MI-13 Loneliness, meaning and the social body: the determinants a village can change

HEALING after the FALL, research library, MI-13

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

Findings by section

1. How to read this report

The chapter ends on a claim: a village is itself medicine. This report asks how large that effect is, which parts of it are robust and which are stories, and what a village of 300 can do in its first week for the people it is losing to isolation.

Two words are kept apart throughout. **Isolation** is structural: living alone, few contacts, no part in groups. It can be counted by a neighbour. **Loneliness** is felt: the gap between the company a person has and the company they want. It can only be asked. The record treats them differently.

Three kinds of claim are also kept apart: what the tradition says ("community heals"), what the record shows, and what modern science infers. Where I draw my own inference, or could not check a claim, it is marked [VERIFY]. Village rules that are for the owner to decide are marked [OWNER]. No plant remedy is proposed here. Herbal treatment of low mood belongs to MI-04.

Neighbouring ground is left to other reports. The first year of widowhood and the rites of mourning are in MI-03, which leaves the long loneliness of the old widowed to this report. Frailty, dementia and the old are in CH-12, which leaves to this report the census of the isolated, the visiting rota and work for the old. Depression and its treatment are in MI-04, suicide in MI-08, children's attachment in MI-07, talking circles in MI-10, ritual and community as healing in TR-16, the dying in NU-06, and the mortality of collapse in FO-01. The design of belonging, membership and the duty to work belongs to GOVERNING after the FALL, and this report points there instead of redoing it. OR-08 is not yet written. The links to it in other library reports suggest that it covers the institutions that endow and sustain care [VERIFY: inferred from cross-references, the brief was not available]. Where this report touches mutual-aid societies or the funding of care, it leaves that ground to OR-08. Following SY-04, restricted forms of belonging, such as initiation and gendered societies, are named as existing and not described (THRIVING library, SY-04).

2. The claim on its own terms

The claim that people keep each other alive takes several forms, each given here as its holders state it.

Integration. Émile Durkheim's *Suicide* (Paris, 1897) argued that suicide rises when people are too loosely bound to a group (egoistic suicide) and when the rules that hold desires in check break down (anomic suicide). It also rises at the other extreme, when the group binds too tightly (altruistic suicide) or rules crush hope (fatalistic suicide). From national and provincial statistics he found higher rates among the unmarried, the childless and Protestants than

among the married, parents and Catholics, and falling rates during wars and national crises (Durkheim 1897, read in secondary summary only). Belonging protects, in this claim, but there is a right amount of it.

A reason for living. The Japanese word *ikigai* names the sense that one's life is worth living, often through a role others depend on. The Ohsaki study asked 43,391 adults one question about it (Sone 2008, section 7).

Neighbours as carers. In Kerala, the Neighbourhood Network in Palliative Care began in Malappuram in 2001 on the principle that the dying and the chronically ill are a community's responsibility. Volunteers give at least two hours a week (THRIVING library, NU-06). In Zimbabwe, lay grandmothers on park benches treat depression (Chibanda 2016, reported in THRIVING library, TR-16).

The good life. The Harvard Study of Adult Development has followed 724 men since 1938, 268 Harvard students and 456 boys from inner Boston, and now about 1,300 of their descendants. Its director, Robert Waldinger, summarises its lesson as this: those most satisfied in their relationships at 50 were the healthiest at 80 (Harvard Gazette 2023).

The common elements are being known, being needed, being looked in on, and having a part in common work. The tradition also carries a shadow: a group that holds its members can expel them. In the ethnographic record, scarcity turned some societies against their decrepit old (Simmons 1945, Glascock, both via THRIVING library, CH-12). Durkheim himself named too much integration as a cause of death.

3. How large is the mortality effect

The first cohort. In Alameda County, California, 6,928 adults were surveyed in 1965 and followed for nine years. Those with the fewest social ties (marriage, friends and relatives, church, other groups) had an age-adjusted death rate 2.3 times that of the most connected among men, and 2.8 times among women. The association held after adjustment for self-reported health at baseline, social class, smoking, drinking, obesity, physical activity and use of preventive services (Berkman and Syme 1979, abstract read).

The meta-analyses. Holt-Lunstad, Smith and Layton (2010) pooled 148 studies of 308,849 people followed for an average of 7.5 years, of whom about 29% died. People with stronger social relationships had 50% greater odds of survival, OR 1.50 (95% CI 1.42 to 1.59). Heterogeneity was high (I^2 81%). Complex measures of social integration gave the largest effect, OR 1.91 (1.63 to 2.23). Living alone gave the smallest, 1.19 (0.99 to 1.44), which does not exclude no effect. Structural measures gave 1.57 and functional ones (perceived support) 1.46. Adjusted estimates were smaller than unadjusted ones. Publication bias tests were reassuring: the fail-safe N was 4,274, trim and fill imputed no missing studies, and Egger's test was not significant (Holt-Lunstad 2010, full text read).

An odds ratio overstates a relative risk when the outcome is common. With roughly 29% dying, an odds ratio of 1.50 for survival corresponds to a risk ratio for death of about 1.3 between the weakly and the strongly connected [VERIFY: my arithmetic, assuming about a third of the weakly connected died].

The second meta-analysis separated the measures (Holt-Lunstad 2015, abstract read). It pooled 70 studies of about 3.4 million people. The weighted average effects, after adjustment, were OR 1.29 for social isolation, 1.26 for loneliness and 1.32 for living alone. Effects were stronger in people under 65. Unlike in 2010, initial health status did influence the results.

The largest pooling so far is of 90 cohorts with 2,205,199 people (Wang 2023, abstract read). Social isolation raised all-cause mortality by a factor of 1.32 (1.26 to 1.39), and loneliness by 1.14 (1.08 to 1.20). Isolation raised cancer mortality by 1.24 and cardiovascular mortality by 1.34. Among people who already had breast cancer, isolation was linked to a risk of 1.51.

Against smoking and obesity. Current smokers in the United States die at about three times the rate of never-smokers, and lose more than ten years of life (Jha 2013, abstract read). Against the healthy weight band, obesity

grade 1 (BMI 30 to 35) carries a hazard ratio of 1.45, grade 2 1.94 and grade 3 2.76, while overweight (BMI 25 to 30) carries 1.07 to 1.20 (Global BMI Mortality Collaboration 2016, abstract read). An adjusted isolation risk of about 1.3 is therefore of the order of overweight to mild obesity, and well below smoking.

The popular claim that loneliness is as deadly as smoking 15 cigarettes a day traces to the US Surgeon General's advisory of 2023, citing Holt-Lunstad 2010 (fact check by Lenz, secondary only). The 2010 paper did not measure loneliness, and its comparison with smoking was to quitting smoking, not to cigarettes a day. Batty and colleagues tested the comparison directly in two cohorts, UK Biobank (466,876 people, 13,072 deaths) and the English Longitudinal Study of Ageing (7,505 people, 1,183 deaths). In order of increasing strength, the predictors of death were loneliness, then isolation, then smoking. For cardiovascular deaths isolation and smoking were similar. For cancer deaths smoking was far stronger (Batty 2021, full text read). The claim should not be repeated.

The World Health Organization's Commission on Social Connection reported in June 2025 that about one in six people worldwide is lonely, more in poor countries (24%) than rich ones (about 11%), that up to a third of older people are isolated, and that loneliness is linked to more than 871,000 deaths a year (WHO 2025, news release read, method not read).

Measure	Source	Size	Effect on death
Fewest against most ties	Berkman and Syme 1979	6,928, 9 years	2.3 (men), 2.8 (women), age-adjusted
Stronger relationships, survival	Holt-Lunstad 2010	148 studies, 308,849	OR 1.50 (1.42 to 1.59)
Isolation, adjusted	Holt-Lunstad 2015	70 studies, 3.4 million	OR 1.29
Isolation, pooled	Wang 2023	90 cohorts, 2.2 million	1.32 (1.26 to 1.39)
Loneliness, pooled	Wang 2023	the same	1.14 (1.08 to 1.20)
Overweight	GBMC 2016	239 studies	1.07 to 1.20
Obesity grade 1	GBMC 2016	the same	1.45
Current smoking	Jha 2013	US national	about 3

4. What survives adjustment

The decisive question is whether the sick withdraw (reverse causation), or whether the withdrawn fall sick. Two large cohorts give the clearest answer available.

