If Loneliness Is an Epidemic, How Do We Treat It?

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Credit...Yann Kebbi

By Eleanor Cummins and Andrew Zaleski

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Stephanie Cacioppo thought she would be single forever. "I was an only child," says Dr. Cacioppo. "I always thought that was my fate to be alone."

Despite that, Dr. Cacioppo, a behavioral neuroscientist, dedicated herself to studying the science of romance. In 2011, when least expecting it, she met the love of her life. His name was John Cacioppo, a twice-divorced neuroscientist and one of the world's leading researchers on loneliness.

After they married, in a joyfully spontaneous ceremony in Paris, they were hardly ever apart and even conducted research together at the University of Chicago. They were known among their academic peers by complementary monikers: She was Dr. Love; he was Dr. Loneliness. But in 2018, at age 66, he died, very likely from complications of salivary gland cancer. She was only 43. "They not only shared the same office (the sign on the door said 'The Cacioppos')," his New York Times obituary read, "but also the same desk."

In the wake of her husband's death, she experienced a crushing loneliness. So she decided to apply the couple's research to her life while using herself as a case study for further research into solutions. She reached out to friends, ran six miles a day and picked up doubles tennis, all of which she chronicled in her 2022 memoir, "Wired for Love." It's an effort that Dr. Cacioppo, now an adjunct assistant professor of behavioral neuroscience at the University of Oregon, is still undertaking, with the goal of studying how to prevent loneliness and restore strong connections.

More than one-fifth of Americans over 18 say they often or always feel lonely or socially isolated. Among older adults, social isolation has been linked to various adverse physical and psychological effects, including increased risk of dementia and heart disease. "Addressing the crisis of loneliness and isolation is one of our generation's greatest challenges," wrote Surgeon General Vivek Murthy in The Times in April, discussing a national framework for rebuilding social connection to combat what he called an "epidemic" of loneliness.

If loneliness is an epidemic, how do you treat it? Given its myriad health consequences, some experts argue it's time to consider new remedies. This calls to mind a trip to the pharmacy to pick up a bottle of pills, but treating loneliness the same way doctors treat high cholesterol isn't exactly the idea here. As a growing body of research indicates, loneliness is a biological phenomenon with far-reaching consequences. Neuroscientists have found that brain signals that should trigger someone to seek social connection are the same ones that, under different circumstances, can turn

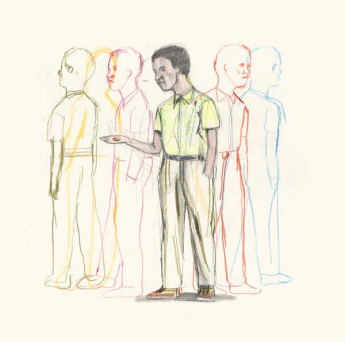
people defensive and vigilant — more apt to hunker down instead of reach out. Under this rubric, loneliness isn't simply a symptom of societal failure to foster deep relationships but rather a wariness that takes root, steadily snowballs and reshapes the brain. Loneliness may be a communal problem, but healing begins with the individual.

"Thinking of loneliness as a clinical problem — I actually think that's an appropriate way to think about the issue," says Daniel Russell, a professor in the department of human development and family studies at Iowa State University. It was Dr. Russell who, in the 1970s, helped develop the U.C.L.A. Loneliness Scale, a 20-item questionnaire still commonly used in research to measure how lonely a person is.

It's not entirely obvious what the medical system can or should do with loneliness. Proposals range from the simple (adding loneliness scales to annual checkups) to the medically far-fetched (a pill for loneliness) and are sure to come with side effects and controversies. Even Dr. Cacioppo, who has dedicated her life to studying human connection, including pharmaceutical solutions for loneliness, questions the value of medicalizing it. (Can you imagine the insurance premiums?) But experts hope to help millions of struggling Americans find their way back to one another. "We are each other's key to a long life and healthy life," she says. "We need to be accountable for the well-being of our friends and teammates and others."

Declaring loneliness an epidemic first requires an understanding of what loneliness is and how it works in the brain. Only when the latest insights into the lonely mind are considered can Americans begin to hope for a solution. Folk wisdom has dictated the terms for too long, but hard science is available.

While sometimes mistaken for social isolation, loneliness is different. Social isolation is an objective state: Are you interacting regularly with other people or not? Loneliness, by contrast, is a paradoxical puzzle — an entirely subjective experience of distress at one's perceived lack of social connection. That can be true whether you're alone most of the time or at the center of a dance floor.



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"You're lonely because the set of relationships you have, your social network, is not meeting your expectations," says Dr. Russell.

People feel lonely for many reasons: relocating for school or work, grieving a spouse, struggling with counterproductive coping mechanisms or even having a natural disposition toward gloom. If these are the causes, then there are at least known remedies to try. Nonetheless, experts feel as if they're banging their heads against a wall. How many times can you give someone the same tired advice to join a club, call a friend or make small talk with a stranger?

