CH-12 Ageing, frailty, dementia and the long illness: care without institutions

HEALING after the FALL, research library, CH-12

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

How to read this

This report covers growing old without a care home. Neighbouring ground is cited, not repeated: - NU-04 holds strength training in the old and the hip fracture record, with its traction and early-sitting paths. - NU-06 holds the last days. NU-01 holds pressure injury, the failing swallow, bladder, bowel and skin. - WO-05 holds traction by hand. FO-01 holds the mortality of collapse, and FO-08 holds rationing. - MI-05 and MI-04 touch behaviour in dementia only in passing. - MI-13 is not written yet. It will hold loneliness, the census of the isolated, the visiting rota and work for the old. This report stops at its border and says so.

Three voices are kept apart: tradition, record and inference. My arithmetic and extrapolation carry [VERIFY]. Village rules the owner must decide carry [OWNER].

1. Findings by section

1.1 Who grows old after the Fall

The record of collapse. Collapse does not always kill the old first. In the Soviet collapse of 1989 to 1994, deaths of men aged 35 to 44 rose 74 per cent, against 25 per cent at 65 to 74 and 14 per cent at 75 to 84. Drink, violence and lost work were the killers (Brainerd and Cutler 2005, via THRIVING library, FO-01).

Siege and cold are different, and they find the old who live alone. In Sarajevo at least 35 residents of one old people's home died of hunger and cold in 1992, and the Nedžarići home had lost 45 to cold by January 1993. The hidden toll fell on old people alone in flats (THRIVING library, FO-01). FO-01 already puts a register of old people living alone into the village's minimum, and this report assumes it exists.

The village of 300. In 2023, people aged 65 and over were 21.6 per cent of the European Union, 19.2 per cent of the United Kingdom, 10.0 per cent of the world and 3.2 per cent of sub-Saharan Africa. The old-age dependency ratio was 33.9 per 100 working-age adults in the EU and 15.4 worldwide (World Bank 2023). A village built from a European population starts with 55 to 70 old people, one from a young population with about 10. The working figure below is 45 [VERIFY, my arithmetic].

Survivor bias. The bedfast, dialysed and insulin-dependent will mostly die early, as in Sarajevo's homes. Pre-Fall rates will therefore overstate the burden in the first years and understate it later, as survivors age without hearing aids, glasses, cataract surgery or blood-pressure tablets [VERIFY, inference].

A year in the working village. Pre-Fall rates predict about 15 fallers and 30 to 40 falls, one fracture, a hip fracture every year or two (THRIVING library, NU-04), and two or three people with dementia, one of them needing someone every waking hour [VERIFY, my arithmetic from the rates below].

1.2 Falls, the long lie and the hip

Falls. At least a third of people over 65 living at home fall each year (Sherrington and others 2019). In New Haven, 32 per cent of 336 people aged 75 and over fell within a year. Of the fallers, 24 per cent had a serious injury and 6 per cent a fracture. Risk added up: 8 per cent fell with no risk factors and 78 per cent with four or more. Sedatives carried an odds ratio of 28.3, cognitive impairment 5.0 and weak legs 3.8, and 44 per cent of falls involved a hazard in the surroundings (Tinetti and others 1988).

The long lie. Of 1,103 people aged 72 and over, 47 per cent of those who fell without injury could not get up unaided at least once. They declined more in daily activities afterwards, 35 against 26 per cent (Tinetti and others 1993). After the Fall there is no alarm pendant. A night on a cold floor brings hypothermia, pressure injury and pneumonia from a fall that broke nothing [VERIFY, inference]. Teaching the old to get up and knocking daily are the cheapest falls measures here, though neither has a trial I could find (Protocol 2). The daily visit itself is MI-13's ground.

The hip with surgery. Across 70 trials, one-year mortality after hip fracture surgery was 24 per cent in the 1980s, 23 in the 1990s and 21 after 1999 (Mundi and others 2014). The brief's 20 to 30 per cent is right.

The hip without surgery: the record. Until the 1950s, hip fracture was treated with traction and bed rest (Handoll and Parker 2008). From 1904 the Whitman method reduced the fracture and held it in plaster for months. Otto Löfberg used a variant in Malmö until 1946. Several fractures seem to have healed, but mortality was high (Önnerfält 2010).

The Cochrane review of five small trials (428 patients) found that traction for extracapsular fractures gave mortality similar to surgery, with slower rehabilitation and more deformity. It called conservative care acceptable where surgery is unavailable (Handoll and Parker 2008). Those patients were fit enough to be randomised, so this is the best case. NU-04 holds the rest: immobility added 5.4 points to six-month mortality, and 17 points in those already needing help to walk (Siu 2006, via THRIVING library, NU-04). WO-05 holds the traction itself.

The hard numbers. A meta-analysis of 18 series of patients not operated on found pooled mortality of 36 per cent at 30 days, 46 per cent at six months and 60 per cent at a year. Two thirds were not operated on because they were already too ill (Loggers and others 2020, summary only).

In the Dutch FRAIL-HIP study, frail nursing-home residents (median age 88) and their families chose with their surgeons. Of 172 patients from 25 hospitals, 88 chose no operation: - thirty-day mortality was 83 per cent without surgery against 25 per cent with it, - quality of life was non-inferior, and adverse events were fewer, 67 against 167, - 51 per cent of proxies rated the quality of dying good to almost perfect (Loggers and others 2022).

What it means. Hip fracture without surgery divides by who breaks the hip. The fit old person, held in traction or sat up early and turned, fed and kept dry, has a real chance of union, especially with an extracapsular fracture. The price is months in bed, deformity and mortality above the surgical figure [VERIFY: no modern series isolates this group]. Displaced femoral neck fractures often fail to unite, which is why nailing replaced plaster [VERIFY]. For the frail, demented or bedfast, a broken hip is usually the last illness, often within a month, and the book must say so. FRAIL-HIP shows that comfort care for them is a legitimate choice, not a failure. Which path the village offers to whom is the owner's rule [OWNER], drafted in NU-04.

