

Key Points

- » Social isolation and loneliness are prevalent in the population.
- » There is robust evidence that social isolation and loneliness significantly increase risk and, conversely, that social connection reduces risk for premature mortality.
- » Social isolation and loneliness are also associated with increased morbidity and dysregulation of various biomarkers of health, such as inflammation.
- » Public health policy affecting social connectedness should be considered across all governmental sectors including health, transportation, education, housing, employment, food and nutrition, and environment.
- » More evidence is needed to establish effective interventions aimed at reducing social isolation and loneliness and lessening their health impacts.

SOCIAL ISOLATION AND HEALTH

Social isolation is a significant contributor to morbidity and early mortality. Greater prioritization of intervention science and policy is needed to address the public health burden.

Social isolation and loneliness are increasingly recognized as important public health issues. Evidence of social isolation's negative effect on health is robust, and there is a great need for the expansion of effective interventions and policies to reduce isolation and its health consequences. Indeed, as described in a Health Affairs [blog post](#) accompanying this brief, with the 2020 COVID-19 pandemic and the associated recommendations regarding sheltering in place, self-isolation, and social distancing, these consequences may be more salient. This brief defines social isolation and loneliness, reviews their prevalence and likely causes, discusses evidence connecting them to health, and outlines potential policy interventions and challenges to be addressed.

Defining Terms

Social isolation and loneliness are both terms that denote a degree of social disconnection. [Social isolation](#) is an objective state marked by few or infrequent social contacts. [Loneliness](#) is the subjective and distressing feeling of social isolation, often defined as the discrepancy between actual and desired level of social connection.

Social connection and [connectedness](#) encompass a variety of terms used in the scientific literature (for example, social support, social integration, social cohesion) that document the ways that being physically or emotionally connected to others can influence health and well-being. Although strong social connection is protective to health, a lack of social connection carries risk. The importance and magnitude of the risks associated with social isolation and loneliness are gaining recognition, with a former US surgeon general referring to them as an [epidemic](#).

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Prevalence And Risk Factors

A significant portion of the population may be affected by loneliness or social isolation. In 2018, national surveys performed by the Henry J. Kaiser Family Foundation, AARP, and Cigna examined the prevalence of loneliness, which they

estimated to be 22, 35, and 47 percent, respectively. Discrepancies may be a result of differences in sample composition and measurement. Even by the most conservative estimates, loneliness affects one in five adults. Because population-level loneliness data have not been routinely collected, it is difficult to determine whether loneliness is increasing in prevalence. However, using the same methodology as for its 2018 survey, in 2020 Cigna reported that loneliness among Americans increased to 61 percent in 2019, up from the previously reported 47 percent.

Unlike loneliness, data on several markers of social isolation are routinely collected in the US Census, allowing for confidence in prevalence rates and tracking over time. For example, more than a quarter of the US population lives alone, and average household size is shrinking. Fewer Americans are getting married, having children, and participating in social activities such as religion and volunteering than in previous decades. Further, nationally representative studies indicate that the average size and diversity of roles within core social networks (spouse, friend, coworker, acquaintance, and so forth) have declined. Although all these factors are potential markers of social isolation, they may not necessarily cause it (for example, one can live alone but have a large social network). Further, many adults experience multiple markers, making precision of prevalence rates more

being lonely than those who are satisfied. In contrast, good social support, meaningful daily interactions, being partnered, and low social anxiety are strong protective factors against loneliness. Factors that prevent people from engaging with others, such as long-term illness, disabilities, transportation issues, unemployment, or exposure to domestic or community violence, may increase social isolation and loneliness.

Those younger than fifty are more likely to report loneliness than those age fifty and older. The 2020 Cigna survey found that 79 percent of Generation Z and 71 percent of millennials are lonely versus 50 percent of boomers. Thus, precipitating factors described earlier may differ across age groups. Importantly, despite this relative difference, loneliness was found across all ages and circumstances.

■ Evidence Linking Social Isolation To Health

This section highlights evidence linking social isolation and loneliness to mortality and morbidity and then reviews evidence supporting the existence of biological and behavioral pathways by which social isolation and loneliness have these effects.

