Review and Thematic Synthesis

Emily Gemmell^a · Rachel Ramsden^a · Mariana Brussoni^a · Michael Brauer^a

More outdoor free play among children.



Fewer somatic symptoms.

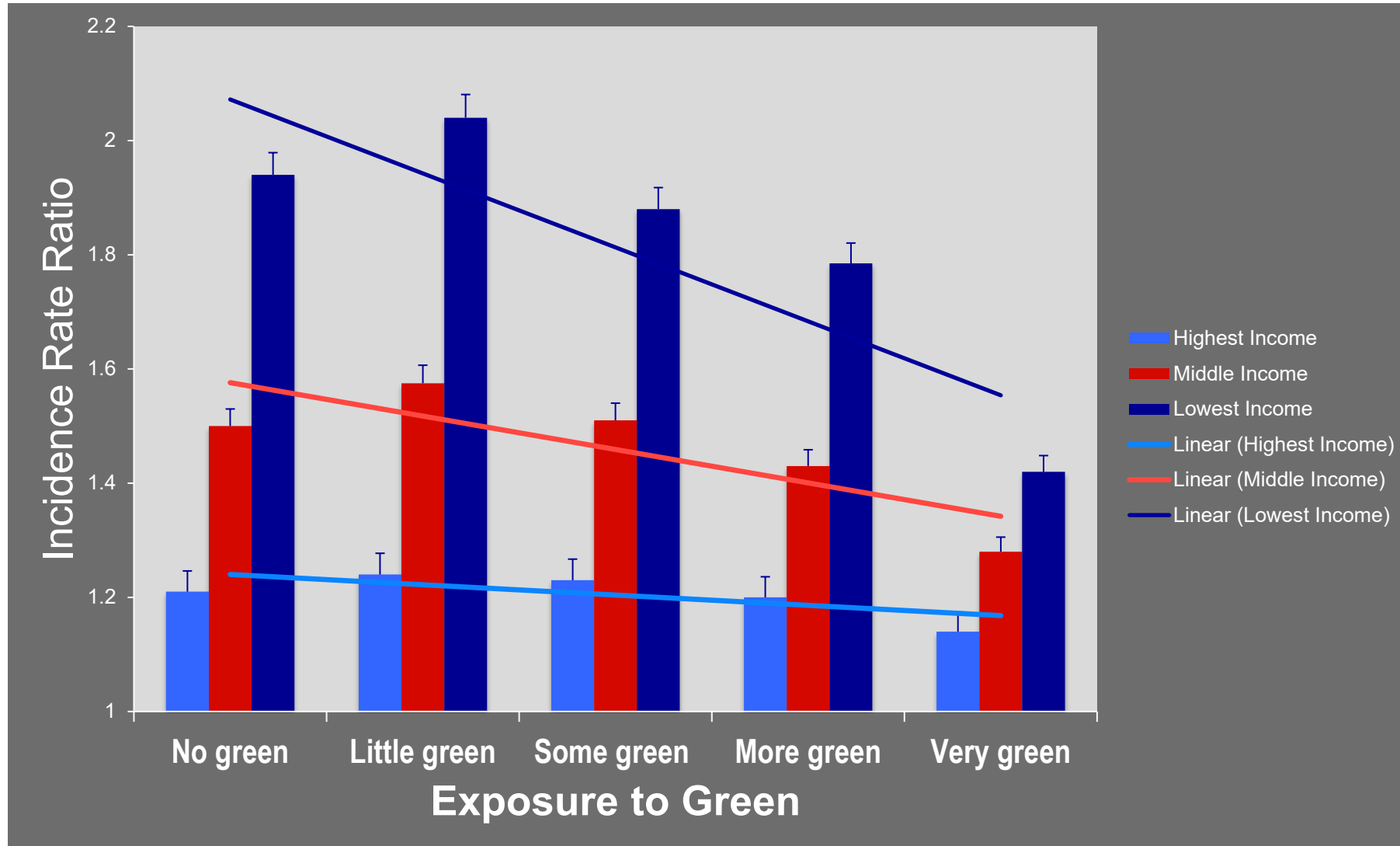


Greater subjective well-being.



Greater happiness.

The “equigenic effect”



Mitchell R, Popham F. Effect of exposure to natural environment on health inequalities: an observational population study. *Lancet* 2008;372:1655-60..