1.3 Preventing falls

Exercise: the record. Sherrington and colleagues pooled 108 trials (23,407 people, mean age 76, 77 per cent women, 25 countries):

Programme	Rate of falls	People who fell
All exercise	RaR 0.77 (0.71 to 0.83), high certainty	RR 0.85
Balance and functional	RaR 0.76	RR 0.87
Several types combined	RaR 0.66	RR 0.78
Tai chi	RaR 0.81, low certainty	RR 0.80, high certainty
Resistance only, dance, walking	uncertain	uncertain

Against a baseline of 850 falls per 1,000 person-years, all exercise prevented 195. It reduced falls needing medical care (RR 0.61) and perhaps fractures (RR 0.73, low certainty). Harms were one pelvic stress fracture and one hernia across all the trials (Sherrington and others 2019). The brief's "about 23 per cent" is the rate ratio of 0.77.

Otago. In Dunedin, 233 women aged 80 and over from 17 practices did a home programme. Falls dropped from 1.34 to 0.87 a year, and the hazard of a first injurious fall was 0.61 (Campbell and others 1997, summary only). Across four New Zealand trials (1,016 people aged 65 to 97), falls and fall injuries both fell 35 per cent, more in those over 80 (Robertson and others 2002). As summarised, the programme is 30 minutes of leg strength and balance three times a week with ankle cuff weights, walking twice a week, and four to seven physiotherapist visits in the first two months [VERIFY: the 2003 manual was not read].

Tai chi. The tradition is a Chinese martial practice taught for health, explained through qi and the balance of yin and yang, and done daily in groups in parks across China. The record: Wolf's Atlanta trial gave 200 people aged 70 and over 15 weeks of tai chi and reported fewer multiple falls (Wolf and others 1996). The 47.5 per cent reduction often quoted comes from a press account I could not check [VERIFY]. Gillespie found rate and risk ratios of 0.72 and 0.71 (Gillespie and others 2012). Modern science infers that slow weight-shifting over a narrow base is balance training, whether or not qi exists. Tai chi needs no equipment and no physiotherapist, so it is the most portable programme here.

Everything else. Gillespie and colleagues reviewed 159 trials (79,193 people):

Measure	Effect
Home-safety visit and repair	RaR 0.81, better in high-risk people and with an occupational therapist
Gradual withdrawal of psychotropic drugs	RaR 0.34, one trial of 93 people
Anti-slip shoe device on ice	RaR 0.42, one trial of 109
Podiatry	RaR 0.64
First-eye cataract surgery, pacemakers	RaR 0.66, 0.73
Multifactorial programmes	RaR 0.76, but the number of fallers did not fall
Education alone	No effect
New glasses and eye referral	**RaR 1.57, more falls**
Single-lens glasses outdoors	Fewer falls in the active, more in the inactive
Vitamin D	RaR 1.00 overall, may help the deficient

Inference. The village can do all but the surgery. The glasses finding warns against handing out salvaged spectacles without practice [VERIFY]. Sedatives are the strongest lever. Salvaged sleeping tablets, benzodiazepines and spirits

from the still will cause falls (Tinetti and others 1988, Gillespie and others 2012). Whether the dispensary may give hypnotics to anyone over 70 is a village rule [OWNER].

Vitamin D's reversal. In 1992, 3,270 French care-home women (mean age 84) given calcium 1.2 g and vitamin D3 800 IU daily for 18 months had 43 per cent fewer hip fractures (Chapuy and others 1992). In 2010, 2,256 Australian women given a single yearly dose of 500,000 IU had more falls (IRR 1.15) and fractures (IRR 1.26), worst in the first three months (Sanders and others 2010). In 2022, 25,871 mostly replete adults taking 2,000 IU daily had no fewer fractures, hip HR 1.01 (LeBoff and others 2022). Vitamin D helps the deficient, does nothing for the replete and harms as a bolus. The housebound old in a northern winter after the Fall will resemble Chapuy's women [VERIFY]. Summer sun on face and arms, oily fish, eggs and liver are the source. Salvaged tablets go in small daily doses, never as a megadose.

1.4 Frailty, protein and strength

Frailty by hand. In 5,317 people aged 65 and over, Fried defined frailty as three or more of: losing about 4.5 kg in a year unintentionally, exhaustion, weak grip, slow walking and low activity. Prevalence was 6.9 per cent, and 7.2 per cent became frail over four years. One or two signs raised the odds of becoming frail 2.6-fold. Frailty predicted falls, disability, admission and death, with adjusted hazard ratios of 1.29 to 2.24 (Fried and others 2001).

Without instruments [VERIFY: my adaptations, not Fried's cut-offs]: - weight: a belt taken in two notches, - exhaustion: "everything is an effort" on three or more days a week, - grip: cannot wring out a wet cloth or carry a full 10-litre bucket, - walking: more than about 6 to 7 seconds for 4.5 metres, - activity: sits most of the day.

Protein. The PROT-AGE group advised at least 1.0 to 1.2 g/kg a day over 65, at least 1.2 for the active, 1.2 to 1.5 in illness, and less in severe kidney failure (Bauer and others 2013, summary only). A 60 kg woman needs 60 to 72 g, for example two eggs, half a litre of milk, a bowl of beans and a piece of fish [VERIFY, my arithmetic]. In 62 trials (10,187 people), supplements raised weight 2.2 per cent and cut complications (RR 0.86). Mortality fell only in the undernourished (RR 0.79), not overall (RR 0.92) (Milne and others 2009).

Strength. Resistance training in people in their nineties raised strength by 113 to 174 per cent, and across trials the effect was large (Fiatarone 1990 and 1994, Liu and Latham 2009, via THRIVING library, NU-04, with its Protocol 4). This report adds only that strength work belongs inside the falls programme. The inference: frailty is partly a disease of hunger and the chair. Where the old eat last and sit idle it will be common, and where they eat protein and work it will come later [VERIFY].

1.5 Dementia: how common and what raises the risk

Prevalence doubles about every 5.1 years of age (Jorm and others 1987). Age-standardised prevalence over 60 is 5 to 7 per cent in most regions, 8.5 per cent in Latin America and 2 to 4 per cent in sub-Saharan Africa (Prince and others 2013). The working village of 45 old people will hold two or three people with dementia, and the district 20 to 30 [VERIFY, my arithmetic].