In the English Longitudinal Study of Ageing, 6,500 people aged 52 and over were followed for 7.25 years, and 918 died. Isolation raised the hazard of death by 1.50 after adjustment for age and sex, and by 1.26 (1.08 to 1.48) after full adjustment for wealth, education, illness and health behaviour. The figure did not change when loneliness was added. Loneliness raised the hazard by 1.26 at first, but after adjustment for health and demographic factors it fell to 0.92 (0.78 to 1.09). The authors concluded that efforts to reduce isolation are likely to matter more for mortality than efforts against loneliness (Steptoe 2013, full text read).

In UK Biobank, 466,901 people were followed for 6.5 years. Isolation's hazard ratio fell from 1.73 with minimal adjustment to 1.26 (1.20 to 1.33) with full adjustment. Loneliness fell from 1.38 to 0.99 (0.93 to 1.06). Much of the attenuation came from the biological risk factors, health behaviours and illnesses that isolated people carry (Elovainio 2017, abstract read).

Three things follow. First, an effect of isolation of about 1.26 survives heavy adjustment in two cohorts. Second, loneliness on its own, once health is accounted for, does not predict death in these cohorts, although it is miserable and predicts depression. Wang's pooled 1.14 for loneliness may carry the confounding these two cohorts removed

[VERIFY: own inference]. Third, much of isolation's effect runs through behaviour: smoking, drinking, inactivity, poor diet, and illness unnoticed and untreated. That pathway is the one a neighbour can reach [VERIFY: own inference].

Mendelian randomisation, which uses genetic variants as natural experiments, is mixed. One bidirectional study found that genetically predicted loneliness raised the odds of ischaemic heart disease (OR 2.13, 1.38 to 3.29) with no sign of reverse causation (Su 2025, abstract read). A UK Biobank analysis is reported to have found a much smaller effect on coronary disease, OR about 1.03 [VERIFY: search snippet only, paper not read]. The genetic instruments for a social trait also capture personality and mood, so these studies do not settle causation.

The strongest critique comes from Macleod and Davey Smith (2003, abstract read). They argued that the association of "misery" with physical disease may reflect reverse causation, reporting bias and confounding by material conditions, and that this may explain why psychosocial interventions have so far shown little effect on objective physical health. Their verdict, that such interventions for physical health seem premature, still stands for mortality (section 11).

5. Durkheim, the Harvard men and Whitehall

Durkheim gave the integration claim its first quantitative form, but his method has been criticised. Selvin (1965) pointed to the ecological fallacy: a province with many Protestants and many suicides does not show that Protestants were the ones dying. Van Poppel and Day (1996) argued that Catholic regions under-recorded suicide. Pope and Danigelis (1981) found the Protestant excess absent outside German-speaking Europe (all via secondary summary only). The broad pattern of higher suicide among the unmarried and the socially detached has been reported widely since [VERIFY: not systematically checked here, see MI-08]. Grade B for the pattern, D for Durkheim's original inference.

The Harvard study is a source of strong testimony and modest papers. Waldinger's "satisfied at 50, healthiest at 80" is a summary of qualitative and descriptive findings, not a published effect size that I could find. The peer-reviewed papers I read are small. In 81 older couples, secure attachment to a spouse predicted less depression two and a half years later and, in women, better memory (Waldinger 2015, abstract read). In 235 men followed over 71 years, the number of people providing emotional support fell by up to half between ages 30 and 90, from about two to about one (Petrova 2024, abstract read). The book *The Good Life* (Waldinger and Schulz 2023) was not read. Grade B for the descriptive findings, D for the headline claim.

Whitehall is about rank and control, not friendship. In 17,530 London civil servants followed for 7.5 years, men in the lowest grade (messengers and the like) died of coronary heart disease at 3.6 times the rate of administrators, and smoking, blood pressure and cholesterol explained only part of it (Marmot 1978, abstract read). In Whitehall II, 10,308 civil servants followed for 5.3 years, low control at work reported on two occasions raised the odds of coronary heart disease by 1.93 (1.34 to 2.77), while job demands and support at work did not predict it (Bosma 1997, abstract read). Low job control accounted for the largest share of the grade gradient, and risk factors for about a quarter (Marmot 1997, abstract read). The account has been challenged. In 5,232 Scottish men followed for 25 years, perceived workplace status was only weakly linked to death once objective position was adjusted for. Father's manual work, lack of a car and short stature (markers of childhood deprivation) predicted death more strongly (Macleod 2005, abstract read). Grade B for the gradient, contested for the psychosocial mechanism. For a village, the lesson is that having a say over one's own work may matter, and that material conditions matter at least as much [VERIFY: own inference].

6. Work, its loss and its end

Unemployment. Roelfs and colleagues pooled 235 estimates from 42 studies covering more than 20 million people. Unemployment raised the hazard of death by 1.63 overall, by 1.78 (1.56 to 2.02) in men and 1.37 (1.17 to 1.60) in

women. The excess was largest in early and middle career (73% and 77%) and smaller in late career (25%). With more than ten years of follow-up it fell from 76% to 42%. Hazard ratios were 24% lower where health behaviours were controlled, which suggests some of the effect runs through drink and smoking. Where pre-existing health was controlled, the estimate did not change significantly (p=0.12), against pure reverse causation. Egger's test was significant (p<0.001), so publication bias is possible (Roelfs 2011, full text read).

Plant closures give a cleaner test because the worker did not choose to go. In Pennsylvania, high-seniority men who lost their jobs in mass layoffs had mortality 50 to 100% higher in the following year, and 10 to 15% higher twenty years on. For a man displaced at 40 this implies a loss of 1.0 to 1.5 years of life (Sullivan and von Wachter 2009, abstract read). Grade B.

Retirement is a mixed record. At Shell Oil, employees who retired at 55 and were still alive at 65 had a hazard of death 1.37 times that of those who retired at 65, and 1.89 in their first ten years of retirement. Retiring at 60 against 65 made little difference, 1.06 (Tsai 2005, abstract read). Early retirers include the already unwell, so natural experiments are better. In the United States, male mortality rose by about 2% just after age 62, when Social Security first becomes payable, more among unmarried men and those without a high school diploma. The causes were traffic accidents, lung disease and lung cancer (Fitzpatrick and Moore 2018, abstract read). In Austria, a programme that let men in some regions retire up to three and a half years early raised their risk of dying before 67, with no effect in women (Kuhn and colleagues, IZA 2010 and NBER 2018). The size differs between versions, from about 13% to 5.5% [VERIFY: three versions read in abstract, figures differ]. Grade B: for some men, losing work raises the risk of death.

Volunteering. In five cohort studies, volunteers had a lower risk of death, RR 0.78 (0.66 to 0.90), but trials of volunteering did not confirm health benefits (Jenkinson 2013, full text read). In the Baltimore Experience Corps trial, 702 older adults were randomised to tutor in primary schools for about 15 hours a week or to a control. Cognitive benefits were dose-dependent (Carlson and Rebok 2019, abstract read), but the children's test scores did not improve (Rebok 2019, abstract read). Grade B for the association, A for the absence of proven mortality benefit.

Who works, at what, and what the village owes those who cannot, belongs to GOVERNING after the FALL. This report adds one finding: abrupt loss of a working role, especially for men without a partner, carries a measurable risk of death.

7. Meaning and purpose

In the Ohsaki cohort in Miyagi, Japan, 43,391 adults were followed for seven years and 3,048 died. Those who reported no *ikigai* had a hazard of death 1.5 times higher (1.3 to 1.7) than those who did. The risk was 1.6 for cardiovascular death and 1.9 for external causes (accidents and suicide). The risk for cancer was 1.3 and not significant (Sone 2008, abstract read). A meta-analysis of 10 studies of 136,265 people found that a high sense of purpose in life was linked to lower mortality, RR 0.83 (0.75 to 0.91) (Cohen, Bavishi and Rozanski 2016, abstract read). Grade B. Reverse causation is as likely here as anywhere: illness takes purpose away. The finding supports giving people roles, which a village can do. It does not support preaching purpose to the ill.