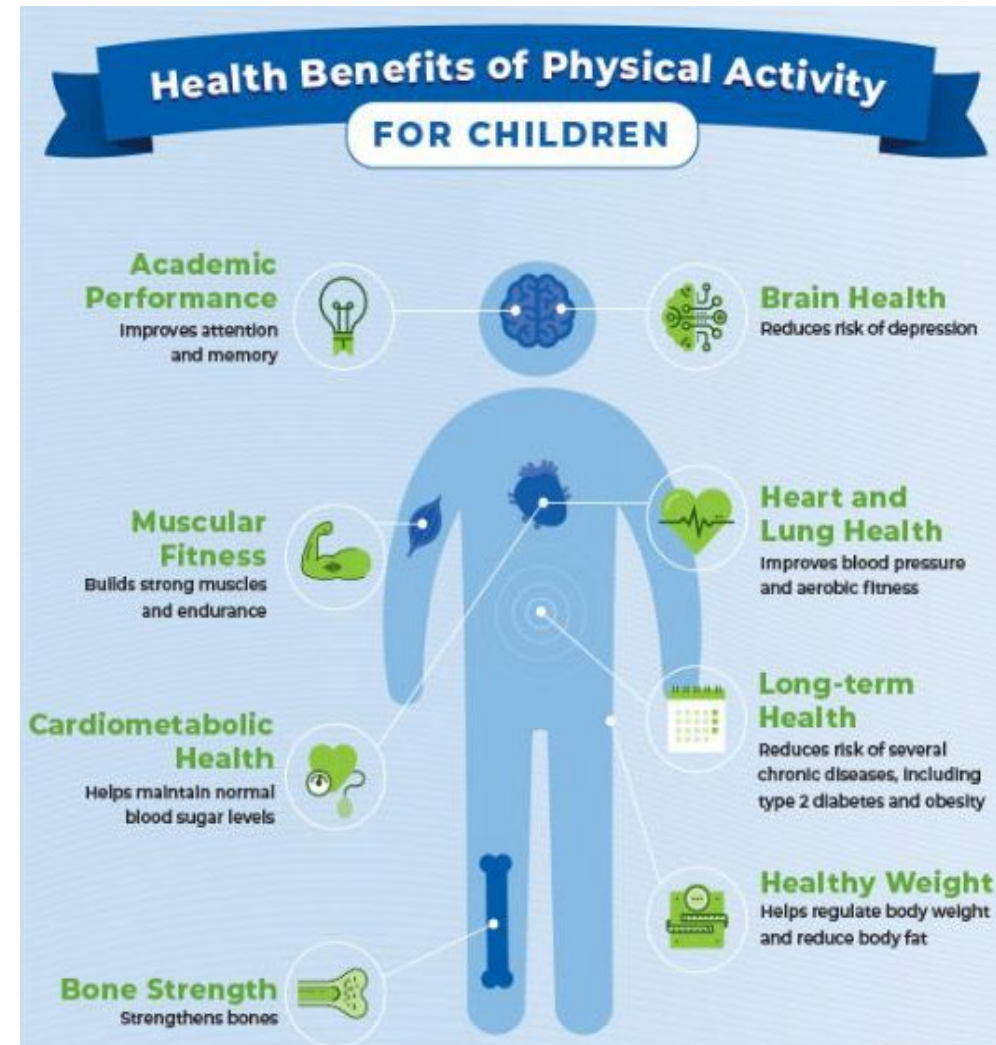
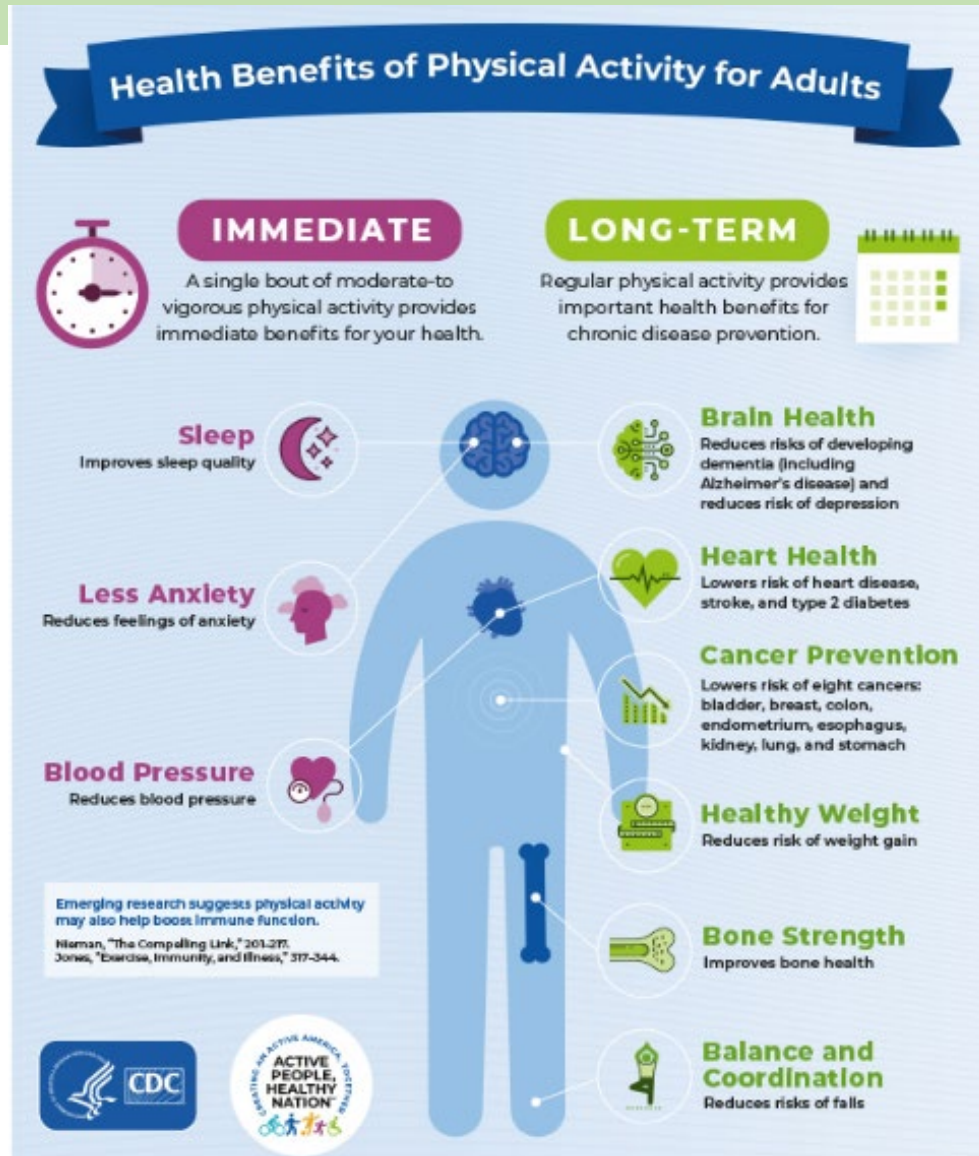
Parks are a setting for nature contact