The 2020 Lancet Commission attributed about 40 per cent of dementia to twelve modifiable factors. Hearing loss in midlife was the largest at 8.2 per cent. Then came less education (7.1), smoking (5.2), depression (3.9), social isolation (3.5), head injury (3.4), air pollution (2.3) and hypertension (1.9). Inactivity, diabetes, heavy drinking and obesity each contributed under 2 per cent. Hearing aids appeared to reduce the excess risk (Livingston and others 2020). The 2024 update added high LDL cholesterol and untreated vision loss, raised the total to about 45 per cent, and put hearing loss and LDL at 7 per cent each (Livingston and others 2024, summary only).

The trial evidence is weaker than the fractions. ACHIEVE gave 977 people aged 70 to 84 hearing aids and counselling and found no overall effect on three-year cognitive decline. It found an effect only in a higher-risk subgroup (interaction p = 0.010) (Lin and others 2023).

Inference. The fractions are observational and do not prove prevention. After the Fall hearing aids and glasses fail, head injuries and indoor smoke rise, and blood pressure goes untreated. The village cannot change its dementia rate much. It can change how many old people deafness cuts off (section 1.10).

1.6 Dementia care without drugs

The tradition: Kitwood. Tom Kitwood, a psychologist at Bradford, argued that much of the decline in dementia comes from how people are treated. He named a "malignant social psychology" of infantilising, outpacing, labelling and ignoring the person. Against it he set care that meets the needs for comfort, attachment, inclusion, occupation and identity. He claimed that good relationships could slow or partly reverse the apparent decline (Kitwood 1997, known through a review and catalogue only). Flicker's review praised the aim but noted that the hypotheses were untested and rested on anecdote. It warned that the care is time-hungry and lets carers be blamed for a brain disease (Flicker 1999).

The record. - **Person-centred care.** In CADRES (15 Australian care homes, 289 residents), person-centred care and dementia-care mapping both lowered agitation. Falls were fewer with mapping but more with person-centred care (Chenoweth and others 2009). A plausible reading is that residents free to move fall more [VERIFY]. - **Cognitive stimulation.** Group sessions of themed activity and discussion improved cognition (SMD 0.41), quality of life (0.38) and communication (0.44) across 15 trials and 718 people. They did not change mood, daily function or behaviour, and they did not add to carer strain (Woods and others 2012). In the founding UK trial of 201 people, six had to be treated for one to gain 4 points on the ADAS-Cog (Spector and others 2003). The usual course is 14 sessions twice weekly [VERIFY]. - **Music.** In 22 studies (1,097 people, all in institutions), music probably reduced depression (SMD -0.27) and overall behaviour problems (-0.23), and may have helped well-being and anxiety. It did not change agitation or aggression (-0.07) or cognition (van der Steen and others 2018). Music treats the low mood and the empty afternoon, not the agitated evening. - **Wandering.** There were no randomised trials of anything for wandering at home (Hermans and others 2007). - **WHO.** The ICOPE guidelines, from about 600 trials, set the priorities this report follows: mobility, nutrition, sight, hearing, cognition, mood, falls and support for carers (WHO 2017). The brief dates them 2019, which may mean the later handbook [VERIFY].

The drug comparator. In 15 trials of newer antipsychotics in dementia (3,353 on drug, 1,757 on placebo), deaths within weeks were 3.5 against 2.3 per cent (OR 1.54) (Schneider and others 2005). In DART-AD, 165 care-home residents were randomised to continue or withdraw theirs. Survival on drug against off drug was 70 against 77 per cent at one year, 46 against 71 per cent at two and 30 against 59 per cent at three (HR 0.58) (Ballard and others 2009). In delirium near death, haloperidol shortened survival (Agar 2017, via THRIVING library, NU-06). The doses of salvaged haloperidol are in MI-05. A salvaged antipsychotic used to quieten a demented person trades quiet nights for months of life. Whether the dispensary ever issues one for dementia, and on whose word, is the owner's rule [OWNER]. This report's default is no, except a short course for psychosis that endangers the person or others, reviewed weekly.

Hogeweyk against a real village. De Hogeweyk in Weesp, the Netherlands, houses over 180 people with severe dementia in 27 homes of six or seven (Senior Housing News 2024, summary only). It has streets, a supermarket, a restaurant, a pub, a theatre and a palliative team, and residents stay until they die. Admission requires a Dutch assessment for severe dementia care. A Canadian review found four qualitative studies of European dementia villages and no published evaluation of Hogeweyk's outcomes or costs (CADTH 2020, summaries only). I found no cost per resident.

Hogeweyk is a rich institution imitating a village. The real village already has small households, real work, known neighbours and freedom to walk. It lacks paid staff and a closed perimeter, and its dangers are the road, the river, the fire and winter nights [VERIFY, inference]. It can borrow the design: real tasks, a known walking route with neighbours along it, and some risk accepted as the price of freedom.

1.7 The family as institution and the carer's load

Alzheimer's Disease International estimated 82 billion hours of informal dementia care in 2015: 50.6 billion of help with daily tasks and 31.5 billion of supervision. That is 5.7 hours a day per person with dementia, the work of 40 million full-time workers, and 71 per cent of it was done by women. Informal care was 40 per cent of dementia's global cost and 69 per cent in low-income countries (Wimo and others 2018). In the United States, dementia added 8.5 hours of family help a week when mild, 17.4 when moderate and 41.5 when severe (Langa and others 2001). Severe dementia is a full-time job for one adult before nights are counted.

Among 392 spouse carers, those under strain had 63 per cent higher mortality over four years (RR 1.63, 1.00 to 2.65) (Schulz and Beach 1999). Support changed outcomes. Counselling and support for 406 spouse carers delayed nursing-home placement by a median 557 days (HR 0.72) (Mittelman and others 2006). REACH II's twelve sessions over six months improved carers' quality of life in Hispanic and white families (Belle and others 2006).