Many lonely people not only feel sad; they also feel endangered. Social situations are perceived as a threat, not an invitation. Over the past decade, those who study loneliness have begun to better understand why. Although loneliness is usually understood as an experience of mental anguish, in reality it is "a whole-body affliction," as the historian Fay Bound Alberti writes in "A Biography

of Loneliness." Research suggests chronic loneliness is related to a range of physical and neurological problems, including increased susceptibility to infections and cognitive decline.

In other words, loneliness is more than just a mental struggle. Dr. Cacioppo explains it as a "biological signal that tells us that there is something wrong in our social environment." Compounded over months and years, loneliness can gradually become a self-fulfilling prophecy. And when the emergency sirens are already blaring, it can be difficult to make the changes necessary for a more fulfilling life.

Neuroscience has plumbed the depths of the lonely mind for decades. In 1992, John Cacioppo helped coin the term "social neuroscience." He later co-founded the University of Chicago's Center for Cognitive and Social Neuroscience, where he documented the dangers of loneliness. A steady stream of research has since demonstrated just how much loneliness is manifested in the brain.

"There's lots and lots of evidence" for it, says Dr. Danilo Bzdok, an associate professor in McGill University's department of biomedical engineering. During the first year of the Covid-19 pandemic, he and several colleagues carried out the largest studies to date looking for loneliness markers in the brain — studies they conducted in response to the social isolation people were experiencing. Their work demonstrated that the default network was larger in the brains of lonely people. This network is an area seated deep within the brain that lights up when we think about others, especially with respect to how we interpret their intentions.

Research has shown that a lonely brain is transformed. Neurotransmitters important for bonding and social connection go haywire. The hypothalamic-pituitary-adrenal axis, responsible for modulating stress, is hyperactive. The amygdala, which triggers our fight-or-flight response and helps process emotional reactions, is in overdrive: In previous studies, Dr. Cacioppo found that lonely people detect negative or threatening pictures and words in under 400 milliseconds. This might explain not only the sadness that accompanies loneliness but also the palpable sense of danger.

Such changes in the brain may help to explain why lonely individuals perceive their social environment as threatening. "We cannot perceive the world for what it is," Dr. Bzdok says.

Depression, grief, social anxiety — a full-body cascade of what might be termed symptoms of a lonely life — can follow. Dr. Alberti calls loneliness an "emotion 'cluster,'" in which feelings ranging from "anger, resentment and sorrow to jealousy, shame and self-pity" can take hold. For some people, loneliness becomes a self-perpetuating feedback loop and turns chronic. The neuroplastic nature of the brain, its ability to create different structural pathways, can reinforce these changes. But what's important to know is that the brain can also snap back.

Dr. Cacioppo has experienced both ends of this spectrum. "I really wore my solitude as a badge of honor," she says of her early life.

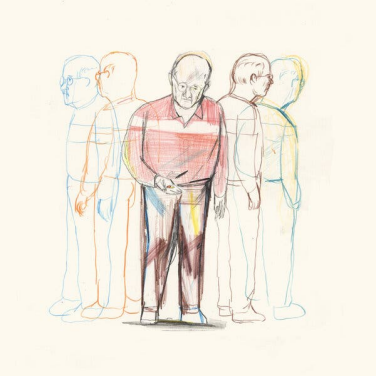
After her husband's death, Dr. Cacioppo continued the couple's research into a pharmaceutical intervention for loneliness in the form of the hormone pregnenolone. It has been shown to reduce stress by calming the amygdala as well as the insula, another area of the brain, which, if dysfunctional, can contribute to a lonely person's hypervigilance to social threats. While it couldn't treat loneliness directly, the hormone, the Cacioppos theorized, might ease symptoms and help people connect again.

From 2017 to 2019, Dr. Cacioppo conducted a trial on the effects of an oral dose of pregnenolone in lonely individuals. She says the preliminary results indicated that self-reported loneliness declined. In other words, the pill was working as intended. But after processing her grief through exercising in the outdoors, she felt the possible side effects of a pill — which might range from worsened sleep quality to cardiovascular problems — could no longer be justified.

"I personally stopped the clinical trial because I think that we could boost pregnenolone and social connections naturally," Dr. Cacioppo says. Walking, meditation, time spent in nature — all of these activities have been shown to produce similar changes to those of her pill, with none of the downsides. So if a pill for loneliness is not the right approach, at least for now, what is?

Dr. Cacioppo's experience suggests a lonely mind might be healed with help from the body. A clinical conception of chronic loneliness, then, most likely takes shape by combining natural remedies as the ones she employed with medical interventions already available to us.

The simplest is what Dr. Murthy wrote about in The Times: Go to the doctor. A recent essay in The New England Journal of Medicine argued that clinicians should see themselves as part of the front line in reconnecting Americans. A report on loneliness in America published by Harvard University's Graduate School of Education two years ago has a similar starting point. Doctors "should be asking patients if they are lonely as part of annual physicals," the authors wrote.



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From there, doctors can help patients single out components of chronic loneliness and line up appropriate treatment. People struggling with post-traumatic stress disorder, which can manifest as prolonged periods of intense loneliness, need a different type of attention from people whose anxiety makes them feel reluctant to go to a social gathering.