Parks are a setting for nature contact



Physical activity is good for health





<https://www.cdc.gov/physicalactivity/basics>

Parks are a setting for physical activity


Physical activity patterns in two differently characterised urban parks under conditions of summer heat

Nadja Kabisch^{a,b,*}, Roland Kraemer^{a,c}






Playground features and physical activity in U.S. neighborhood parks

Deborah A. Cohen^a  , Bing Han^a, Stephanie Williamson^a, Catherine Nagel^b, Thomas L. McKenzie^c, Kelly R. Evenson^d, Peter Harnik^e



Effects of the built and social features of urban greenways on the outdoor activity of older adults

Po-Ju Chang 

Urban park facility use and intensity of seniors' physical activity – An examination combining accelerometer and GPS tracking

Yujia Zhai^a , Dongying Li^b , Chengzhao Wu^a  , Hangbin Wu^c 

Access to parks and physical activity: An eight country comparison

Jasper Schipperijn^a  , Ester Cerin^{b,c}, Marc A Adams^d, Rodrigo Reis^{e,f}, Graham Smith^g, Kelli Cain^h, Lars B Christiansen^a, Delfien van Dyck^{i,j}, Christopher Gidlow^k, Lawrence D Frank^l, Josef Mitáš^m, Michael Pratt^h, Deborah Salvo^{n,o}, Grant Schofield^p, James F Sallis^h

What promotes physical activity in parks?

- Access
- Going there (safety, belonging)
- Facilities (playing fields, paths)
- Amenities (nature, shade, benches)
- Programming
- Maintenance

These differ across ages, demographics.

We have a problem with...

...loneliness



Loneliness

THE STATE OF LONELINESS IN AMERICA

1:2

NEARLY HALF of Americans report sometimes or always **feeling alone** (46%) or **left out** (47%).

1:4

ONE IN FOUR Americans (27%) rarely or never feel as though there are people who really understand them.

2:5

TWO IN FIVE Americans sometimes or always feel that their relationships are not meaningful (43%) and that they are isolated from others (43%).