Inference. The family is the only care home there will be. It fails as the carer of the dying fails in NU-06, by exhaustion, usually by the third sleepless night (THRIVING library, NU-06). The village's job is to keep it from breaking: a named second carer, one night off in four, a weekly respite half-day and a carers' meeting. Mittelman suggests that counsel and company keep families going more than technique. Who owes how many hours to a neighbour's parent is the owner's rule [OWNER]. The visiting rota proper is MI-13's ground.

1.8 Delirium, feeding and the end of dementia

Delirium as the sign of infection. In an old person, above all one with dementia, a change in the mind over hours or days is an alarm: drowsiness, agitation, picking at sheets, not knowing a daughter. It means infection, dehydration, a full bladder, constipation, a drug or pain until proved otherwise. Delirium affects 8 to 17 per cent of old people arriving at emergency departments and up to 40 per cent of nursing-home residents. Prevention without drugs works best, and no drug prevents it convincingly (Inouye and others 2014, summary only). The Hospital Elder Life Program targeted cognition, sleep, immobility, sight, hearing and dehydration. In 852 people aged 70 and over it cut delirium from 15.0 to 9.9 per cent (OR 0.60) (Inouye and others 1999). Every one of those six measures can be done at home.

A trap: bacteria in the urine without urinary symptoms are found in 25 to 50 per cent of women and 15 to 40 per cent of men in long-term care, and they should not be treated (Nicolle and others 2019, summary only). Cloudy urine in a confused old person is not proof of a urinary infection. Look at the chest, the skin, the bladder and the bowel.

Feeding at the end. Among 323 Boston nursing-home residents with advanced dementia, 54.8 per cent died within 18 months. Eating problems arose in 85.8 per cent, fever in 52.6 per cent and pneumonia in 41.1 per cent. Six-month mortality was 38.6 per cent after an eating problem began and 46.7 per cent after pneumonia. Where proxies understood the likely course, residents received fewer burdensome treatments at the end (OR 0.12) (Mitchell and others 2009). No trial supports tube feeding in advanced dementia, and seven observational studies found no survival benefit (Sampson and others 2009).

Inference. When a person with advanced dementia stops eating, dying has usually begun. Careful hand feeding, upright sitting and mouth care are the treatment (THRIVING library, NU-01, NU-06). The family is told early, before the first pneumonia, so that it can choose comfort calmly.

1.9 Plants for memory

No plant reaches grade B for treating dementia, and none prevents it.

Ginkgo biloba, leaf (maidenhair tree). - *Tradition:* Chinese medicine uses the seeds and leaves for asthma, cough, tinnitus and the heart. The European memory use is modern, built on a German standardised leaf extract (EGb 761).

The powdered leaf has a traditional European use only for heavy legs and cold hands and feet (EMA 2015). - *Record:* the Cochrane review found 36 trials, nine lasting six months (2,016 people), with inconsistent results. Three of the four most recent found no difference (Birks and Grimley Evans 2009). A later analysis of nine EGb 761 trials (2,561 people) found a benefit, mainly at 240 mg a day (Tan and others 2015). For prevention, 3,069 people aged 75 and over took 120 mg twice daily for a median 6.1 years. Dementia occurred at 3.3 against 2.9 per 100 person-years (HR 1.12) (DeKosky and others 2008). - *Inference:* a small possible symptomatic benefit from the standardised extract (grade C), and no prevention (grade X). The village cannot make that extract. Home leaf tea is an untested product carrying the ginkgolic acids that the pharmacopoeial extract removes. Those acids are allergenic and genotoxic (EMA 2015). - *Doses:* EMA gives 120 to 240 mg of refined dry extract daily (EMA 2015). The trials used 240 mg (DeKosky and others 2008, Tan and others 2015). The sources agree. No second source gives a leaf-tea dose for memory. - *Lookalikes and parts:* the fan-shaped two-lobed leaf is unmistakable. The danger is the seed: its fleshy coat burns the skin, and its kernel holds ginkgotoxin, which has caused seizures in children who ate roasted seeds.

Sage, Salvia officinalis, leaf. - *Tradition:* Gerard wrote in 1597 that sage quickens the nerves and the memory (Gerard 1597, read only as quoted). - *Record:* in an Iranian trial of people aged 65 to 80 with mild to moderate Alzheimer's disease, 60 drops a day of sage extract for four months improved cognition over placebo. Agitation was less than on placebo, but there were more cholinergic side effects. The sample was 30 to 42, depending on the account (Akhondzadeh and others 2003, abstract only). Spanish sage oil (Salvia lavandulaefolia) improved word recall in healthy young people (Tildesley and others 2003). Neither has been replicated in a large dementia trial. - *Inference:* sage inhibits acetylcholinesterase in the laboratory, the dementia drugs' mechanism. One small trial gives grade C. - *Doses:* the Iranian trial used 60 drops of extract a day. The EMA draft monograph gives 1 to 3 g of leaf as tea up to three times a day for indigestion, not memory, for at most two weeks [VERIFY: draft text]. Product, purpose and duration differ, so there is no agreed memory dose. - *Harm:* thujone causes seizures. EMA judged the oil's benefit-risk negative and set a thujone ceiling of 6 mg a day for at most two weeks (EMA 2016). Daily use for memory breaches that limit [VERIFY: thujone in village leaf is unknown]. - *Lookalikes:* other Salvia species are not substitutes. Wormwood (Artemisia absinthium) is a richer thujone source.

Huperzine A from Huperzia serrata (Lycopodium serratum, toothed clubmoss), whole plant. - *Tradition:* in Chinese folk medicine, Qian Ceng Ta treated contusions, strains, swelling, fever, blood in the urine and schizophrenia (Ma and others 2007, known through citing reviews). Memory was not among its old uses. Huperzine A was isolated in China in the 1980s and studied as a drug. - *Record:* twenty Chinese trials (1,823 people) found gains at 8 to 16 weeks, mostly at high risk of bias (Yang and others 2013). The Cochrane review for mild impairment found no adequate trial (Yue and others 2012). The US phase II trial (210 people) found no benefit at 200 micrograms twice daily, its primary outcome. A gain at 400 micrograms twice daily at 11 weeks had faded by 16 weeks (Rafii and others 2011, summary only). - *Inference:* a real cholinesterase inhibitor with a weak record outside China. Grade C. - *Doses:* the US trial used 400 to 800 micrograms a day (Rafii and others 2011). Chinese trials mostly used less [VERIFY: doses not extracted]. The plant holds 0.08 to 0.18 mg per g dry weight, so a tea cannot be dosed. Cholinergic poisoning from tea brewed in error from a related clubmoss is reported secondarily [VERIFY]. - *Harm:* nausea, vomiting, sweating, drooling and a slow pulse. Not with a slow heart, asthma or salvaged dementia drugs. - *Lookalikes and supply:* the clubmosses look alike and differ in alkaloid content. The plant takes 8 to 10 years to grow and is over-harvested. Whether villagers collect it is the owner's decision [OWNER]. My advice is no.

