



Loneliness is in our Human Code

How loneliness, and other behavioral and social determinants affect our overall health and wellbeing.

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About GoInvo

GoInvo is digital design studio in Boston, known for our unique, industry-leading approach to healthcare user experience. We design, build, and ship beautiful software for companies of all sizes, from the market leaders of today — including Apple, Johnson and Johnson, Partners Healthcare, and Walgreens — to the micro startups that will create the markets of the future.

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Introduction

Among social determinants of health, loneliness can hugely impact a person's mental state, physical health, and overall wellbeing. In this brief, we explore how social determinants of health, with a focus on loneliness, affect health over the course of a lifespan, taking into consideration the unique circumstances and needs at each stage of life.

SOCIAL ISOLATION COSTS US

8 years

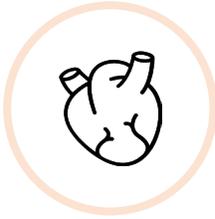
of life lost, or the equivalent of
smoking 15 cigarettes a day¹

\$6.7B

dollars in additional federal
spending, every year²

WHEN WE FEEL EXCLUDED, WE **LOSE OUR FIGHT** AGAINST DISEASE

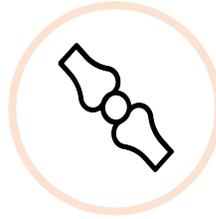
IT INCREASES **OUR RISK FOR**^{3,4}



heart disease



dementia



arthritis



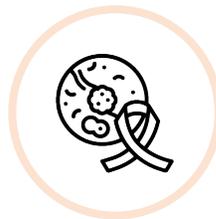
type-2 diabetes



depression



high blood pressure



metastatic cancer



stroke



suicide

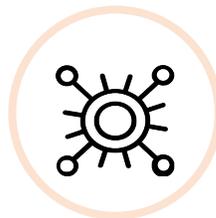
IT IMPACTS **OUR BODY FUNCTION**^{4,5,6,7}



narrowing blood vessels to preserve body heat



elevating levels of the stress hormone cortisol



reducing antibody protection



decreasing cognitive function

IT'S NOT JUST A FEELING, LONELINESS...

IS A CO-MORBIDITY

We feel lonely when our current number of social relations (and the quality of those) do not match what we desire^{8,18}. This feeling can lead to a loss of our sense of belongingness, satisfaction with life, and is associated with the onset of co-occurring physical and mental illnesses.

MANIFESTS AS PHYSICAL PAIN

A broken heart exhibits similar physical pain levels as a broken limb because our nervous system processes social rejection in the same area of the brain as physical pain^{14,15}. Evolution has wired socialization into the brain's automatic reflexes on account of human contact dramatically increasing our chances of survival¹⁵.

IS A DYSUNCTION OF THE BRAIN

The default for the human brain is to assess and respond to our social context and stimuli, otherwise known as our "default network"¹¹. When we feel socially fulfilled, there is a boost in our brain's reward center (activating dopamine and oxytocin) along with healthy function in the parts of our brain that process social exclusion^{11,12,13}.

CAN AFFECT GENE EXPRESSION

Studies have found that there may be genomic and hereditary indicators for loneliness, including a study of older people that found 209 abnormally expressed genes in their lonely group^{6,9,10}. In the lonely people, genes in charge of activating inflammation were over-expressed while those regulating antiviral and antibody mechanisms were under-expressed⁶.

THE CAUSES AND CONSEQUENCES ARE UNIQUE TO EVERY PERSON

TAKE A LOOK AT HOW SOCIAL CONNECTION VARIES
ACROSS OUR LIFESPAN

INFANTS



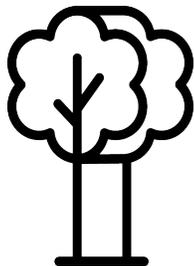
EARLY NURTURE

Social connectedness begins when life begins, and is most impacted by the quality of early relationships with parents and caregivers. Close family ties including grandparents, siblings, aunts, and uncles can start building an infant's social support system by spending time with them in these formative years¹⁶.



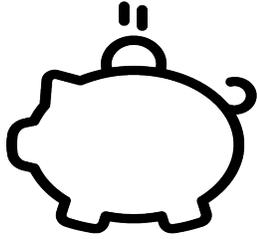
SEPARATION FOR INFANTS

Physical attachment is crucial for infants, and separation can cause high levels of anxiety. One study showed that tending to and cuddling hospitalized infants can increase survival rate by 20%, despite the risks of infection^{16,17}.