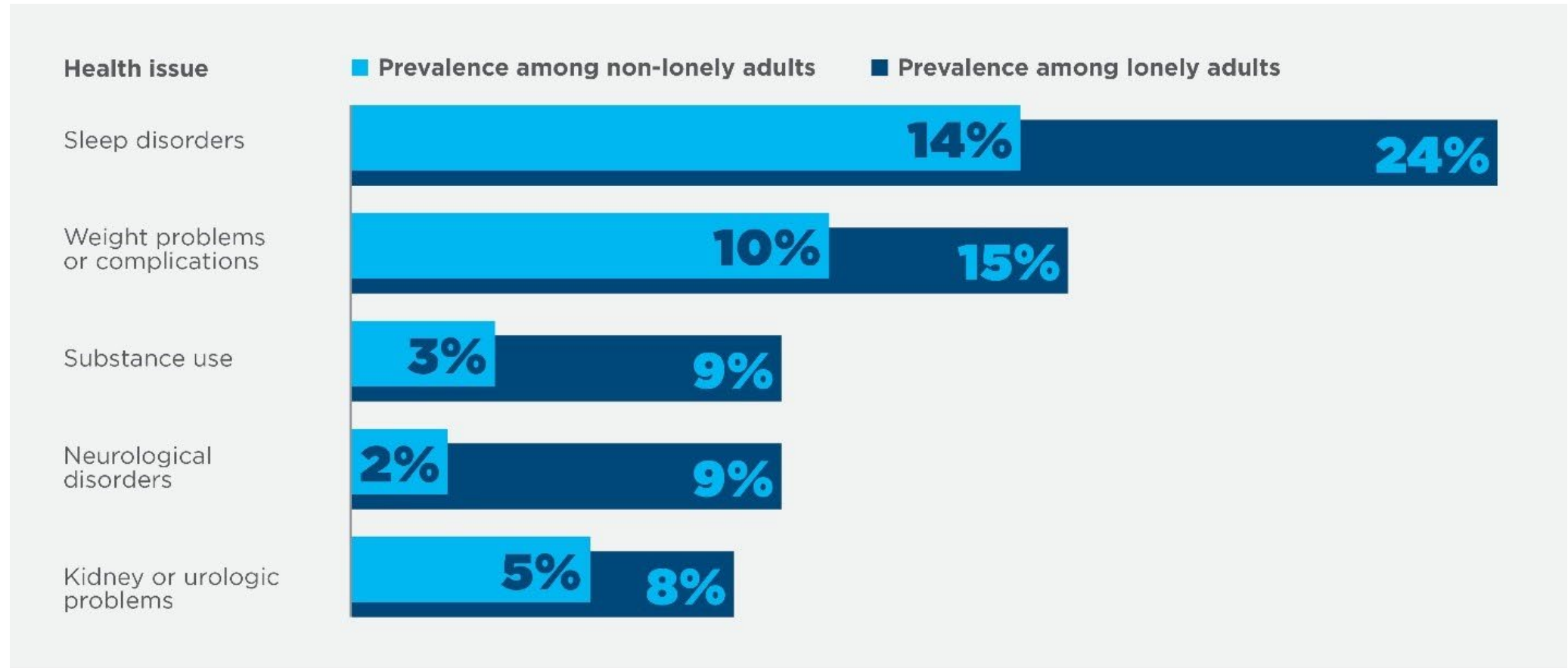
1:5

ONE IN FIVE people report they rarely or never feel close to people (20%) or feel like there are people they can talk to (18%).

1:2

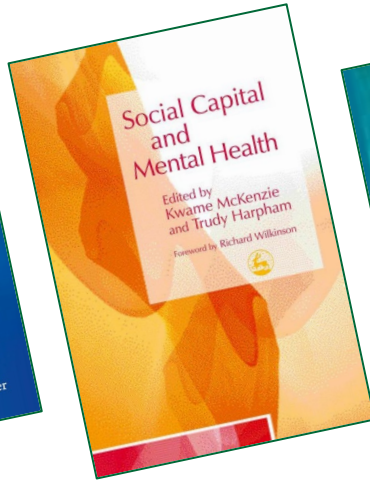
ONLY AROUND HALF OF AMERICANS (53%) have meaningful in-person social interactions, such as having an extended conversation with a friend or spending quality time with family, on a daily basis.

Loneliness is bad for health



Source: Morning Consult survey of 2,496 U.S. adults, December 13–19, 2021; commissioned by Cigna Corporation.

Social connections are good for health



Social Capital as a Positive Social Determinant of Health: A Narrative Review

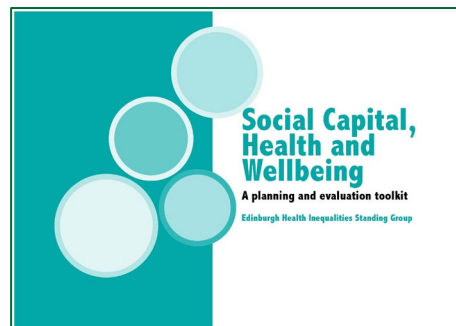
Carol Duh-Leong, MD, MPP • Benard P. Dreyer, MD • Terry T-K Huang, PhD, MPH, MBA • ...
Suzy Tomopoulos, MD • Cecilia Di Caprio, MPH • H. Shonna Yin, MD, MS • Show all authors

Annual Review of Public Health

Social Connection as a Public Health Issue: The Evidence and a Systemic Framework for Prioritizing the “Social” in Social Determinants of Health

Julianne Holt-Lunstad

Department of Psychology, Brigham Young University, Provo, Utah, USA;
email: julianne_holt-lunstad@byu.edu



Health benefits of social connections:

- Longer life
- Less cardiovascular disease
- Less frailty in elders
- Less risk of respiratory infections
- Less dementia
- And more...

Holt-Lunstad J. Social connection as a public health issue: the evidence and a systemic framework for prioritizing the “social” in social determinants of health. *Ann Rev Public Health*. 2022;43(1):193-213.
Morina N, Kip A, Hoppen TH, Priebe S, Meyer T. Potential impact of physical distancing on physical and mental health: a rapid narrative umbrella review of meta-analyses on the link between social connection and health. *BMJ Open*. 2021;11(3):e042335.