8. Roseto: a story that outran its data

The story. Roseto, Pennsylvania, was settled from 1882 by migrants from Roseto Valfortore in Apulia. Stewart Wolf, a physician, heard from a local doctor that heart attacks were rare there. Stout, Morrow, Brandt and Wolf (1964, abstract read) reported that between 1955 and 1961 no one in Roseto under 47 had died of a heart attack, and that the death rate from myocardial infarction was less than half that of neighbouring towns, despite a diet rich in fat and much smoking. The explanation offered was the town's close-knit, three-generation, egalitarian life. Egolf, Lasker, Wolf and Potvin (1992, abstract read) compared death certificates for Roseto and neighbouring Bangor from 1935 to 1985. Roseto's rate was lower for thirty years and then rose to Bangor's, mainly among younger men and older women, as the town grew more like its neighbours. The authors read this as confirming the protective effect of

solidarity. Wolf and Bruhn's book *The Power of Clan* (1993) was not read. Malcolm Gladwell's *Outliers* (2008) made the story famous.

The critique. Adhikari, Ogedegbe and Devinsky (2026, full text read) re-examined the original data. Roseto had about 1,600 people. Matched for age and sex against the Framingham cohort, its number of heart attack deaths fell within the simulated 95% range in every age group except those over 65, where it was higher. Social cohesion was never measured in the original work. Ancel Keys had already criticised the study because Roseto's rate was not lower than the US average, and for diagnostic and selection bias. The authors conclude that the Roseto study neither supported nor refuted the link between social support and heart disease.

What survives. A small town's death counts are too small to carry a mechanism. The rise in Roseto's deaths after 1965 is real in Egolf's data, but changes in diet, work, migration and death certification ran alongside the loosening of community [VERIFY: own inference]. Grade D for Roseto as evidence. It is a good parable and a poor proof, and the book should use it only as the first.

9. Blue Zones: validated ages, unproven recipes

The claim. The term began with demography. Michel Poulain and Gianni Pes mapped validated centenarians in Sardinia with a blue marker and found a cluster in the mountain villages of central-east Sardinia, where the ratio of women to men among centenarians was 1.35, against 2.43 in the rest of the island (Poulain 2004, abstract read). In Villagrande Strisaili men live as long as women, and the authors excluded age exaggeration by checking records (Poulain, Pes and Salaris 2011, abstract read). Dan Buettner then extended the name to Okinawa, Nicoya in Costa Rica, Ikaria in Greece and Loma Linda in California, and distilled nine habits, among them belonging to a faith community, putting family first and keeping the right social circle. The habits are now a commercial brand.

The critique. Saul Newman (2019, preprint) showed that supercentenarian records fall by 69 to 82% when US states introduce birth certificates, that only 18% of validated supercentenarians had one, and that birthdates cluster on days divisible by five. He noted that Sardinia, Okinawa and Ikaria are regions of low income, low literacy, high crime and short average life expectancy, which suggests clerical error and pension fraud. In Japan in 2010, Sogen Kato, thought to be Tokyo's oldest man at 111, was found to have been dead for 32 years, and checks found about 230,000 registered centenarians missing or unaccounted for (CBS News 2010, news report only).

The reply. Austad and Pes (2025, full text read) answer that Blue Zone ages were validated against parish, civil and military records, which Newman's national data were not. A 2026 preprint by the original demographers finds that Okinawan men, when the zone was declared, had life expectancy at 70 about 9.8% above the reference and 2.7 times the centenarian prevalence, but that the advantage has narrowed since about 2010 (Olshansky 2026, abstract read). A scoping review found Okinawa, Ogliastra and Nicoya well characterised and no studies at all for Loma Linda as a Blue Zone (Candal-Pedreira 2025, abstract read).

What survives. Some places did have unusually long-lived people, especially men. Why is unknown: inbreeding and genes, lifelong physical work on steep ground, diet, selective emigration and close kin all compete [VERIFY: own summary of competing explanations]. The Power 9 list is a hypothesis sold as a finding. Grade B for the Sardinian demography, D for the social recipe.

10. The Soviet collapse as social shock

FO-01 sets out the scale. Russian male life expectancy fell from 64.2 years in 1989 to 57.6 in 1994, deaths among men aged 35 to 44 rose by 74%, and alcohol was the main driver (THRIVING library, FO-01). This report adds who died. Peter Watson (1995, abstract read) showed that the rise in premature male mortality in eastern Europe was concentrated among the unmarried, and argued for family-based coping as protection.

The best individual-level data come from a case-control study in Udmurtia in 1998 and 1999 of men aged 20 to

55, with 205 circulatory deaths and 333 deaths from external causes (Shkolnikov 2004, full text read). For deaths from injury, poisoning and violence, divorced or widowed men had odds 3.30 times those of married men. This fell to 2.53 after adjusting for education and to about 2.16 (0.97 to 4.80) after adjusting for drinking and smoking, no longer significant. Never-married men had odds of 2.07, falling to 1.68. Marital status did not predict circulatory deaths significantly. Unemployment did predict both, 3.01 for external causes and 2.63 for circulatory deaths after adjustment. Heavy drinking was the strongest finding. In Lithuania, alcohol-related deaths among never-married men were 1.9 times those of married men, 2.6 among the divorced and 2.4 among the widowed, and 5.1 among the unemployed (Grigoriev 2017, abstract read).

Stuckler, King and McKee (2009, abstract read) argued that rapid mass privatisation raised male mortality by 12.8% (7.9 to 17.7) and that the effect was smaller where social capital, measured by membership of social organisations, was high. FO-01 records the rebuttals of Earle and Gehlbach and of Gerry, which found the privatisation effect fragile (THRIVING library, FO-01). The social capital finding is not robust enough to build on [VERIFY: the full paper was not read].

The inference for a village after a fall: the men most at risk are those who lose a partner and work at once and turn to drink. They die of injury, poisoning and violence, not of loneliness as such. Grade B.

11. Interventions: what has moved

Against loneliness itself. Masi and colleagues (2011, full text read) pooled 50 studies. Uncontrolled before-and-after studies showed a mean effect of -0.37 and non-randomised comparisons -0.46. The 20 randomised trials showed -0.20 (-0.32 to -0.08), a small effect, in the bottom 15% of behavioural interventions. Within the trials, changing how lonely people read social situations (social cognitive training, four trials) gave -0.60, social support -0.16, social skills training no effect and simply creating more opportunities for contact about none. A later review of 70 trials with 8,259 older adults found mostly small effects (Hoang 2022, abstract read). Befriending reduced depressive symptoms slightly, SMD -0.27 in the short term and -0.18 in the long term (Mead 2010, abstract read). Grade A, small.

Against death and disability. Two programmes stand out, neither yet replicated.

The Circle of Friends trial in Finland randomised 235 lonely people over 74 to groups of seven or eight led by two trained leaders, meeting 12 times over three months around art, exercise and discussion, or therapeutic writing. Two-year survival was 97% (91 to 99) in the groups against 90% (85 to 95) in the controls, p=0.047, and health costs were 943 euros a year lower per person (Pitkälä 2009, abstract read). The groups did not change loneliness scores, but 45% of participants made new friends against 32% of controls, 66% felt needed against 49%, and 40% of groups kept meeting on their own for a year (Routasalo 2009, abstract read). The mortality finding was a secondary outcome with a p value just under 0.05. Grade A, one trial.

In Taketoyo, Aichi Prefecture, residents and volunteers opened community salons from 2007, open meeting places for older people [VERIFY: start year from memory, frequency and activities not read]. Among 2,421 older residents, salon participants had about half the incidence of functional disability, HR 0.49 (0.33 to 0.72). The result held with propensity matching (0.52) and with an instrumental variable, living within 350 metres of a salon (0.50). Over five years, participants had a 6.3% lower incidence of disability (Hikichi 2015, abstract read). Over seven years, participation was linked to less cognitive decline, OR 0.73 (0.54 to 0.99), while only about 12% of older residents took part (Hikichi 2017, abstract read). Grade B.