Whatever the root source of loneliness, given what we know about the brain's capacity to rewire itself, coaching social interaction through mindfulness therapy or cognitive interventions can make up elements of a clinical response.

Dr. Bzdok says that training people on "processing emotional cues or social interactions on a regular basis" can lead to adaptations in regions of the brain that govern social interaction. He notes that activities that reinforce social bonds, such as exercising together and eating together, while not an answer in and of themselves, are "possible parts of a response."

There is a risk involved in assessing chronic loneliness on clinical grounds. Medicalization can reduce individual suffering, says Gary Greenberg, a practicing psychotherapist and the author of "The Book of Woe: The DSM and the Unmaking of Psychiatry." But it might also lead people to believe that loneliness, by all accounts a crisis on a societal scale, is nothing more than an unfortunate series of individual failings. This, in turn, "might distract attention from the question of: Why in the world are we so isolated? And what should we do about that?" he says.

Clinical assessment of loneliness faces more practical barriers, too. As Dr. Russell points out, health care providers have yet to come up with criteria that describe when a person is sufficiently lonely to the point that physicians should do something about it. Some medical organizations, he adds, use a shortened form of the U.C.L.A. Loneliness Scale as a screening tool, but absent criteria for diagnosing loneliness, there's no research that has been done to evaluate the scale's diagnostic ability. Also, objective measures, like hitting a score based on the scale, might be imperfect or incomplete.

"An important distinction is between individuals who may be lonely now but that may not last very long, versus individuals who become lonely and remain lonely and may have always been lonely," Dr. Russell says.

Unlike depression or anxiety, loneliness is not a mental health disorder. The American Psychiatric Association has developed clear diagnostic criteria for those other conditions, contained in the Diagnostic and Statistical Manual of Mental Disorders, or D.S.M. Such standards do not exist for chronic loneliness. Though the goal is not to pathologize loneliness or to add it to the D.S.M., health care workers will need clear guidelines for identifying loneliness and triaging care.

Even if a pill for loneliness were to become widely available, the goal should not be to get rid of these emotions that make up loneliness or the insights that a short period of loneliness can provide. Rather, it's to make sure that people can move forward — that their loneliness can work as an effective alarm, calling out their need for connection, rather than becoming the soundtrack of their life.

"We don't want to just adjust that or, you know, moderate that feeling," says Julianne Holt-Lunstad, a professor of psychology and neuroscience at Brigham Young University, an author of the New England Journal of Medicine paper and the lead scientist on the surgeon general's advisory on rebuilding connection. "We also want to make sure that those objective needs are actually being met."

Loneliness will never be cured. But it probably can be treated. Medicine will play an important role in recovery, and social reform is essential to prevent future generations from succumbing to chronic loneliness. But the most important source of change are the lonely people themselves.

In his social connection advisory, Dr. Murthy recommended a number of potential societal-scale interventions, including investing in shared infrastructure like public transportation and parks and beefing up community organizations that bring neighbors together. Dr. Cacioppo recommends reframing our relationship with social media platforms that can be a source of disconnection, especially among young people. There's nothing like a glamorous Instagram post to make people more attuned to whether their life is falling short of expectations.

Image

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"If people can use social media as a way station rather than as the destination, that could really help," Dr. Cacioppo says. "Social media can be a great tool to form connection. It all depends on how you use it."

Limiting the amount of time spent online, the platforms visited or the accounts followed can help.

Finding ways to help people reset their expectations, possibly through therapy, while coaching them on new ways to engage with the people around them could be helpful. As is helping people understand where their loneliness is coming from and why it keeps returning.

Health care providers of all stripes can serve as a resource for those looking for a way back to connection, says Dr. Holt-Lunstad. In addition to offering support, doctors can connect their patients with organizations that can provide means to aid them on their journey, including exercise classes and support groups.

Friends and family must also be proactive about engaging with lonely people on terms that work for them. Finding ways to support others gives lonely people a chance to connect — and can help them break out of a kind of self-centered thinking that loneliness can exacerbate.

Most important, lonely people must remember that while they are not necessarily responsible for the conditions that plunged them into loneliness, they can take steps to pull themselves out of it. This may involve forcing themselves to connect — even when they don't feel like it. Dr. Murthy wrote eloquently about this "medicine hiding in plain sight": "It could be spending 15 minutes each day to reach out to people we care about, introducing ourselves to our neighbors, checking on co-workers who may be having a hard time, sitting down with people with different views to get to know and understand them and seeking opportunities to serve others, recognizing that helping people is one of the most powerful antidotes to loneliness."

Instead of investigating a pharmaceutical solution to loneliness, Dr. Cacioppo is now promoting the acronym GRACE, which stands for "gratitude, reciprocity, altruism, choice and enjoyment." It's fairly self-explanatory: Be grateful for what you have, ask for and offer help to others and make time for fun. But one letter is more controversial than the others.

"It's a choice to remain lonely or not lonely," Dr. Cacioppo says. Put another way: Loneliness doesn't have to be a permanent state. With the right support and a lot of determination, the brain can learn to connect again.