Parks are a setting for social connections

The management of urban parks and its contribution to social interactions

Arlinda Hajzeri 

The contribution of local parks to neighbourhood social ties

Aleksandra Kaźmierczak *



Urban green spaces for the social interaction, health and well-being of older people— An integrated view of urban ecosystem services and socio-environmental justice

Friederike Enssle^{a,*}, Nadja Kabisch^{a,b}

Cultivating social capital in diverse, low-income neighborhoods: The value of parks for parents with young children

Lauren E. Mullenbach^{a,*}, Lincoln R. Larson^b, Myron F. Floyd^b, Oriol Marquet^c, Jing-Huei Huang^{b,d}, Claudia Alberico^{b,d}, S. Scott Ogletree^e, J. Aaron Hipp^{b,d}

Linking green space to neighborhood social capital in older adults: The role of perceived safety

Andy Hong^a  , James F. Sallis^b, Abby C. King^c, Terry L. Conway^b, Brian Saelens^d, Kelli L. Cain^b, Eric H. Fox^e, Lawrence D. Frank^a

What promotes socializing in parks?

- Access
- Going there (safety, belonging)
- Longer visits > shorter visits
- Amenities (nature, shade, benches)
- Programming
- Maintenance

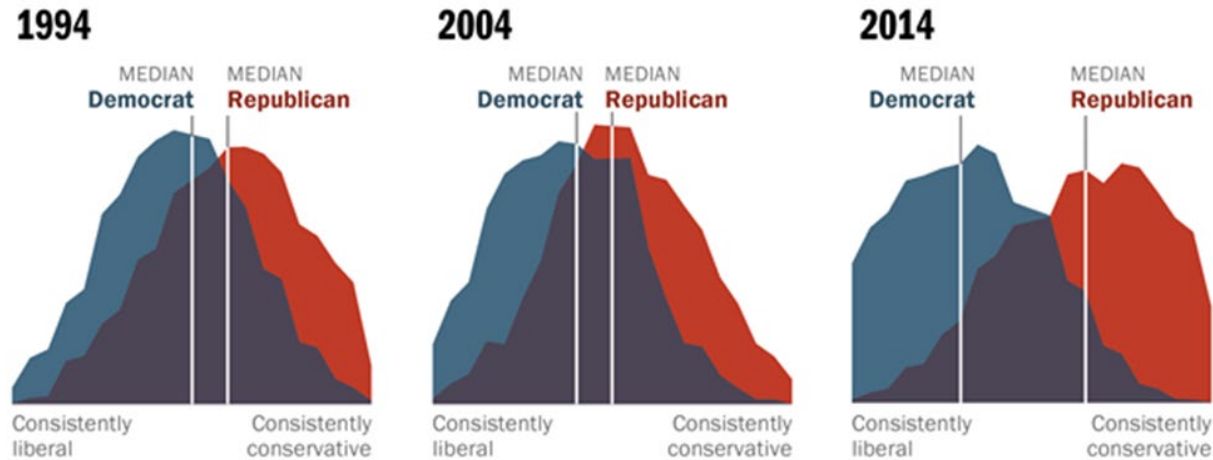
These differ across ages, demographics.

We have a problem with...

...polarization

Democrats and Republicans More Ideologically Divided than in the Past

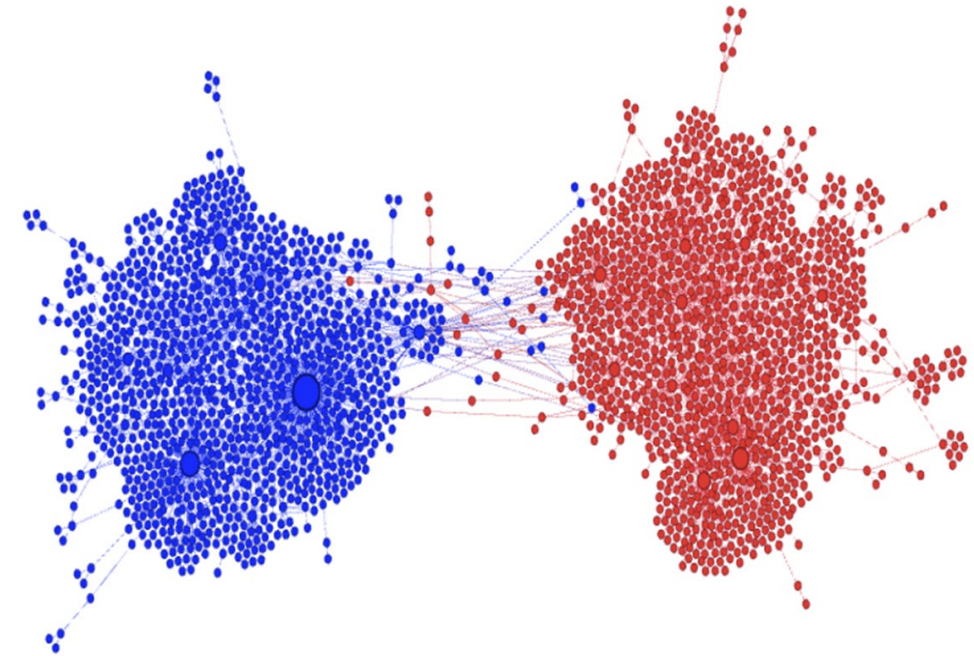
Distribution of Democrats and Republicans on a 10-item scale of political values



Source: 2014 Political Polarization in the American Public

Notes: Ideological consistency based on a scale of 10 political values questions (see Appendix A). The blue area in this chart represents the ideological distribution of Democrats; the red area of Republicans. The overlap of these two distributions is shaded purple. Republicans include Republican-leaning independents; Democrats include Democratic-leaning independents (see Appendix B).