Social prescribing, in which a general practitioner refers patients to a link worker who connects them to community activities, was reviewed by Bickerdike and colleagues (2017, abstract read). All 15 evaluations were at high risk of bias, though nearly all concluded positively. In a matched study of 168,699 patients referred in England, healthcare contacts rose by about 24% in the first six months, and visits to the general practitioner fell slightly by a year (Wilding 2026, abstract read). Grade D for health outcomes.

The Kerala model is described in NU-06 and graded B there for the care of the dying, with the caution that it depends on supervision and a drug supply (THRIVING library, NU-06). It shows that unpaid neighbours will visit the housebound for years if the work is organised, trained and honoured. The Friendship Bench shows lay grandmothers can treat depression (THRIVING library, TR-16, MI-04).

What lonely people say they want. In interviews with 28 lonely older people in England, most preferred groups built around a shared interest to befriending, and were put off by groups labelled as being for the lonely. They saw loneliness as private and not an illness (Kharicha 2017, abstract read).

Intervention	Source	Outcome	Grade
Social cognitive training	Masi 2011	loneliness -0.60 (4 trials)	A, small base
More chances to meet	Masi 2011	no effect on loneliness	A
Befriending	Mead 2010	depression -0.27	A, small
Purposeful group, 12 meetings	Pitkälä 2009	2-year survival 97 against 90%	A, one trial
Community salons	Hikichi 2015	disability HR 0.49 to 0.52	B
Volunteering	Jenkinson 2013	death RR 0.78 in cohorts, not in trials	B
Social prescribing	Bickerdike 2017	unclear	D

12. Not a cure for infection or cancer

In a quarantine experiment, 276 healthy volunteers given rhinovirus were 4.2 times more likely to develop a cold if they had one to three types of social tie than if they had six or more (Cohen 1997, abstract read). That is host resistance at the margin, not a treatment.

For cancer, the history is a warning. Spiegel and colleagues randomised 86 women with metastatic breast cancer and reported that a year of weekly supportive group therapy nearly doubled mean survival, 36.6 against 18.9 months (Spiegel 1989, abstract read). A multicentre trial of 235 women found no survival benefit, though mood and pain improved (Goodwin 2001, abstract read). A 2026 meta-analysis of 32 trials with 5,704 patients, one of whose authors is Spiegel, reports a small effect on survival, HR 0.80 (0.71 to 0.90), with a prediction interval from 0.49 to 1.29 and an estimated median gain of 3.9 months whose confidence interval crosses zero (Asakawa-Haas 2026, abstract read). Among people already ill, religiousness and spirituality did not predict survival (Chida 2009, via THRIVING library, TR-16).

The rule for the book: company eases pain, fear and depression in the sick, and the sick must have it. Nothing in this record allows a gathering, a rite or a visit to stand in for wound care, rehydration, antibiotics or surgery. Grade X for the social body as a substitute for treatment.

13. When isolation becomes illness

Heat. In the Chicago heat wave of July 1995, at least 700 more people died than expected. A study of 339 matched pairs found that not leaving home each day raised the odds of death by 6.7, being bedridden by 5.5, being unable to care for oneself by 4.1, living alone by 2.3 and living on a top floor by 4.7. Air conditioning (OR 0.3), access to transport (0.3) and taking part in group activities or having friends in the area protected (Semenza 1996, abstract read). In the siege of Sarajevo, the old living alone in flats died of cold (THRIVING library, FO-01).

Self-neglect. In 9,318 older people in Chicago, the 1,544 reported to social services for self-neglect had a one-year hazard of death 5.82 times higher (5.20 to 6.51), falling to 1.88 thereafter (Dong 2009, abstract read). A house

going cold, food not eaten, the body unwashed and wounds untended are signs that isolation has become a medical emergency.

Widowhood. The risk of death rises by about 41% in the first six months after a spouse dies and by about 14% thereafter. In the first 24 hours the risk of heart attack is about 21 times the usual (THRIVING library, MI-03). The long loneliness that follows is this report's ground, and the visiting rota extends to it.

Dementia and depression. The Lancet Commission attributes about 3.5% of dementia to social isolation (THRIVING library, CH-12). WHO reports that lonely people are about twice as likely to become depressed (WHO 2025). Both go to the reports that own them, CH-12 and MI-04.

Asking about loneliness. The three-item UCLA scale asks how often a person feels they lack companionship, feel left out, and feel isolated from others. Each answer scores 1 (hardly ever), 2 (some of the time) or 3 (often), for a total of 3 to 9 (Hughes 2004, full text read). Cut-offs vary: one validation suggests 6 or more [VERIFY: Ali 2025, in dementia carers, other studies suggest 5]. In the record, loneliness predicts misery and depression more than death. It is worth asking because it can be relieved, not because it is lethal.

14. The solitary and the stranger

Two pitfalls follow from the tradition's own shadow.

Compulsory sociability. Some people are solitary by temperament and content. Loneliness is a mismatch between wanted and actual company, so pressing company on the content does nothing for them and may harm them. Labelling a gathering as being for the lonely drives the lonely away (Kharicha 2017). The census must count everyone, but the rota and the gatherings must be offered, not imposed. A minimum check that a person is alive and warm may still be justified for the very old and frail living alone, given the Chicago and Sarajevo deaths [OWNER: whether the minimum check is a village duty that applies to those who refuse].

The excluded stranger. Roseto's cohesion was that of an ethnic enclave, and every strong group draws a line. After a fall, newcomers, refugees, the disabled and people of another faith or language will be the most isolated and the least likely to be counted. Durkheim's warning about too much integration applies to the group as well as to the individual. Who belongs, and on what terms the stranger enters, is for GOVERNING after the FALL. This report adds one medical rule: the census counts by presence, not by membership. Anyone sleeping in the village is on it [OWNER].

Evidence grades

Practice or claim	Grade	Tradition says	Record shows	Inference
Social integration and longer life	A for the association, B for cause	Community heals	OR 1.50 pooled, isolation about 1.26 after full adjustment	Real, moderate, partly through behaviour
Loneliness as a cause of death	B, contested	The lonely pine away	1.14 pooled, about 1.0 after adjustment in two cohorts	Relieve it for its own sake
Work and a role	B	Work gives a place	Unemployment 1.63, displacement 50 to 100% in year one	Avoid abrupt loss of role
Purpose (*ikigai*)	B	A reason to live	HR 1.5 without it, RR 0.83 with high purpose	Give roles, do not preach

Practice or claim	Grade	Tradition says	Record shows	Inference
Integration and suicide (Durkheim)	B pattern, D original inference	Belonging protects, in measure	Unmarried and detached at higher risk	See MI-08
Roseto	D	Clan protects the heart	Not different from Framingham	Parable only
Blue Zones habits	B demography, D recipe	Nine habits	Ages partly validated, causes unknown	Do not sell as findings
Befriending, support for loneliness	A, small	Visiting comforts	d about -0.2, depression -0.27	Worth doing, modest
Purposeful small groups	A, one trial	Circle of friends	Survival 97 against 90% at 2 years	Best lead, unreplicated
Community salons	B	A place to meet	Disability HR about 0.5	Strong lead
Social prescribing	D	Connect the patient	High risk of bias	Not evidence of benefit
Visiting the bedbound and the alone	B	Neighbours look in	Kerala reach, Chicago risk factors	Core of the protocol
Social body as cure for infection or cancer	X	Faith and company heal	No survival benefit proven in trials, small at best	Never a substitute
Compulsory group attendance	D, harm inferred	Everyone belongs	Labelled groups drive the lonely away	Offer, do not compel

Means ledger

Practice	Hands and knowledge	Hearth	Garden and still	Village dispensary (300)	District infirmary (3,000)	Hospital before the Fall
Census of the isolated	Neighbours know who lives alone	The same	The same	Written register, wardens, 3-monthly update	Pools village registers, tracks newcomers	Social services lists
Visiting rota	Look in, sit, help	Bring food, check fire and water	Bring produce, mend	Rota sheet, healer reviews weekly	Supervises, takes referrals	Community nursing, home care
Weekly gathering	Meet and talk	Shared meal, warm room	Shared garden or workshop task	Named leaders, 12-week circles	Trains leaders	Day centres, clubs

Practice	Hands and knowledge	Hearth	Garden and still	Village dispensary (300)	District infirmary (3,000)	Hospital before the Fall
Work roles	Tasks by ability	Household tasks	Garden, still, workshop roles	Role list for each person	Guilds and district work	Employment, volunteering schemes
Screening and escalation	Notice signs	Weigh with a scale if any	The same	UCLA-3, MI-04 questions, weight	Depression and dementia care	Psychiatry, geriatrics
Heat and cold watch	Look in	Fuel, water, shade	Shared warm or cool room	Watch list on alerts	District stores of fuel	Alerts, cooling centres

What each rung changes. Hands and the hearth deliver nearly all of what the record supports: being seen, being fed and warmed, and having a task. The dispensary turns goodwill into a list that misses no one and a rota that does not lapse, which is where most failures happen [VERIFY: own inference]. The infirmary adds treatment for the depression, dementia, drink and physical illness that isolation hides. The hospital adds little to the social part itself. Its advantage lay in the treatment of what the visitor finds.