1.10 Hearing, sight and isolation

Wax. Impacted wax is found in up to 57 per cent of nursing-home residents. Of hospitalised over-65s with impaction, 75 per cent heard better after removal. Soften for 15 to 30 minutes, or with olive oil for three or four nights. Then irrigate at body temperature, pulling the ear up and back, with a 20 to 30 ml syringe. Irrigation alone works about 70 per cent of the time. Saline is as good as any drop. Drops alone clear 14 to 35 per cent of ears over one to four days (McCarter and others 2007). The Cochrane review of drops was inconclusive (Burton and Doree 2009). Never irrigate a known perforation, an ear with grommets, past surgery or discharge, or one that has caused vertigo before

(McCarter and others 2007).

Trumpets, salvaged aids and lip reading. I found no trial or series, so this is inference [VERIFY]. An ear trumpet is a cone that gathers sound into the canal. The nineteenth century made them of tin and horn, a village tinsmith can make one, and a rolled-card cone tests the idea first. Salvaged aids need zinc-air cells, which will not keep for years. Lip reading costs nothing: light on the speaker's face, the same height, slower rather than louder, rephrased rather than repeated. The census of the deaf and isolated belongs to MI-13.

Sight. Cataract surgery reduced falls, but it is surgery and not covered here (Gillespie and others 2012). New glasses without practice increased falls (section 1.3). A light on the night route to the latrine prevents both falls and delirium [VERIFY, inference].

1.11 Incontinence and skin

Pelvic floor muscle training cured stress incontinence in 56 per cent of women against 6 per cent of controls (RR 8.38, high quality, 31 trials, 1,817 women) (Dumoulin and others 2018). It needs only teaching, though most of those women were younger than the frail old [VERIFY]. Prompted voiding means asking at fixed times, taking the person to the toilet and praising success. It modestly reduced wetting in five trials of 355 old people (Eustice and others 2000). In dementia, much "incontinence" is failing to find the latrine in time. A clear lit route, easy clothes, a commode and a round every two to three hours by day are the treatment [VERIFY, inference]. Skin, pressure injury and washing belong to NU-01, which found that the surface matters more than the turning clock.

1.12 The old in scarcity: the ethnographic record

The romance. The honoured elder is real in part. In 71 societies, Simmons found the aged valued as stores of knowledge. He called property rights "lifesavers for the aged". He found food taboos reserving choice foods for the old among the Inuit, Omaha, Pomo, Iban, Arunta and Pukapuka. But he concluded that respect for age "has resulted from social discipline" (Simmons 1945, through Baker and Jacobsen 2025 and HRAF).

Neglect and killing. Simmons found killing or abandoning the old most common where climate was severe, residence impermanent and food irregular (Simmons 1945, p 240, as quoted). Glascock split the "intact" old from the "decrepit". He found that death-hastening (abandonment, withholding food or killing) fell on the decrepit, in simpler societies and in times of deprivation, alongside respect for the intact old in the same societies (Glascock and Feinman 1981, Glascock 1982, HRAF summaries only, no counts read). Among forest-period Ache in Paraguay, violence caused 33 per cent of deaths of people aged 60 and over, against 0 to 8 per cent in other forager groups (Gurven and Kaplan 2007, table 5 [VERIFY: my reading of the column]). Hill and Hurtado describe these killings, but I could not read their monograph (Hill and Hurtado 1996). For the Netsilik Inuit, Rasmussen's 1920s reports are the classic source on abandoning the old in famine winters. I read only secondary accounts, so no figure is given (Rasmussen 1931).

What the old give back. Foragers who reach 45 typically live another 12 to 24 years (Gurven and Kaplan 2007). Hadza children's growth tracked their grandmother's foraging once a new sibling arrived (Hawkes and others 1998). Across 45 studies, maternal grandmothers improved child survival in 9 of 13 populations (Sear and Mace 2008). Among the Tsimane of Bolivia, food and labour flow from old to young until late in life (Gurven and others 2012). A fracture goes with stopping hunting, about 397 kcal a day lost, but not with stopping tool-making (Stieglitz and others 2020).

Inference. Neither romance survives the record. Scarcity has repeatedly turned communities against the decrepit old while they still valued the capable. The line falls at dependency, not age. The old give childcare, skill, memory, arbitration and work fit for a weak body: tools, mending, spinning, teaching, guarding. A village should expect Glascock's pressure in its first famine winter and decide beforehand what it will not do [OWNER].

Rationing. FO-08 found age-based triage criticised as ageist. The SOFA score predicted death worse than age alone (AUC 0.59 against 0.66), and the public allocated against people over 60. FO-08's rule is reassessment, never withdrawal on a single judgement (THRIVING library, FO-08). Frailty, not age, predicts the course of a broken hip (Fried and others 2001, Loggers and others 2022), so a rule by age would sacrifice fit 80-year-olds for frail 65-year-olds [VERIFY, inference]. How food is shared in famine is the owner's rule [OWNER].