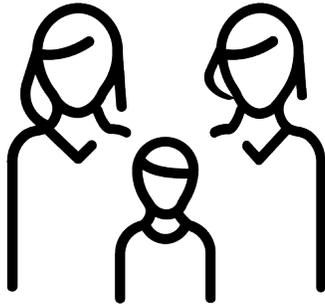
NEIGHBORHOOD CONDITIONS

Infants who grow up in a stable neighborhood environment have an increased ability to develop strong social networks^{18,19,20}.



EFFECTS OF POVERTY

Living in a diverse environment allows children to make social connections that open them up for stronger support systems that will grow over time. Poverty serves as a barrier to social, physical, emotional, educational, and economic resources since the poorest communities have historically been and continue to be highly segregated^{16,21}.



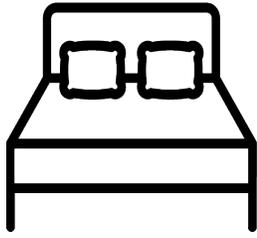
PARENTS

Parents and guardians play a huge role in children's overall wellbeing. Growing up with both parents present and engaged in their child's life doubles the likelihood and increases the adequacy of access to emotional, physical, and educational support^{16,22}.



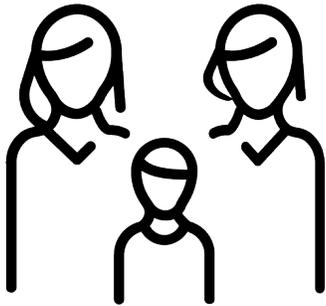
SPEECH AND LANGUAGE

Speech and language are the two most important aspects of early childhood development, and the foundations of social and emotional well-being. Parents and guardians can help with this by spending time with children, including making and having meals, reading, and playing sports¹⁶.



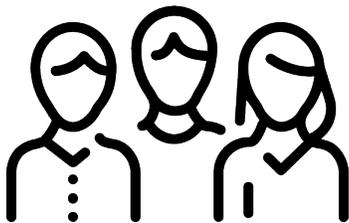
SLEEP

People who report getting enough sleep are 70-80% less likely to feel a lack of companionship. While this is true for all ages, adolescents are particularly at risk with a decreased production of melatonin (sleep hormone) compared to that of young children. Additionally, use of electronic devices late into the night have been found to impair sleep^{23,24}.



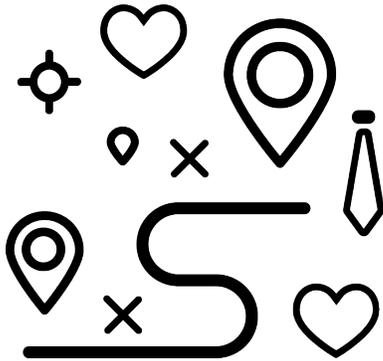
PARENT-CHILD RELATIONSHIP

The relationship between a parent and child is crucial to lifelong health and well-being. In fact, having a strong connection with a father figure decreases the likelihood by 68% of consuming alcohol, tobacco products, and drugs in their teenage years, and are less likely to participate in juvenile delinquency. Religious, community, big brother, and big sister programs, as well as supportive educators are key at this stage to fill any gaps that exist in a child's support system²².



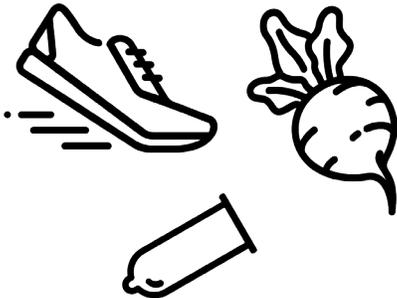
PEER INFLUENCE

A major component of adolescent growth is gaining independence and a sense of identity. Often, this leads to conflict with parents and a tendency to turn to peers for guidance and support. However, at this time, adolescents can be susceptible to peers who exert negative influence. Finding a peer group that exerts positive influences leads to building a strong support system^{16,25}.



A TIME OF CHANGE

Emerging adulthood is a time of exploration and change, including testing different careers, values, relationships, and geographic residences that may mean leaving family for the first time. This change is often characterized by the constant forming, breaking, and reforming of social bonds. This is why having a constant source of social support can have major impacts on health and life satisfaction. In fact, if a person has a friend they see on most days, it has a similar impact on life satisfaction as would earning an extra \$100,00 of income^{14,16}.