Harm test

Practice	How it harms	Never for	Signs	Action
Compulsory company	Distress, withdrawal, loss of dignity	The content solitary	Avoidance, anger	Offer, accept refusal, keep minimum check only
A register of the vulnerable	Used to exclude, exploit or rob	Any purpose but care	Talk of who is a burden	Healer keeps it, closed to others [OWNER]
Visiting in an epidemic	Carries infection to the frail	Visitors with fever or cough	Cases among the visited	Door or window visits (TR-16)
Gatherings with drink	Falls, fights, drinking alone afterwards	Those drinking heavily	Drunk at or after meetings	Drink rule [OWNER], see FO-01 and MI-04
Belonging that excludes	Isolation of strangers, persecution	Newcomers, the different	Strangers absent from census	Count by presence (section 14)
Overloading carers	Carer illness and death (RR 1.63 for strained spouse carers, THRIVING library, CH-12)	Lone carers	Exhaustion, carer stops coming out	Relief visits, carer on the census
Abrupt end of work	Death rises after loss of role	Men alone, the newly widowed	Withdrawal, drink	Taper roles, find new ones
Company in place of treatment	Delay in treating infection, cancer, dehydration	Everyone who is ill	Fever, bleeding, wasting	Treat by the relevant report, and keep company too

Practice	How it harms	Never for	Signs	Action
Shaming the lonely	Hiding, refusal of help	Everyone	Denial	Do not call groups "for the lonely"

The historical harms are those of the shadow: claims that support controls cancer, which the trials did not bear out (Goodwin 2001), and communities that expelled the stranger, the widow and the old (THRIVING library, CH-12, MI-03).

Red flags

1. **Not seen outside the house for a day, or the door not answered.** In a heat wave or a frost this is an emergency. Go in with a neighbour the same day.
2. **No fire, smoke or water in the house in cold weather, or a hot upper room in a heat wave.** Move the person to a warm or cool shared room.
3. **Found on the floor, confused or unable to get up.** Treat as illness, not as loneliness. Follow CH-12 for falls and delirium.
4. **Food not eaten, weight lost, the body or bedding soiled, sores.** Self-neglect carries a one-year death risk about six times the usual. Daily visits and the healer the same week.
5. **Talk of being a burden, of not wanting to go on, or giving things away.** Do not leave alone. Follow MI-04 and MI-08.
6. **Drinking alone, especially a man who has lost wife or work.** Injury, poisoning and violence follow. Remove the drink if you can and visit daily.
7. **Chest pain or collapse in the days after a death.** Treat as a heart attack (THRIVING library, MI-03, NU-06).
8. **A carer who has stopped coming out.** Both carer and cared-for are at risk. Relieve the carer.

Honest comfort: some isolated old people will die alone whatever the village does, and some will refuse every offer. A village that has looked in, kept the fire lit and found the body within a day has done its duty.

The case against

The strongest case against "the village is medicine" has five parts.

First, the effect is moderate. Isolation and loneliness predict death less strongly than smoking (Batty 2021).

Second, much of it may not be causal. Reverse causation, reporting bias and material confounding may explain psychosocial associations (Macleod and Davey Smith 2003). The loneliness effect vanishes after adjustment for health (Steptoe 2013, Elovainio 2017), and childhood deprivation outpredicts perceived status (Macleod 2005).

Third, interventions rarely move hard outcomes. Effects on loneliness are small (Masi 2011), social prescribing is unproven (Bickerdike 2017), and only one small trial shows a survival gain (Pitkälä 2009).

Fourth, the famous stories fail inspection (Adhikari 2026, Newman 2019).

Fifth, the social body can kill, through excessive integration and through groups that turn on the old, the widow and the stranger.

The answer to the case against is that a village after the Fall does not need a large causal effect to justify looking in on the isolated. The visiting rota finds the fallen, the cold, the starving and the suicidal in time, and that alone saves lives, whatever loneliness does to the heart [VERIFY: own inference, supported by Semenza 1996 and Dong 2009 risk data, not by a trial].

10-line summary

1. Isolation raises mortality by about a quarter after heavy adjustment (HR about 1.26), less than smoking and of the order of being overweight.
2. The famous 50% figure is an unadjusted odds ratio of survival, about 1.3 as a risk ratio.
3. Loneliness on its own predicts depression more than death once health is adjusted for.
4. Losing work raises the risk of death, most for men alone in mid-career, and plant closures show it is partly causal.
5. Unmarried men without work who drink died first in the Soviet collapse, of injury and poisoning.
6. Roseto does not survive inspection, and Blue Zone recipes are unproven.
7. Interventions against loneliness have small effects. Purposeful groups and community salons are the best leads for health.
8. Company does not cure infection or cancer, though it eases pain and fear.
9. Not leaving home daily and self-neglect are the warning signs that isolation has become lethal.
10. A census, a rota, a weekly gathering and a role for each person are cheap and within a village's reach.

Open questions

1. Is the isolation effect causal, and how much of it runs through behaviour and unnoticed illness that a visitor could catch?
2. Would the Finnish Circle of Friends result replicate, and in a poor village without health services?
3. Do salons protect in a place where everyone already works and lives close together, as after a fall?
4. What happens to the isolation effect when the whole population has lost the state at once?
5. Can a village include the stranger without losing the cohesion that protects its own?
6. How many visits a week are enough, and does a visitor who is a stranger help as much as kin?
7. How to measure loneliness in cultures where it is not spoken of?

Sources to read in full

1. Holt-Lunstad, Smith and Layton 2010, Social relationships and mortality risk.
2. Steptoe, Shankar, Demakakos and Wardle 2013, Social isolation, loneliness and all-cause mortality.
3. Batty and colleagues 2021, Are a lack of social relationships and cigarette smoking really equally powerful predictors of mortality?
4. Roelfs and colleagues 2011, Losing life and livelihood.
5. Masi and colleagues 2011, A meta-analysis of interventions to reduce loneliness.
6. Pitkälä and colleagues 2009, psychosocial group rehabilitation trial, with Routasalo 2009.
7. Hikichi and colleagues 2015, the Taketoyo salons.
8. Adhikari, Ogedegbe and Devinsky 2026, read with Egolf 1992, on Roseto.
9. Newman 2019 read with Austad and Pes 2025, on Blue Zone ages.
10. Semenza and colleagues 1996, the Chicago heat wave deaths.

At the bedside after the Fall

The household. Know who on your lane lives alone. Look in on them every day you can, and notice the fire, the food, the water and whether they came out. Give the old and the widowed something to do that someone depends on. Needs: nothing but attention. First failure to expect: everyone assumes someone else is looking in.

The village of 300. In about 60 to 75 households, expect perhaps 20 to 40 people who belong on the census and 5 to 15 who need visits twice a week or daily [VERIFY: own estimate from WHO prevalence, not measured]. In the first week: name wardens, take the census, start the rota and hold the first gathering (Protocols 1 to 3). Visiting

15 people twice a week for 45 minutes, walking included, takes about 25 hours a week, about an hour each from 25 households [VERIFY: own arithmetic]. Needs: a written register, a rota sheet, a warm room for the gathering, the lay healer to read the register weekly. First failure to expect: the rota lapses after the first month, and the stranger is never counted.