2. Evidence grades

Practice	Use	Grade	Basis
Strength and balance exercise, tai chi	Falls	A	Sherrington 2019, Robertson 2002
Home-hazard repair, sedative withdrawal	Falls	A	Gillespie 2012
New glasses without practice	Falls	X	Gillespie 2012
Daily vitamin D and calcium, deficient	Hip fracture	A	Chapuy 1992
Vitamin D, replete or yearly megadose	Fracture	X	LeBoff 2022, Sanders 2010
Rising from the floor, daily knock	Long lie	D	Tinetti 1993 shows the need only
Traction, fit patient, extracapsular hip	Union	B	Handoll 2008, NU-04
Comfort care, frail patient, hip	Quality of dying	B	Loggers 2022
Protein 1.0 to 1.2 g/kg, resistance work	Frailty	A	Milne 2009, NU-04
Cognitive stimulation, music	Cognition, mood	A	Woods 2012, van der Steen 2018
Person-centred care	Agitation	A, more falls	Chenoweth 2009
Antipsychotics for dementia behaviour	Calm	X	Schneider 2005, Ballard 2009
Multicomponent delirium prevention	Delirium	A	Inouye 1999
Treating urine bacteria without symptoms	Confusion	X	Nicolle 2019
Tube feeding, advanced dementia	Survival	X	Sampson 2009
Carer counselling and support	Placement delayed	A	Mittelman 2006
Ginkgo extract	Symptoms, prevention	C, X	Birks 2009, DeKosky 2008
Sage, huperzine	Memory	C	Akhondzadeh 2003, Yang 2013, Rafii 2011
Softening and irrigation	Wax	B	McCarter 2007
Ear trumpet, lip reading	Hearing	D	No record read

Pelvic floor training, prompted voiding	Incontinence	A, B	Dumoulin 2018, Eustice 2000

3. Means ledger

Rung	What this chapter needs there, and what it changes
Hands	Tai chi and Otago movements, rising from the floor, frailty signs, lip reading, prompted voiding, pelvic floor teaching, Kitwood's manner, delirium seen in a familiar face. Prevents a fifth to a third of falls and catches delirium early.
Hearth	Protein from eggs, milk, beans and fish. Water by the bed. A lamp on the night route. A commode. Olive oil for wax. Summer sun. Prevents frailty, dehydration delirium and the night fall.
Garden and still	Sand ankle weights, a firm chair, forged handrails, winter studs, a tin ear trumpet, a 20 ml syringe. Sage with its two-week limit. The still is a falls risk for the old [OWNER].
Village dispensary	Lay leader for falls and dementia plans, the FO-01 register, salvaged glasses with a walking test, small-dose vitamin D, a locked rule on hypnotics and antipsychotics [OWNER], the carers' rota.
District infirmary	Traction beds and nursing (NU-04, WO-05), a nurse to find the infection behind delirium, antibiotics, morphine for the broken hip and the dying (NU-06). Changes survival of the fit with hip fracture and comfort for all.
Hospital before the Fall	Hip surgery within 48 hours (about 20 per cent dead at a year), cataract surgery, hearing aids, pacemakers, blood tests, cholinesterase inhibitors of small benefit. None will return soon.

4. Harm test

1. **Exercise.** Rare stress fractures and hernia (Sherrington and others 2019). Start seated, holding a chair. Pause for chest pain, new breathlessness, fainting or a hot swollen joint.
2. **Ankle weights.** Too heavy strains joints. Start at 0.5 to 1 kg and add 0.5 kg only when ten lifts are easy [VERIFY].
3. **Sedative withdrawal.** Abrupt stopping after long use can bring fits and delirium. Taper by a quarter every two weeks [VERIFY: no source read here].
4. **Vitamin D.** A yearly megadose increased falls and fractures (Sanders and others 2010).
5. **New glasses.** More falls outdoors with new or multifocal lenses (Gillespie and others 2012). Practise indoors first.
6. **The broken hip in bed.** Pressure injury within days, pneumonia, clots, constipation and delirium (THRIVING library, NU-01, NU-04).

7. **Antipsychotics.** Death, stroke, falls, rigidity and swallowing failure (Schneider and others 2005, Ballard and others 2009). Restraint causes injury and terror (THRIVING library, MI-05).
8. **Ginkgo.** Bleeding with anticoagulants, aspirin or NSAIDs, including one subdural haematoma. Stop before any operation (EMA 2015). Across 18 trials, the extract did not change clotting tests except slightly at 240 mg or more (Kellermann and Kloft 2011). Seeds cause seizures in children, and the seed coat burns the skin.
9. **Sage.** Thujone seizures with long use, high doses or the oil. Never give the oil by mouth. Avoid in epilepsy and pregnancy (EMA 2016).
10. **Huperzine.** Slow pulse, sweating, vomiting, drooling. Not with a slow heart, asthma, ulcer or salvaged donepezil, rivastigmine or galantamine.
11. **Ear irrigation.** Perforation, infection, vertigo, and pain from cold water (McCarter and others 2007).
12. **Forced or tube feeding at the end.** Aspiration, restraint, distress, no longer life (Sampson and others 2009).
13. **The carer.** Exhaustion, illness and death (Schulz and Beach 1999), and neglect or violence towards the person cared for [VERIFY: no rate found].

5. Red flags

- **Cannot stand after a fall, leg short and turned out.** Probable hip fracture. Pain relief, leg splinted to leg, warmth, and a path chosen with the family (NU-04) [OWNER]. In the frail, say honestly that this may be the last illness.
- **Found on the floor after hours.** Warm slowly, give fluids, check the skin, and watch the chest for three days.
- **Sudden confusion, drowsiness or agitation.** Delirium. Go to Protocol 5.
- **Fever with fast breathing in advanced dementia.** Pneumonia, often the end (Mitchell and others 2009). Comfort and the NU-06 plan.
- **Stops eating and drinking in advanced dementia.** Usually dying. Offer, never force.
- **Headache, drowsiness and vomiting days after a knock on the head, especially on ginkgo or aspirin.** A possible bleed on the brain that the village cannot drain. Comfort, and tell the family.
- **Weight loss with exhaustion and weakness.** Frailty or hidden disease. Feed, and look for cancer, tuberculosis and depression (THRIVING library, MI-04).
- **A carer who cannot sleep, weeps, shouts or hits.** The household is breaking. Relieve them tonight, not next week.