MORTALITY

The most robust evidence on social connection, isolation, loneliness, and health comes from studies examining mortality as an outcome. During the past four decades a sizable body of evidence has emerged, including hundreds of large-scale prospective epidemiological studies and multiple meta-analyses. This evidence documents that being socially connected significantly reduces risk for premature mortality from all causes. For example, a meta-analysis of 148 prospective studies found that social connection (averaged across a variety of measures) increases odds of survival by 50 percent. Meta-analytic data also indicate that experiencing loneliness or social isolation increases risk for earlier death (by 26 percent for loneliness, 29 percent for social isolation, and 32 percent for living alone). The magnitude of these effects on risk for death rivals that of other well-established risk factors for mortality including obesity, physical inactivity, and air pollution (see figure 1 of this 2017 review). The effect on mortality is found

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difficult to estimate. Nonetheless, evidence points to a significant portion of the American population as socially disconnected in some way, and signals that at least some markers are increasing.

What factors can potentially trigger loneliness or social isolation? In a 2019 national loneliness survey, mental and physical health problems, living alone, or not living near family increased the likelihood of becoming lonely. Those who are dissatisfied with their family and social life are also more likely to report

among both older adults and the broader population and is consistent across gender. Aggregate data support a [continuum](#) of risk rather than a threshold effect for mortality.

Importantly, these effects are independent of age and initial health status, [ruling out reverse causality](#). They are also independent of various potential confounders, are [replicated](#) across more than 150 studies, provide [converging evidence](#) across a variety of samples and measurement approaches, and establish direc-

ics, and health practices. Among mental and cognitive health outcomes, meta-analytic data support the influence of poor social connection on [risk for depression](#), [poorer cognitive function](#), and [dementia](#).

In addition to the effects on physical health and disease, there is recent evidence that social isolation significantly contributes to deaths of despair such as drug- and [alcohol-related deaths](#) and [suicide](#).

PATHWAYS

Research supports [biological and behavioral health pathways](#) that explain observed associations between social connection and health outcomes. Behavioral pathways include [better sleep](#), [greater physical activity](#), increased [likelihood of medical screenings](#), and improved [medical adherence](#). There is also growing evidence, including [several reviews](#), supporting biological mechanisms such as cardiovascular, endocrine, and immune markers. For example, [longitudinal data](#) from four nationally representative samples demonstrate that social connection has a dose-response effect on C-reactive protein, systolic and diastolic blood pressure, waist circumference, and body mass index within each life stage. Indicators of social connections have been associated with lower risk for [physiological dysregulation](#) and lower levels of [inflammation](#), whereas social isolation and loneliness are associated with elevations in [some markers of systemic inflammation](#).

■ A Proposed Policy Agenda

Given the strength of the [evidence](#) of the health effects of social connection and isolation, there is a need for a robust policy agenda to address this public health issue. The following are key elements of such an agenda.

AWARENESS, EDUCATION, AND NATIONAL GUIDELINES

The health risks of social isolation and loneliness are currently [underrecognized](#). Major health organizations and other stakeholders should explicitly [educate and increase awareness](#) among professionals and the public. Indeed, in [highlights](#) from a [2020 consensus report](#), the National Academies of Sciences, Engineering, and Medicine call for “[g]uidance for health professional schools, training programs,

“Loneliness [is] found across all ages and circumstances.”

tionality. There is also now sufficient evidence that social disconnection [meets the Bradford Hill Criteria](#), which were used to establish smoking as a causal risk factor for mortality from all causes.

MORBIDITY

Social connection and isolation also significantly influence other major physical, mental, and cognitive health outcomes. In physical health, the strongest evidence relates to cardiovascular health. For example, cumulative [meta-analytic](#) evidence indicates that poor social connection increased risk of developing heart disease by 29 percent and risk for stroke by 32 percent. Although fewer studies examine other outcomes, there is also evidence that poorer social connection is associated with [poorer general health](#)

“The magnitude of [isolation’s] effects on risk for death rivals that of... obesity, physical inactivity, and air pollution.”

and well-being, as well as with newly and previously diagnosed [type 2 diabetes](#). Social connection and isolation even influence the probability of [developing a cold](#) independent of baseline immunity, demograph-

associations, and others for improving awareness of the health impacts of social isolation and loneliness.”