The district of 3,000. Pool the village registers, track people moving between villages, train leaders and visitors, and take referrals for depression, dementia, drink and physical illness. Needs: a nurse or healer to supervise village healers, and a store of fuel for the watch lists. First failure to expect: villages send their isolated to the infirmary, which cannot hold them.

Protocols

Protocol 1. The census of the isolated

- ☐ Day 1: the village names one warden for every 10 to 12 households, five to seven in all [OWNER: who appoints them].
- ☐ Days 1 to 3: each warden visits every household and records, for each person: lives alone, has not left the house in the past week, widowed or bereaved of a child in the past year, without work or a task, cannot walk to the gathering place, cares alone for someone bedbound, deaf, blind or without the village language, new to the village in the past year, drinking heavily.
- ☐ Count by presence: everyone who sleeps in the village, member or not [OWNER].
- ☐ Sort each person into three groups. **Daily**: bedbound or not leaving home daily and alone, showing self-neglect, widowed within four weeks, carers at the end of their strength. **Twice weekly**: living alone over 70, widowed within the year, men without work or partner, newcomers without kin, lone carers. **Weekly**: everyone else on the list, invited to the gathering.
- ☐ Ask those willing the UCLA-3. A score of 6 or more is lonely [VERIFY cut-off]. Record refusals and respect them.
- ☐ Day 4: the lay healer copies the lists into the register. The register is used for care alone and shown to no one else [OWNER].
- ☐ Tolerance: done within 7 days, no household missed. Anyone not found is confirmed by two neighbours.
- ☐ Repeat every 3 months, and after any death, disaster, epidemic, heat wave or first frost.

Protocol 2. The visiting rota, extended to the isolated well

This extends TR-16 Protocol 1, which covers the bedbound, gravely ill, newly bereaved and newly delivered (THRIVING library, TR-16).

- ☐ Daily group: one named household visits each day, and a second at least twice a week.
- ☐ Twice weekly group: visits of 20 to 45 minutes [VERIFY, as TR-16].
- ☐ One visitor for no more than three people. Keep the same visitor where possible, and let the visited choose.
- ☐ Each visit: bring something or ask for help with something, so the visit runs both ways. Check the fire, water and food store. Ask about eating, sleep, pain and falls. Ask the two MI-04 mood questions every two weeks.
- ☐ Record on the rota sheet: date, seen or not, and any red flag.
- ☐ Door not answered: try again within 2 hours, then go in with a neighbour the same day.
- ☐ Epidemic: visit at the door or window. No visitor with fever or cough.
- ☐ Weekly: the healer reads the sheet. A missed visit is made up within 24 hours.

Protocol 3. The weekly gathering

- ☐ Once a week, same day, 2 to 3 hours, in a warm room or shade. Fetch those who cannot walk.

- ☐ Build it around a shared task or interest: mending, seed sorting, cooking, singing, teaching children. Never call it a meeting for the lonely.
- ☐ Each time: about 20 minutes of movement suited to the frailest, the task, food and drink, talk.
- ☐ For the lonely who want more, run small circles of 7 or 8 with two leaders, 12 meetings over 12 weeks, after Pitkälä. Review at 12 weeks and let the circle continue if it wishes.
- ☐ Drink at gatherings: [OWNER].
- ☐ Keep an attendance list. Two absences in a row bring a visit.

Protocol 4. A place for each person

The design of work duties and their allocation belongs to GOVERNING after the FALL. This protocol only matches people to roles.

- ☐ For each person on the census, list what they can still do: by hand, by knowledge, seated, lying down.
- ☐ Give each at least one role, used at least weekly, that someone else depends on. Bedbound: teaching, telling, mending, shelling, keeping records, minding a sleeping child. Housebound: seed saving, spinning, accounts. Walking: gate, garden, school, workshop.
- ☐ Men without work or partner: a shared workshop with others, not a solitary task.
- ☐ Never end a working role abruptly. Taper it and find the next one first.
- ☐ Whether the old and disabled have duties or only offers: [OWNER].

Protocol 5. When isolation has become illness

- ☐ Any red flag from the list above: the healer sees the person within 24 hours.
- ☐ Weight lost, food uneaten, soiled bed or sores: daily visits, food brought, CH-12 for frailty.
- ☐ Low mood for two weeks or more: MI-04 screening and treatment.
- ☐ Talk of death or being a burden: MI-08, not left alone.
- ☐ New confusion: CH-12, treat as delirium until shown otherwise.
- ☐ Heavy drinking: daily visits, drink removed if possible, MI-04.
- ☐ Record each case and its outcome at 1 week and 1 month.

Protocol 6. The heat and cold watch

- ☐ Trigger: the first frost, or a run of hot days when houses do not cool at night [VERIFY: no threshold set here].
- ☐ Daily and twice weekly groups are visited twice a day while it lasts.
- ☐ Cold: fire lit and fuel for three days. Those without move to a shared warm room at night.
- ☐ Heat: move them from upper rooms to the coolest place, water at every visit, damp cloth on the skin, watch the urine.
- ☐ The bedridden and those who do not leave home daily are seen first.

Numbers to carry

1. **1.26.** The hazard of death from isolation after full adjustment. Smoking is about 3.
2. **1.0.** Loneliness alone, after adjustment for health, in the two largest cohorts.
3. **1.63.** Unemployment and death, 1.78 in men.
4. **6.7.** The odds of dying in the Chicago heat wave for those who did not leave home daily.
5. **5.8.** One-year death risk with self-neglect.
6. **1.41.** Death risk in the first 6 months of widowhood.
7. **0.2.** The size of the best-tested effect against loneliness.
8. **97 against 90.** Two-year survival in the Finnish groups, 12 meetings, 7 or 8 people.
9. **6.** UCLA-3 score at which to call a person lonely [VERIFY].