6. The case against

- **Against home falls programmes.** Adherence outside trials is poor, and trial volunteers are fitter and keener than most old people. Resistance-only, walking and dance programmes did not clearly work (Sherrington and others 2019). Multifactorial programmes reduced falls but not fallers (Gillespie and others 2012). A village without a physiotherapist should expect less than 23 per cent [VERIFY].
- **Against conservative hip care.** The surgeons' case, made by the whole move to nailing, is that bed rest kills (Önnerfält 2010, Handoll and Parker 2008). FRAIL-HIP's 83 per cent thirty-day mortality states it plainly (Loggers and others 2022). Teaching traction may give families false hope.
- **Against Kitwood.** Leon Flicker's critique holds: the theory was untested, and the burden falls on carers, who may then be blamed for a brain disease (Flicker 1999). CADRES found more falls with person-centred care (Chenoweth and others 2009).
- **Against the dementia village.** CADTH found no evaluation of Hogeweyk and asked for evidence on outcomes and costs before copying it (CADTH 2020).
- **Against the plants.** Ginkgo failed the largest prevention trial (DeKosky and others 2008) and was inconsistent in treatment (Birks and Grimley Evans 2009). The US huperzine trial missed its primary endpoint (Rafii and others 2011).
- **Against the useful elder.** Under famine, communities abandoned or killed the decrepit old (Simmons 1945,

Glascock 1982). A book that praises the old as an asset must not make care conditional on usefulness.

7. 10-line summary

1. A third of over-65s fall each year. Exercise cuts falls by about 23 per cent, and combined programmes by about a third.
2. Withdrawing sedatives and repairing homes come next. New glasses without practice raise falls.
3. Vitamin D helps the deficient in daily doses and harms as a yearly megadose.
4. A broken hip kills 20 to 25 per cent within a year after surgery, 60 per cent without it in mixed series, and 83 per cent of frail residents within a month.
5. Frailty can be judged by hand, and protein and resistance work delay it.
6. Dementia doubles every five years of age. Hearing loss is the largest modifiable factor, but treating it has not been shown to prevent dementia.
7. Cognitive stimulation, music and person-centred care help modestly. Antipsychotics halve three-year survival.
8. Severe dementia costs about 40 hours of family care a week, and the strained carer's own mortality rises.
9. Delirium means infection, dehydration or a drug until proved otherwise. Tube feeding does not prolong life in end-stage dementia.
10. No memory plant reaches grade B. Scarcity has turned communities against the decrepit old.

8. Open questions

- How does a fit 75-year-old fare with a broken hip, well nursed, without surgery? No modern series isolates the group.
- Does teaching people to get up shorten the long lie? I found no trial.
- How much do falls classes achieve when lay leaders teach them?
- Would simple amplification reduce isolation and depression, even without preventing dementia?
- What do dementia villages cost, and what do they change?
- Where should the line fall between freedom to wander and protection?
- How common was death-hastening in famine years, in Glascock's counts?
- How much thujone does village sage contain?

9. Sources to read in full

1. Sherrington and others 2019.
2. Gillespie and others 2012.
3. The Otago Exercise Programme manual, 2003, not read here.
4. Loggers and others 2022.
5. Livingston and others 2020 and 2024.
6. Kitwood 1997, with Flicker 1999.
7. Wimo, Gauthier and Prince 2018.
8. Mitchell and others 2009.
9. Gurven and Kaplan 2007, and Simmons 1945.
10. EMA 2015 on ginkgo leaf.

At the bedside after the Fall

Household. *To start:* the five frailty signs and the delirium alarm. The Protocol 1 exercises three times a week with any old person in the house, and the Protocol 3 hazard walk. A lamp on the night route, water by the bed, and practice getting up from the floor. Eggs, milk or beans daily. *First failure to expect:* an old person found on the floor in the morning, or a lone carer of a demented parent who stops sleeping within a fortnight.

Village of 300. *To start:* two people trained to lead a falls class twice a week. The FO-01 register with a daily knock. A rule on sedatives and spirits for the over-70s [OWNER]. A dementia care plan (Protocol 4) for each affected household, with a named second carer and weekly respite [OWNER]. A wax syringe, olive oil, a tinsmith's ear trumpet and a monthly carers' meeting. *First failure to expect:* class attendance halves by the third month, and the first hip fracture arrives with no decision made about care without surgery.

District of 3,000. *To start:* ten beds that take traction (NU-04, WO-05), nurses who turn, feed and clean mouths, morphine, and antibiotics for the infections behind delirium. A register of falls, hip fractures and dementia to learn the real rates. A reading-glasses bank with a walking test. Rules on antipsychotics, on rationing by frailty rather than age, and on famine-time duties to the old, written before they are needed [OWNER]. *First failure to expect:* beds filled by frail people with broken hips who die within a month, and a demand to ration by age in the first famine winter.

Protocols

Protocol 1. The falls-prevention programme

Who: everyone over 70, and anyone over 60 who has fallen, walks slowly or shows frailty signs. One trained leader per 10 to 15 people.

1. **Screen.** Ask about falls in the past year. Time a 4.5 m walk at usual pace. Time five rises from a chair without arms. More than about 15 seconds suggests weakness [VERIFY: common clinical cut-off, no source read].
2. **Strength, three times a week, about 30 minutes.** Sand-filled cloth ankle weights from 0.5 to 1 kg [VERIFY]. Seated knee straightening, standing hip extension and side leg raise behind a chair, heel and toe raises, sit to stand. Two sets of 10 of each. Add 0.5 kg when 10 are easy. Stronger people follow NU-04 Protocol 4.
3. **Balance, the same days.** Feet together, then heel to toe, then one leg. Walk heel to toe, backwards and sideways, turning and stepping over a low object. Progress over weeks from two hands on a chair to one, then none.
4. **Or tai chi.** One hour twice a week in a group, slow form, for at least 15 weeks, then ongoing.
5. **Walking.** 30 minutes twice a week, with a stick if needed.
6. **Visits.** The leader visits each newcomer at home in weeks 1, 2, 4 and 8, then monthly.
7. **Drugs and drink.** List every pill. Taper sedatives and sleeping tablets with the dispensary by about a quarter every two weeks [VERIFY]. No spirits at night for those who fall.
8. **Feet and eyes.** Firm, closed, low-heeled shoes with a back. Studs or grips on winter soles. Single-lens glasses outdoors, with new glasses practised indoors for a week.
9. **Food.** Protein 1.0 to 1.2 g/kg a day, some at every meal.
10. **Record and pause.** Falls per person per month, attendance, and the chair test every three months. Pause for chest pain, new breathlessness, fainting, a hot swollen joint or an injurious fall, then resume after review.