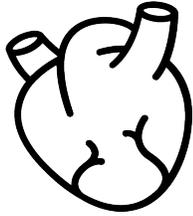
HEALTHY BEHAVIORS

A feeling of connectedness and belonging is correlated with a host of healthy behaviors including exercise, a wholesome diet, and safe sex. Supporting your body strengthens your mind and increases your ability to emotionally connect with others²⁶.



SUBSTANCE USE

Many emerging adults value peer opinions and actions as guidance for their own. During this time, individuals may experiment with alcohol and drugs as part of socializing. Males disproportionately consider drinking-related activities as a way to foster intimacy and closeness with peers, while females rely more on self-disclosure or sharing multiple activities^{26,27}.



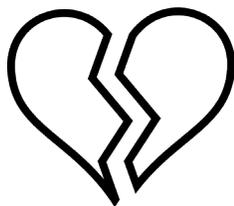
HEART HEALTH

Maintaining cardiovascular health is extremely important for people of all ages, but poor health outcomes are particularly risky for both adults and seniors. Loneliness is associated with all types of heart disease, including ischemic heart disease, arrhythmia, heart failure, and heart valve disease. Among those with coronary artery disease, the lonely are two times more at risk of cardiac death^{28,29}.



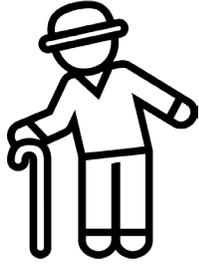
SELF-PRESERVATION

Lonely people focus more on self-preservation and become more defensive in the face of their environments. As a survival mechanism, the brain is wired to focus on the self instead of caring for those around. Unfortunately for the person, this can backfire and make themselves even more unpleasant to be around, leading to more and more negative social encounters and fewer people willing to be around them³⁰.



SOCIAL LOSS

Because many people identify themselves in terms of their relationships, losing a spouse or friend to distance or death can be a very painful experience, both emotional and physical. While the likelihood of losing someone is equal across age groups, many adults see some of their friendships weaken as a product of building a family or experience the passing of a parent or spouse. In terms of life satisfaction, when we break a social tie, it is similar to suffering \$90,000 loss in annual income^{14,31}.



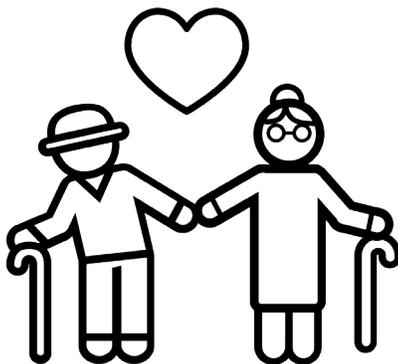
COMPANIONSHIP

Aging adults are most lonely when they are not involved in activities that build social connections such as volunteering, religious services, family time, or other community participation. In fact, 40% of seniors report television as their main companion. While technology such as the internet and television can be a helpful tool to alleviate isolation, contact with other humans brings the most fulfillment^{16,32}.



THE HOME

Being able to maintain one's own home promotes confidence and well-being in older people. Not only does it offer a sense of control and contribution, but a level of independence strengthened by opportunities to stay active and gather with friends in their community³².



SOCIAL LOSS

Many people live with a long-term partner into old age, and a large majority of people rely on their partners as a primary source of social support. However, aging can bring unexpected medical events and even death, leaving the healthy or surviving partner to suffer harmful effects to mental and physical health. Additionally, the percent of widows living with a child has decreased significantly in the last 100 years: from 70% to 20%. This means that aging adults who have lost their spouse are much more likely to live alone than with family^{16,33}.

Resilience in Our Human Code

While these are statistically relevant, humans have the ability to survive and surpass their circumstances to live full and healthy lives. Loneliness, and other social, circumstantial, and behavioral determinants have as much impact on your health as your biology or genetics. If you or someone you know is feeling lonely, check out resources in your neighborhood or reach out to talk to someone. Sometimes a little bit of human contact can go a long way towards living a healthier life.

TAKE STEPS NOW³⁴

- ♦ The **National Alliance on Mental Health** provides education, outreach, and advocacy and support services. Call the NAMI helpline **800-950-NAMI** for immediate support.
- ♦ Services like **BetterHelp** and **TalkSpace** provide virtual counseling with a licensed therapist, making it easier than ever to find support.
- ♦ **MeetUp.com** can help you find people or groups near you who share common interests.
- ♦ The **ASPCA** or your **local animal shelter** can help you find a furry best friend.
- ♦ Learn more about the **social determinants of health** and how it can impact your overall health at <http://determinantsofhealth.org>.



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