Awareness and education must be supported by robust national guidelines. There are currently national health guidelines around various lifestyle factors (for

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example, [nutrition](#), [physical activity](#), and [sleep](#)) that are known to influence health. [It is time](#) for social connection and isolation to be added to that list.

Guidelines about social connection should be evidence-based, subject to periodic revision as new evidence becomes available, and [take into consideration](#) the structural, functional, and quality components of social connection. Guidelines may include recommendations of frequency of social activity (for example, most days), as well as type (for example, face-to-face). Such guidelines can form the basis of federal social policy and programs; help guide local, state, and national health promotion and disease prevention initiatives; and inform various organizations and industries that develop and market products and services to influence sociality.

National health guidelines would support efforts to increase awareness and education in many sectors. For example, guidelines and the evidentiary base for them could become part of medical training and K–12 public school health education. Guidelines could facilitate the inclusion of social connection as part of routine health screening and could form the basis for actionable messages and recommendations that the public may use to guide personal lifestyle changes.

FOCUSING ON THE HEALTH CARE SECTOR

The health care sector, in particular, plays a critical role in addressing social isolation. The National Academies of Sciences, Engineering, and Medicine have recently published several relevant reports that make recommendations to guide policy in this area. For example, in [highlights](#) from a [2020 report](#), the National Academies recommend education and

training related to social isolation and loneliness for the health care workforce, as well as “[i]nclusion of social isolation and loneliness in U.S. Department of Health and Human Services major health strategies.”

A [2019 report](#) recommends integrating social care into the delivery of health care. A [2017 report](#) identifies social relationships as one of the five social risk factors to account for in Medicare payments. A [2016 report](#) recommends the development of a framework to “align the education, health, and other sectors, in partnership with communities, to educate health professionals in the social determinants of health.” Finally, a [2015 report](#) recommends assessment of social connection and isolation for inclusion in all electronic health records.

SOCIAL IN ALL POLICIES

Although change in the health care sector is critical, social isolation can also be addressed through cross-cutting policy change in many other sectors. The World Health Organization has a framework of [Health in All Policies](#). Many stakeholders in the US have adopted [similar approaches](#), which seek to improve “the health of all people by incorporating health considerations into decision-making across sectors and policy areas.” Although social connection and isolation should be part of these existing approaches, at this time, the focus is primarily on other social determinants of health. Thus, a parallel framework of Social in All Policies could be adopted, recognizing that social well-being is influenced by all sectors of society, including health, transportation, housing, employment, education, food and nutrition, and environment. This framework could guide systematic evaluation of current policy that may facilitate or hinder social connection.

Exhibit 1 provides examples of current or possible policies to promote social connection across multiple sectors. For example, transportation that is safe, reliable, and affordable is key to connecting socially and accessing community resources. Policy focused on transportation can influence the attainment of social goals within other sectors (health, education, food and nutrition, and environment) and helps us identify potential barriers and interventions.

Another illustrative example is in the employment sector, as research and a recent [survey](#) suggest

that the workplace may contribute significantly to loneliness and social isolation. Most adults spend more waking hours working than any other activity; thus, the type of work environment (for example, remote only, in-person only, and occasional telecommuting) and the extent to which relevant policies (for example, flexibility in hours, leave) hinder or facilitate social connection can potentially influence health outcomes.

Evidence For Interventions

Although there have been some promising interventions to improve social connectedness and health, a 2020 National Academies of Sciences, Engineering, and Medicine [consensus committee report](#) concluded “the overall quality of the evidence for specific clinical and public health interventions for social isolation and loneliness... is mixed.” Another recent [review](#)

reached a similar conclusion. Furthermore, among interventions that decrease social isolation or loneliness, not all also subsequently reduce health risk. For example, the [Enhancing Recovery in Coronary Heart Disease Patients](#) randomized clinical trial sought to reduce depression and low perceived social support as a means of reducing mortality and recurrent myocardial infarction. Using a cognitive behavioral therapy-based intervention among admitted patients with acute myocardial infarction, the intervention significantly reduced social isolation, but had no effect on cardiovascular outcomes. Indeed, many interventions only assess loneliness or social participation and do not examine whether the intervention results in health-related outcomes, whether positive or negative.