Tolerance: expect a fifth to a third fewer falls in those who keep coming for six months. Expect half to drop out by month three without visits.

Protocol 2. Getting up from the floor and the daily knock

1. Teach it while the person is well, on a rug, with a helper and a chair.
2. Roll to the side, then onto hands and knees, and crawl to a firm chair or bed.
3. Put the stronger foot flat, with hands on the seat. Push up, turn, sit and rest.
4. If they cannot rise: slide onto a rug or blanket, cover up, keep the legs moving and bang or shout at intervals. Keep a blanket and water at floor level in the bedroom.
5. Everyone on the FO-01 register gets a knock or a word by 10 am daily. No answer means entering the house [OWNER].
6. After any long lie: warm slowly, give fluids, check hips, sacrum and heels, and watch the chest for three days.

Protocol 3. The home-hazard walk

1. Walk the routes from bed to latrine, door, hearth and well with the person.
2. Remove or nail down loose rugs. Clear cords, tools and clutter.
3. Light the night route with a stable lantern.
4. Fit hip-height handrails at steps and the latrine. Raise a low latrine or commode seat.
5. Whitewash step edges.
6. Set the bed so the feet are flat with the knees at right angles, with a stick within reach.
7. In winter, clear ice and spread ash or grit.
8. Repeat after any fall.

Protocol 4. The dementia care plan

At diagnosis (decline in memory and daily tasks over months, with no fever and no sudden change): 1. **Check the mimics.** Wax and deafness, poor sight, depression (MI-04), drugs and drink, hunger and pellagra (HY-08), thyroid. 2. **Family meeting.** The person while they can take part, the main carer, a named second carer and the healer. Agree who does what, who has the night, the weekly respite half-day, and wishes for the end: no tube feeding, antibiotics for pneumonia or not, and care of a broken hip without surgery [OWNER for village rules]. 3. **Routine.** The same order of day, the same faces, fixed waking and meals. A daylight walk every morning. A real task: peeling, sorting, sweeping, folding, minding animals. 4. **Orientation and manner.** A calendar board, the season named, faces named on greeting ("It's Anna, your daughter"). Correct gently or not at all, and answer the feeling, not the fact. Speak to the person, not about them. Never hurry, mock, scold or treat them as a child. 5. **Stimulation and music.** A group session twice a week for seven weeks, then weekly: songs, old photographs, village news, simple word games. The songs of their youth sung together at least twice a week and in the low afternoon. 6. **Wandering.** Walk with them on a known route and tell the neighbours along it. Sew a name cloth into the coat. Secure only the dangers: fire, river, well, tools. Never tie them. 7. **Agitation.** First look for pain, a full bladder, constipation, hunger, thirst, cold, fear or infection (Protocol 5). Then quiet, company, music and a walk. No salvaged antipsychotic without the village rule and a weekly review [OWNER]. 8. **Continence.** Toilet every 2 to 3 hours by day and before sleep. A lit route, easy clothes, a commode by the bed. Pelvic floor exercises while they can follow them. 9. **Eating.** Finger food, one dish at a time, time to eat, upright, protein first. Weigh monthly. 10. **Carers.** One night in four off. A half-day off each week. A monthly carers' meeting. Watch the main carer for exhaustion. 11. **The late stage.** Careful hand feeding, mouth care and turning on a soft surface (NU-01). When eating stops, comfort and the NU-06 plan, with the family told early.

Protocol 5. The delirium round

1. Note when the change began. Sudden means delirium until proved otherwise.
2. Take temperature, pulse and breathing rate. Listen to the chest. Look at the back, heels, legs and mouth.
3. Feel for a full bladder above the pubic bone. Ask when the bowels last opened.
4. Count fluids. Aim for 1.5 litres a day unless the heart or kidneys forbid it [VERIFY].
5. Review every drug, herb and drink of the past week.
6. Do not treat cloudy or smelly urine alone (Nicolle and others 2019).
7. Treat what is found: fluids, bowel care, bladder drainage, and antibiotics at the district for a clear chest or skin infection.
8. Keep glasses on and ears clear, lamps lit at night, a familiar face present, and a walk by day.
9. Recheck every 4 hours for 48 hours. Worsening, or no better at 48 hours, means the district or the end-of-life conversation.

Protocol 6. Ear wax removal

1. Look in with a light. Stop if there is a known perforation, discharge, pain, past ear surgery or vertigo from irrigation before.
2. Olive oil, three drops at bedtime for 3 to 4 nights, head tilted for a few minutes after.
3. Fill a 20 to 30 ml syringe with boiled water cooled to body heat, tested on the inner wrist.
4. Sit the person upright with a bowl under the ear. Pull the ear up and back.
5. Aim the jet gently along the top wall of the canal, never straight at the drum.
6. Use up to 3 or 4 syringes. Stop for pain, dizziness or blood.
7. If wax remains, soften for 3 more days and repeat. Retest with a whisper at arm's length.

Numbers to carry

1. One in three people over 65 falls each year.
2. Exercise cuts falls by about a quarter, and combined programmes by a third.
3. A broken hip kills 1 in 5 within a year with surgery, about 3 in 5 without, and most frail residents within a month.
4. Withdrawing sedatives cut falls by two thirds in one trial.
5. Protein for the old: 1.0 to 1.2 g per kg a day.
6. Dementia prevalence doubles every 5 years of age.
7. Severe dementia takes about 40 hours of family care a week, and a strained carer's mortality rises by 60 per cent.
8. Three-year survival was 30 per cent on antipsychotics against 59 per cent off them.
9. More than half of people with advanced dementia die within 18 months, and 9 in 10 develop eating problems.
10. Wax blocks hearing in up to half of nursing-home residents, and irrigation clears about 7 in 10.

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