PEW RESEARCH CENTER



We have a problem with...

...racism



Divisions bedevil our nation

How race and religion have polarized American voters

U.S. is polarizing faster than other democracies, study finds

3 In 10 Americans Named Political Polarization As A Top Issue Facing The Country

How America's identity politics went from inclusion to division

America Is Exceptional in Its Political Divide


Identity Politics: Friend or Foe?

HOW RACIAL IDENTITY AND POLARIZATION COULD INFLUENCE THE ELECTION

America Has Split, and It's Now in 'Very Dangerous Territory'

Parks and greenspace can help bring people together

Can urban parks bridge deep divides? Assessing the effects of inter-racial social interaction in parks and public spaces on trust

Lauren E. Mullenbach^{a*} , Andrew J. Mowen^a, Birgitta L. Baker^a, and Sonja A. Wilhelm Stanis^b 

Exploring the conditions that promote intergroup contact at urban parks

Samantha L. Powers^a , Alan R. Graefe^a, Jacob A. Benfield^b, Benjamin Hickerson^c, Birgitta L. Baker^a, Lauren E. Mullenbach^d , and Andrew J. Mowen^a

The power of parks: How interracial contact in urban parks can support prejudice reduction, interracial trust, and civic engagement for social justice

Sammie L. Powers^{a,*}, Nicole Webster^b, Jennifer P. Agans^c, Alan R. Graefe^c, Andrew J. Mowen^c

Engagement, representation, and safety: Factors promoting belonging and positive interracial contact in urban parks

Samantha L. Powers^{a,*}, Nicole Webster^b, Jennifer P. Agans^c, Alan R. Graefe^c, Andrew J. Mowen^c

What promotes positive intergroup contact in parks?

- Sense of welcome and belonging
- Engagement and inclusion
- Representation
- Sense of ownership

We have a problem with...

...unhappiness



Happiness in the U.S. (adults)

Figure 5.1: General happiness, U.S. adults, General Social Survey, 1973-2016



Source: *World Happiness Report 2019*.
<https://worldhappiness.report/ed/2019/the-sad-state-of-happiness-in-the-united-states-and-the-role-of-digital-media/>

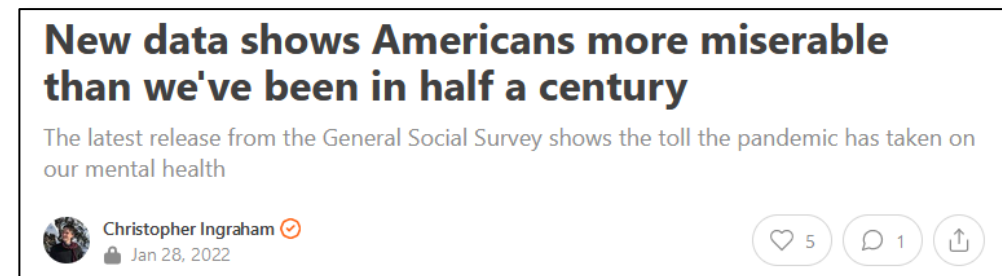
Happiness in the U.S. (children)

Figure 5.2: General happiness, U.S. 8th, 10th, and 12th graders (ages 13 to 18), Monitoring the Future, 1991-2017



Source: *World Happiness Report 2019*.
<https://worldhappiness.report/ed/2019/the-sad-state-of-happiness-in-the-united-states-and-the-role-of-digital-media/>

Happiness in the U.S.



Parks help make people happier

Visitors to urban greenspace have higher sentiment and lower negativity on Twitter

Aaron J. Schwartz^{1,2,3} | Peter Sheridan Dodds^{1,4} | Jarlath P. M. O'Neil-Dunne^{1,3} | Christopher M. Danforth^{1,2,4} | Taylor H. Ricketts^{1,3}

Urban green space and happiness in developed countries

Oh-Hyun Kwon^{1†}, Inho Hong^{2†}, Jeasurk Yang³, Donghee Y. Wahn⁴, Woo-Sung Jung^{1,5,6*} and Meeyoung Cha^{7,8*}

'Nature makes people happy, that's what it sort of means:' children's definitions and perceptions of nature in rural Northwestern Ontario

Suzanne Tillmann, Brenton Button, Stephanie E. Coen & Jason A. Gilliland

Parks, Green Space, and Happiness: A Spatially Specific Sentiment Analysis Using Microblogs in Shanghai, China

Siqi Lai and Brian Deal

Gauging the happiness benefit of US urban parks through Twitter

Aaron J. Schwartz^{1,2,3,4,5*}, Peter Sheridan Dodds^{3,4,6}, Jarlath P. M. O'Neil-Dunne^{2,3,5}, Taylor H. Ricketts^{2,5}, Christopher M. Danforth^{2,3,4,7}

Public spaces and happiness: Evidence from a large-scale field experiment

Francisco Benita, Garvit Bansal, Bige Tunçer



We have a problem with...