References

1. Adhikari S, Ogedegbe OG, Devinsky O. 2026. The Roseto study: selection bias versus social support. Cureus 18(7):e113024. Full text read. https://doi.org/10.7759/cureus.113024
2. Ali AM, Al-Dossary SA, Laranjeira C, and colleagues. 2025. Loneliness among dementia caregivers: evaluation of the psychometric properties and cutoff score of the three-item UCLA Loneliness Scale. Frontiers in Psychiatry 16:1526569. Abstract read. https://doi.org/10.3389/fpsyt.2025.1526569
3. Asakawa-Haas KD, Spiegel D, Bossert L, Garic A, Schwartz K, Voracek M, Tran US. 2026. Psychosocial interventions indicate prolonged survival in cancer patients in a systematic review, meta-analysis, and multiverse meta-analysis of randomized controlled trials. Communications Psychology 4:49. Abstract read. https://doi.org/10.1038/s44271-026-00414-x
4. Austad SN, Pes GM. 2025. The validity of Blue Zones demography: a response to critiques. The Gerontologist 65(12):gnaf246. Full text read. https://doi.org/10.1093/geront/gnaf246
5. Batty GD, Zaninotto P, Elovainio MJ, Hakulinen CA. 2021. Are a lack of social relationships and cigarette smoking really equally powerful predictors of mortality? Analyses of data from two cohort studies. Public Health in Practice 2:100140. Full text read. https://doi.org/10.1016/j.puhip.2021.100140
6. Berkman LF, Syme SL. 1979. Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. American Journal of Epidemiology 109(2):186-204. Abstract read via a secondary chapter. https://doi.org/10.1093/oxfordjournals.aje.a112674
7. Bickerdike L, Booth A, Wilson PM, Farley K, Wright K. 2017. Social prescribing: less rhetoric and more reality. A systematic review of the evidence. BMJ Open 7(4):e013384. Abstract read. https://doi.org/10.1136/bmjopen-2016-013384
8. Bosma H, Marmot MG, Hemingway H, Nicholson AC, Brunner E, Stansfeld SA. 1997. Low job control and risk of coronary heart disease in Whitehall II (prospective cohort) study. BMJ 314(7080):558-565. Abstract read. https://doi.org/10.1136/bmj.314.7080.558
9. Candal-Pedreira C, Rey-Brandariz J, Martín-Gisbert L, Teijeiro A, García G, Ruano-Ravina A, Pérez-Ríos M. 2025. Blue Zones, an analysis of existing evidence through a scoping review. Aging and Disease 17(3):1335-1346. Abstract read. https://doi.org/10.14336/AD.2025.0461
10. Carlson M, Rebok G. 2019. The impact of meaningful volunteer engagement in aging adults: the Baltimore Experience Corps trial. Innovation in Aging 3(Suppl 1):S795-S796. Conference abstract read. https://europepmc.org/article/PMC/PMC6845935
11. CBS News. 2010. More than 230,000 centenarians missing in Japan. News report read. https://cbsnews.com/news/more-than-230000-centenarians-missing-in-japan
12. Cohen R, Bavishi C, Rozanski A. 2016. Purpose in life and its relationship to all-cause mortality and cardiovascular events: a meta-analysis. Psychosomatic Medicine 78(2):122-133. Abstract read. https://doi.org/10.1097/PSY.0000000000000274
13. Cohen S, Doyle WJ, Skoner DP, Rabin BS, Gwaltney JM. 1997. Social ties and susceptibility to the common cold. JAMA 277(24):1940-1944. Abstract read. https://doi.org/10.1001/jama.1997.03540480040036
14. Dong X, Simon M, Mendes de Leon C, and colleagues. 2009. Elder self-neglect and abuse and mortality risk in a community-dwelling population. JAMA 302(5):517-526. Abstract read. https://doi.org/10.1001/jama.2009.1109
15. Durkheim É. 1897. Le suicide: étude de sociologie. Paris, Félix Alcan. Not read, secondary summary only (Wikipedia, Suicide (Durkheim book), with the critiques of Selvin 1965, Pope and Danigelis 1981 and van Poppel and Day 1996 as summarised there). https://en.wikipedia.org/wiki/Suicide_(Durkheim_book)
16. Egolf B, Lasker J, Wolf S, Potvin L. 1992. The Roseto effect: a 50-year comparison of mortality rates. American Journal of Public Health 82(8):1089-1092. Abstract read. https://doi.org/10.2105/AJPH.82.8.1089
17. Elovainio M, Hakulinen C, Pulkki-Råback L, Virtanen M, Josefsson K, Jokela M, Vahtera J, Kivimäki M. 2017. Contribution of risk factors to excess mortality in isolated and lonely individuals: an analysis of data from the UK Biobank cohort study. Lancet Public Health 2(6):e260-e266. Abstract read.

https://doi.org/10.1016/S2468-2667(17)30075-0
18. Fitzpatrick MD, Moore TJ. 2018. The mortality effects of retirement: evidence from Social Security eligibility at age 62. Journal of Public Economics 157:121-137. Abstract read. https://doi.org/10.1016/j.jpubeco.2017.12.001
19. Global BMI Mortality Collaboration. 2016. Body-mass index and all-cause mortality: individual-participant-data meta-analysis of 239 prospective studies in four continents. Lancet 388(10046):776-786. Abstract read. https://doi.org/10.1016/S0140-6736(16)30175-1
20. Goodwin PJ, Leszcz M, Ennis M, and colleagues. 2001. The effect of group psychosocial support on survival in metastatic breast cancer. New England Journal of Medicine 345(24):1719-1726. Abstract read. https://doi.org/10.1056/NEJMoa011871
21. Grigoriev P, Jasilionis D, Stumbrys D, Stankūnienė V, Shkolnikov VM. 2017. Individual- and area-level characteristics associated with alcohol-related mortality among adult Lithuanian males: a multilevel analysis based on census-linked data. PLoS One 12(7):e0181622. Abstract read. https://doi.org/10.1371/journal.pone.0181622
22. Harvard Gazette (Mineo L). 2023. Work out daily? OK, but how socially fit are you? Harvard Gazette, February 2023. Interview read. https://news.harvard.edu/gazette/story/2023/02/work-out-daily-ok-but-how-socially-fit-are-you/
23. Hikichi H, Kondo N, Kondo K, Aida J, Takeda T, Kawachi I. 2015. Effect of a community intervention programme promoting social interactions on functional disability prevention for older adults: propensity score matching and instrumental variable analyses, JAGES Taketoyo study. Journal of Epidemiology and Community Health 69(9):905-910. Abstract read. https://doi.org/10.1136/jech-2014-205345
24. Hikichi H, Kondo K, Takeda T, Kawachi I. 2017. Social interaction and cognitive decline: results of a 7-year community intervention. Alzheimer's and Dementia: Translational Research and Clinical Interventions 3(1):23-32. Abstract read. https://doi.org/10.1016/j.trci.2016.11.003
25. Hoang P, King JA, Moore S, and colleagues. 2022. Interventions associated with reduced loneliness and social isolation in older adults: a systematic review and meta-analysis. JAMA Network Open 5(10):e2236676. Abstract read. https://doi.org/10.1001/jamanetworkopen.2022.36676
26. Holt-Lunstad J, Smith TB, Layton JB. 2010. Social relationships and mortality risk: a meta-analytic review. PLoS Medicine 7(7):e1000316. Full text read. https://doi.org/10.1371/journal.pmed.1000316
27. Holt-Lunstad J, Smith TB, Baker M, Harris T, Stephenson D. 2015. Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspectives on Psychological Science 10(2):227-237. Abstract read. https://doi.org/10.1177/1745691614568352
28. Hughes ME, Waite LJ, Hawkley LC, Cacioppo JT. 2004. A short scale for measuring loneliness in large surveys: results from two population-based studies. Research on Aging 26(6):655-672. Full text read. https://doi.org/10.1177/0164027504268574
29. Jenkinson CE, Dickens AP, Jones K, and colleagues. 2013. Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. BMC Public Health 13:773. Full text read. https://doi.org/10.1186/1471-2458-13-773
30. Jha P, Ramasundarahettige C, Landsman V, and colleagues. 2013. 21st-century hazards of smoking and benefits of cessation in the United States. New England Journal of Medicine 368(4):341-350. Abstract read. https://doi.org/10.1056/NEJMsa1211128
31. Kharicha K, Iliffe S, Manthorpe J, and colleagues. 2017. What do older people experiencing loneliness think about primary care or community based interventions to reduce loneliness? A qualitative study in England. Health and Social Care in the Community 25(6):1733-1742. Abstract read. https://doi.org/10.1111/hsc.12438
32. Kuhn A, Wuellrich JP, Zweimüller J. 2010 and 2018. Fatal attraction? Access to early retirement and mortality. IZA Discussion Paper 5160 (2010) and NBER Working Paper 25124 (2018). Abstracts read, figures differ between versions. https://www.nber.org/papers/w25124