It is also critical that interventions avoid unintended negative consequences. For example, interventions

EXHIBIT 1 SOCIAL IN ALL POLICIES APPLICATIONS

Sector	Potential federal departments/agencies	Examples of existing or possible policy to promote social connection
Health	Department of Health and Human Services, Centers for Disease Control and Prevention, Health Resources and Services Administration	Social prescribing, national social health guidelines, inclusion of social connection and isolation in electronic health records , specific goals for Healthy People 2030
Transportation	Department of Transportation	Inclusive and affordable network of public transportation to enable people to connect to their community (work, home, school, hospitals, shopping, entertainment)
Education	Department of Education	Inclusion of social connection and isolation in the K–12 health curriculum, use of public schools for social spaces during the evenings, weekends, summer
Housing	Department of Housing and Urban Development	Diversify housing design to incorporate communal and work spaces to encourage social interaction and reduce commute times, urban design that balances public and private space, housing to better serve changing demographics
Employment	Department of Labor	Family-friendly policies (for example, paid family leave, domestic care coverage), promotion of work–life balance (for example, flexible schedules, telecommuting), workforce center facilitation of community groups (for example, language training for immigrants) to forge community links
Food and nutrition	Department of Agriculture, Food and Drug Administration	Support food programs that bring people together, such as Meals on Wheels, local community gardens, farmers markets; programs that minimize food waste and bring food to underserved communities
Environment	Environmental Protection Agency	Inclusive green growth programs; programs that bring people together, such as recycling and repurposing programs, botanic gardens ; water-sharing, ride-sharing programs.

Source: Author's analysis.

may create dependencies that are not sustainable, such as when the friendly visitor who is part of the intervention stops visiting. Interventions that increase social contact without regard to the quality of that contact may also potentially increase social conflict or even abuse. Thus, to increase the success of interventions, we must systematically evaluate what works best for whom in what context and when.

The previously noted 2020 National Academies of Sciences, Engineering, and Medicine [report](#) indicates that the following evaluation components are necessary to develop a more robust evidence base for interventions: a theoretical framework that drives the approach, appropriate choice of measure, specific target population, scalability, sustainability, and data sharing. To date, few interventions to improve health by improving social connectedness have met all of these criteria.

■ Ongoing Challenges

Despite robust evidence of the health impacts of social connection and isolation, there are several challenges that must be addressed in identifying effective interventions.

MEASUREMENT

There is an ongoing need for the development of a simple but accurate nomenclature and measurement. Evidence points to the need for a measurement approach that is multifactorial, but current tools are primarily limited to single components (for example, solely loneliness or social isolation). The development of a [multifactorial](#) risk score that takes into account both structural and functional dimensions of and quality of social relationships is needed to [adequately assess risk](#).

UNDERSTANDING DIGITAL SOCIAL CONNECTION

During the past decade, personal technology, including smartphones and social media, has significantly influenced the way people socialize, with the potential for both harms and benefits. The number of available tools and resources is rapidly expanding, but the technology is outpacing the research on its impacts. The public and private sectors must continually monitor and evaluate emerging technologies to maximize the efficiency and efficacy of their efforts. As with other public goods and services, if evidence emerges of established harms associated with digital tools and environments, policy and regulations must be put in place to safeguard public health and safety. Similarly, if the evidence establishes clear strengths, policy must be put in place to ensure inclusivity and minimize disparities of access.

UNDERSTUDIED POPULATIONS

Understudied populations must be adequately represented in research, as well as in potential solutions for social isolation and loneliness and their health sequelae. We currently have less evidence on the health effects of social isolation and loneliness on underserved and at-risk [populations](#) (for example, low-income, LGBTQ, and minority race and ethnicity populations; those who face unique barriers to health and health care; and so forth). Further, inclusion is also needed when testing the effectiveness of interventions.

■ Conclusion

Although critics may argue that prioritizing social isolation as a health issue will divert limited resources from other pressing issues (for example, addiction, violence, poverty), addressing social isolation and loneliness may also help us address these and other concerns.

HealthAffairs

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