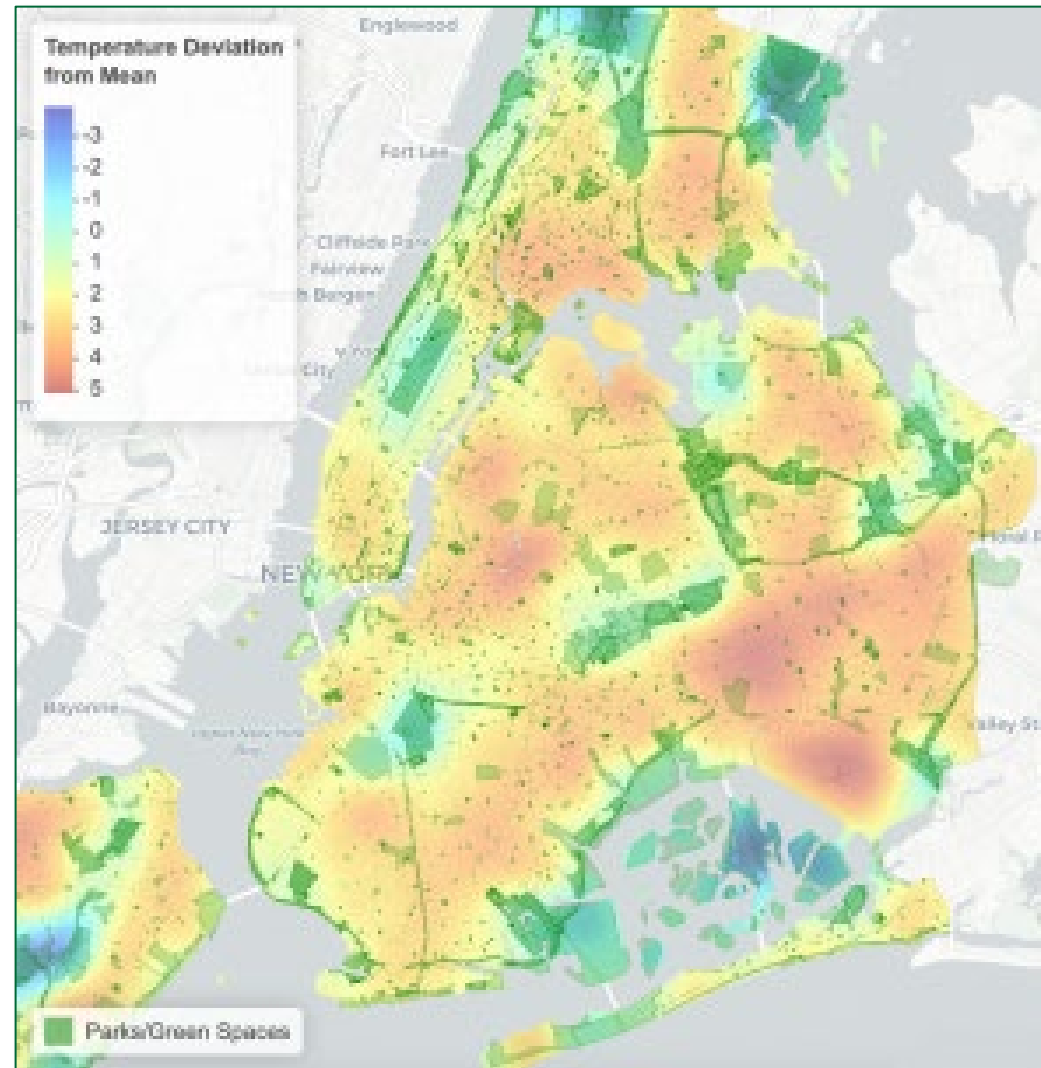
...climate change




Parks help with climate resilience



Parks help with climate resilience



So...parks and greenspace help by...

- 
- Promoting physical and mental health
 - Reducing loneliness
 - Bringing people together across divides
 - Making people happier
 - Advancing climate resilience

Some action ideas



"Never, ever, think outside the box."

Some action ideas

Parks are good for health.



Health investments for parks make sense.

Some action ideas

Parks are good for health.



Health investments for parks make sense.



Health programs in parks make sense.

Some action ideas

Parks are good for health.	➔	Health investments for parks make sense.
	➔	Health programs in parks make sense.
Parks work best if people go there.	➔	It's not just about park <i>creation</i> , it's about sense of <i>belonging</i> and <i>safety</i> , and park <i>maintenance and programming</i> .