33. Lenz. Undated. Loneliness health risk equivalent to smoking 15 cigarettes. Fact check, secondary only. https://lenz.io/c/loneliness-health-risk-equivalent-smoking-15-cigarettes-1175b5c6
34. Macleod J, Davey Smith G. 2003. Psychosocial factors and public health: a suitable case for treatment? Journal of Epidemiology and Community Health 57(8):565-570. Abstract read. https://doi.org/10.1136/jech.57.8.565
35. Macleod J, Davey Smith G, Metcalfe C, Hart C. 2005. Is subjective social status a more important determinant of health than objective social status? Evidence from a prospective observational study of Scottish men. Social Science and Medicine 61(9):1916-1929. Abstract read. https://doi.org/10.1016/j.socscimed.2005.04.009
36. Marmot MG, Rose G, Shipley M, Hamilton PJ. 1978. Employment grade and coronary heart disease in British civil servants. Journal of Epidemiology and Community Health 32(4):244-249. Abstract read. https://doi.org/10.1136/jech.32.4.244
37. Marmot MG, Bosma H, Hemingway H, Brunner E, Stansfeld S. 1997. Contribution of job control and other risk factors to social variations in coronary heart disease incidence. Lancet 350(9073):235-239. Abstract read. https://doi.org/10.1016/S0140-6736(97)04244-X
38. Masi CM, Chen HY, Hawkley LC, Cacioppo JT. 2011. A meta-analysis of interventions to reduce loneliness. Personality and Social Psychology Review 15(3):219-266. Full text read. https://doi.org/10.1177/1088868310377394
39. Mead N, Lester H, Chew-Graham C, Gask L, Bower P. 2010. Effects of befriending on depressive symptoms and distress: systematic review and meta-analysis. British Journal of Psychiatry 196(2):96-101. Abstract read. https://doi.org/10.1192/bjp.bp.109.064089
40. Newman SJ. 2019. Supercentenarian and remarkable age records exhibit patterns indicative of clerical errors and pension fraud. bioRxiv preprint 704080. Abstract and secondary summaries read. https://doi.org/10.1101/704080
41. Olshansky SJ, Austad S, Herm A, Pes G, Poulain M, and colleagues. 2026. Are blue zones disappearing? Research Square preprint. Abstract read. https://doi.org/10.21203/rs.3.rs-8497718/v1
42. Petrova K, Nevarez MD, Waldinger RJ, Schulz MS. 2024. Emotional support across adulthood: a 60-year study of men's social networks. Psychology and Aging 39(8):933-945. Abstract read. https://doi.org/10.1037/pag0000843
43. Pitkälä KH, Routasalo P, Kautiainen H, Tilvis RS. 2009. Effects of psychosocial group rehabilitation on health, use of health care services, and mortality of older persons suffering from loneliness: a randomized, controlled trial. Journals of Gerontology Series A 64(7):792-800. Abstract read. https://doi.org/10.1093/gerona/glp011
44. Poulain M, Pes GM, Grasland C, and colleagues. 2004. Identification of a geographic area characterized by extreme longevity in the Sardinia island: the AKEA study. Experimental Gerontology 39(9):1423-1429. Abstract read. https://doi.org/10.1016/j.exger.2004.06.016
45. Poulain M, Pes G, Salaris L. 2011. A population where men live as long as women: Villagrande Strisaili, Sardinia. Journal of Aging Research 2011:153756. Abstract read. https://doi.org/10.4061/2011/153756
46. Rebok GW, Parisi JM, Barron JS, and colleagues. 2019. Impact of Experience Corps participation on children's academic achievement and school behavior. Prevention Science 20(4):478-487. Abstract read. https://doi.org/10.1007/s11121-018-0972-8
47. Roelfs DJ, Shor E, Davidson KW, Schwartz JE. 2011. Losing life and livelihood: a systematic review and meta-analysis of unemployment and all-cause mortality. Social Science and Medicine 72(6):840-854. Full text read. https://mcgill.ca/sociology/files/sociology/2011_–_social_science__medicine_0.pdf
48. Routasalo PE, Tilvis RS, Kautiainen H, Pitkälä KH. 2009. Effects of psychosocial group rehabilitation on social functioning, loneliness and well-being of lonely, older people: randomized controlled trial. Journal of Advanced Nursing 65(2):297-305. Abstract read. https://doi.org/10.1111/j.1365-2648.2008.04837.x
49. Semenza JC, Rubin CH, Falter KH, and colleagues. 1996. Heat-related deaths during the July 1995 heat wave in Chicago. New England Journal of Medicine 335(2):84-90. Abstract read.

https://doi.org/10.1056/NEJM199607113350203
50. Shkolnikov VM, Chervyakov VV, McKee M, Leon DA. 2004. Russian mortality beyond vital statistics: effects of social status and behaviours on deaths from circulatory disease and external causes, a case-control study of men aged 20-55 years in Udmurtia, 1998-99. Demographic Research Special Collection 2, article 4:71-104. Full text read. https://doi.org/10.4054/DemRes.2004.S2.4
51. Sone T, Nakaya N, Ohmori K, and colleagues. 2008. Sense of life worth living (ikigai) and mortality in Japan: Ohsaki study. Psychosomatic Medicine 70(6):709-715. Abstract read. https://doi.org/10.1097/PSY.0b013e31817e7e64
52. Spiegel D, Bloom JR, Kraemer HC, Gottheil E. 1989. Effect of psychosocial treatment on survival of patients with metastatic breast cancer. Lancet 2(8668):888-891. Abstract read. https://doi.org/10.1016/S0140-6736(89)91551-1
53. Steptoe A, Shankar A, Demakakos P, Wardle J. 2013. Social isolation, loneliness, and all-cause mortality in older men and women. Proceedings of the National Academy of Sciences 110(15):5797-5801. Full text read. https://doi.org/10.1073/pnas.1219686110
54. Stout C, Morrow J, Brandt EN, Wolf S. 1964. Unusually low incidence of death from myocardial infarction: study of an Italian American community in Pennsylvania. JAMA 188:845-849. Abstract read via secondary sources. https://doi.org/10.1001/jama.1964.03060360005001
55. Stuckler D, King L, McKee M. 2009. Mass privatisation and the post-communist mortality crisis: a cross-national analysis. Lancet 373(9661):399-407. Abstract read. https://doi.org/10.1016/S0140-6736(09)60005-2
56. Su SY, Wang WY, Yuan CX, Lin ZN, Lu XF, Liu FC. 2025. Association of loneliness and social isolation with ischemic heart disease: a bidirectional and network Mendelian randomization study. Biomedical and Environmental Sciences 38(3):351-364. Abstract read. https://doi.org/10.3967/bes2024.170
57. Sullivan D, von Wachter T. 2009. Job displacement and mortality: an analysis using administrative data. Quarterly Journal of Economics 124(3):1265-1306. Abstract read. https://ideas.repec.org/a/oup/qjecon/v124y2009i3p1265-1306..html
58. Tsai SP, Wendt JK, Donnelly RP, de Jong G, Ahmed FS. 2005. Age at retirement and long term survival of an industrial population: prospective cohort study. BMJ 331(7523):995. Abstract read. https://doi.org/10.1136/bmj.38586.448704.E0
59. Waldinger RJ, Cohen S, Schulz MS, Crowell JA. 2015. Security of attachment to spouses in late life: concurrent and prospective links with cognitive and emotional wellbeing. Clinical Psychological Science 3(4):516-529. Abstract read. https://doi.org/10.1177/2167702614541261
60. Wang F, Gao Y, Han Z, and colleagues. 2023. A systematic review and meta-analysis of 90 cohort studies of social isolation, loneliness and mortality. Nature Human Behaviour 7(8):1307-1319. Abstract read. https://doi.org/10.1038/s41562-023-01617-6
61. Watson P. 1995. Explaining rising mortality among men in eastern Europe. Social Science and Medicine 41(7):923-934. Abstract read. https://doi.org/10.1016/0277-9536(94)00405-I
62. Wilding A, Munford L, Sutton M, and colleagues. 2026. Changes in healthcare use and cost associated with referrals to social prescribing link workers in England: a matched case-control cohort study. EClinicalMedicine 99:104102. Abstract read. https://doi.org/10.1016/j.eclinm.2026.104102
63. World Health Organization. 2025. Social connection linked to improved health and reduced risk of early death. News release, 30 June 2025. Read. https://www.who.int/news/item/30-06-2025-social-connection-linked-to-improved-heath-and-reduced-risk-of-early-death
64. THRIVING library, CH-12. Ageing, frailty and dementia. Library document, read in part. Source of Simmons 1945 and Glascock, the Lancet Commission dementia fraction and Schulz and Beach 1999 on carers.
65. THRIVING library, FO-01. What people die of when the system fails. Library document, read in part. Source of the Russian life expectancy figures, Sarajevo, and the rebuttals of Stuckler 2009.
66. THRIVING library, MI-03. Grief, mourning and ritual across cultures. Library document, read in part.

Source of the widowhood mortality figures.
67. THRIVING library, MI-04. Depression and anxiety without pharmaceuticals. Library document, cited for referral only.
68. THRIVING library, MI-08. Suicide. Library document, cited for referral only.
69. THRIVING library, NU-06. Palliative care. Library document, read in part. Source of the Kerala Neighbourhood Network figures.
70. THRIVING library, SY-04. Restricted knowledge. Library document, read in part.
71. THRIVING library, TR-16. Healing as ritual and community. Library document, read in part. Source of the visiting rota, Chibanda 2016 and Chida 2009.