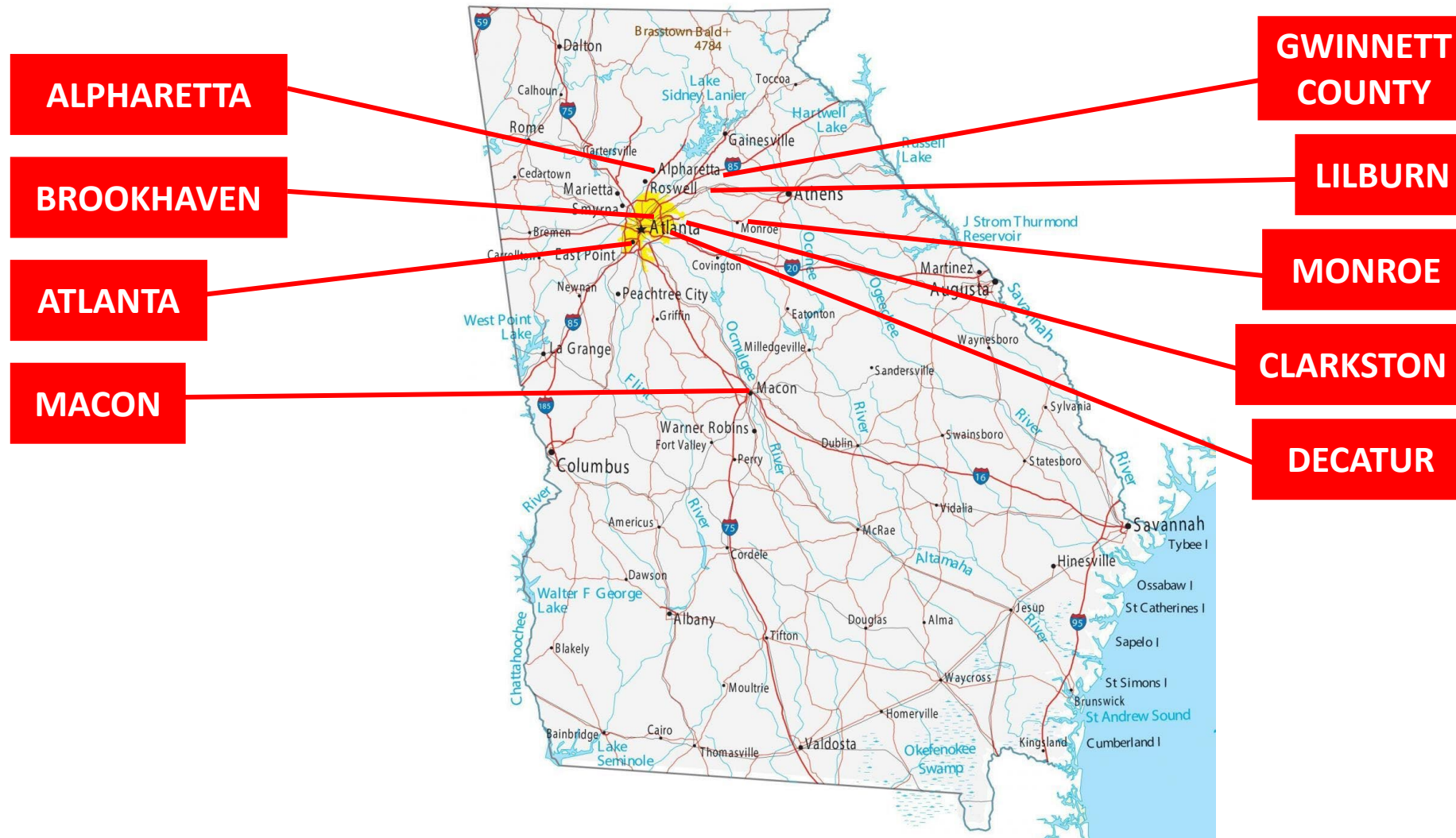
Some action ideas

Parks are good for health.	➔	Health investments for parks make sense.
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Parks were invaluable during the pandemic.	➔	A robust park system = pandemic preparedness.

Some action ideas

Parks are good for health.	➔	Health investments for parks make sense.
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Parks were invaluable during the pandemic.	➔	A robust park system = pandemic preparedness.
Parks are equigenic.	➔	Park equity = health equity.

Georgia 10-Minute Walk cities



Some action ideas

Parks are good for health.	➔	Health investments for parks make sense.
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Parks work best if people go there.	➔	It's not just about park <i>creation</i> , it's about sense of <i>belonging</i> and <i>safety</i> , and park <i>maintenance and programming</i> .
Parks were invaluable during the pandemic.	➔	A robust park system = pandemic preparedness.
Parks are equigenic.	➔	Park equity = health equity.
Parks can drive green gentrification.	➔	Link parks with holistic community development.

Summary

Parks are a public health superpower:

- Promote physical and mental health
- Reduce loneliness
- Bring people together across divides
- Make people happier
- Advance climate resilience



Summary

To maximize the health benefits:

- Invest health dollars in parks.
- Implement health programming in parks.
- Fund park maintenance and operations.
- Make everybody feel safe and welcome.
- Include parks in pandemic preparedness.
- Establish, maintain, and operate parks through an equity lens.
- Embed parks in community development strategies.



