CH-05 Pain that stays: arthritis, back pain, neuropathy and the non-drug and plant evidence

HEALING after the FALL, research library, CH-05

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

1. Findings by section

This report builds on the library and does not repeat it. Willow, meadowsweet, capsaicin, devil's claw and turmeric, with doses and the village pain ladder, are in ME-06. Opium and the locked chest are in ME-05. Colchicine is in ME-07. Massage and manipulation are in TR-12, acupuncture in TR-03, leprosy and numb feet in IN-15, thiamine in HY-08 and fractures in WO-05 (THRIVING library, ME-05, ME-06, ME-07, TR-03, TR-12, IN-15, HY-08, WO-05). Pacing, sleep and talking treatments are left to NU-08. Grades: A trials or systematic reviews, B consistent clinical series, C convergent tradition with plausible pharmacology, D single tradition or anecdote, X ineffective or harmful. Rules that turn on opioid policy, or that the owner must set, are marked [OWNER].

1.1 Low back pain: what it is and how it runs

Scale. The Lancet series of 2018 opened with Jan Hartvigsen and colleagues. Low back pain is the leading cause of disability worldwide, and the years lived with disability from it rose by 54 per cent between 1990 and 2015. For nearly everyone no specific cause can be found. Most episodes recover quickly, recurrence is common, and a minority become persistent and disabling (Hartvigsen 2018, abstract). Nadine Foster and colleagues found that guidelines largely agree, that advice, staying active and exercise are underused, and that imaging, opioids, injections and surgery are overused. Almost all the trials come from rich countries (Foster 2018, abstract).

Natural history. Luciola Menezes Costa and colleagues pooled 33 inception cohorts with 11,166 people. In acute back pain the mean pain score on 100 fell from 52 at the first visit to 23 at six weeks, 12 at 26 weeks and 6 at one year. In persistent pain it went from 51 to 33, 26 and 23 (Menezes Costa 2012). This is what every remedy competes against. Anything given in the first six weeks will look as if it worked.

Recurrence. A systematic review found one true inception cohort reporting recurrence, at 33 per cent in a year, and judged the estimates unreliable. A later cohort of 250 recently recovered people found that 69 per cent had another episode within a year (da Silva 2017, abstract and secondary summary). Recurrence is the rule, not a failure of treatment.

Tradition, record and inference. Almost every tradition has a name for the strained back and a hand-based answer to it (THRIVING library, TR-12). The record is that most episodes settle with or without them. The modern inference, that pain here reflects a sensitised nervous system more than damage and that fear of movement prolongs it, is reasonable but rests on cohort and trial data rather than a demonstrated mechanism [VERIFY, my synthesis].

1.2 The red flags: when back pain is an emergency

How rare. Nicholas Henschke and colleagues followed 1,172 consecutive patients with acute back pain in Sydney primary care for a year. Eleven (0.9 per cent) had serious pathology: eight fractures, two inflammatory arthritis and one cauda equina syndrome. None had cancer or infection. Only three red flags were informative: long corticosteroid use, age over 70 and significant trauma (Henschke 2009, abstract and secondary summaries). Christopher Downie and colleagues reviewed 14 diagnostic studies of 53 red flags. Older age, long steroid use, severe trauma and a bruise or graze over the spine raised the probability of fracture. Only a past history of cancer raised the probability of spinal cancer meaningfully, to 33 per cent (22 to 46). Most guideline red flags were uninformative (Downie 2013, abstract).

The village lesson is double. Most flags are false alarms and must not make every back a catastrophe. But the few strong flags matter, and without imaging and with more tuberculosis and untreated infection, the base rate of serious disease will be higher than in Sydney [VERIFY, my inference].

The five dangerous causes.

1. **Cauda equina syndrome.** The nerve roots below the cord are squeezed, usually by a large disc. The signs are bladder, bowel or sexual dysfunction, numbness in the saddle area and leg weakness (PMC9678980 review, search summary). Decompression within 48 hours is the benchmark. One meta-analysis found that surgery after 24 hours raised the risk of abnormal urinary function by 54 per cent, while a UK cohort of 621 found the patient's state at operation mattered more than the clock (cauda equina literature, search summaries). No village can decompress a spine. It can recognise it, empty the bladder, prevent pressure sores and tell the truth. A district with a surgeon might attempt more [VERIFY, feasibility].

2. **Fracture.** In the old, the steroid-treated and after a fall. WO-05 covers the injured spine (THRIVING library, WO-05). The commoner village case is the osteoporotic collapse after a cough or a lift. It needs analgesia and gentle movement, never manipulation (THRIVING library, TR-12).

3. **Infection.** In 457 Californian cases of spinal epidural abscess, over 90 per cent had back or neck pain, only 10 per cent had the full triad of back pain, fever and neurological signs, and 71 per cent had been seen at least once before diagnosis (Durant 2025, search summary). An older series found diagnostic delay in 75 per cent, the triad in 13 per cent, and lasting weakness in 45 per cent of the delayed against 13 per cent of the promptly diagnosed (Davis 2004, abstract). Fever, a recent skin infection, a wound, childbirth or injecting should raise the alarm.

4. **Tuberculosis of the spine.** Percivall Pott, surgeon at St Bartholomew's, described in 1779 the palsy of the legs that accompanies a curvature of the spine and advised draining the abscess beside it. He did not recognise it as tuberculosis, which Delpech later established (Pott 1779, catalogue and secondary summaries). In 1920 A. Rendle Short in Bristol wrote that by old authorities about a third of cases died within a few years, and that more recent mortality was 5 to 10 per cent under strict recumbency (Rendle Short 1920, search snippet). J. Dobson's 914 cases, published in 1951 at the start of chemotherapy, showed a mortality of 16.7 per cent, 24.8 per cent among the paraplegic, and paraplegia in 31.2 per cent of thoracic disease (Dobson 1951, abstract). With modern drugs the multinational Backbone-2 cohort of 314 patients had 2 per cent mortality and 25 per cent sequelae, but the median delay to diagnosis was 78 days and 40 per cent already had deficits (Backbone-2 2015, abstract). Signs: weeks of back pain with night sweats, weight loss, a cough in the household, a sharp angle (gibbus) in the spine, or a swelling in the groin or flank.

5. **Cancer.** A past cancer is the one strong flag (Downie 2013). Unrelenting night pain and weight loss add to it [VERIFY, general guideline practice not read here]. After the Fall the response is palliative care under ME-05.

Inflammatory back pain. Two of Henschke's eleven had inflammatory arthritis. A young adult with stiffness worst in the morning, eased by exercise, may have ankylosing spondylitis [VERIFY, standard criteria not read here]. It is not an emergency. Exercise and anti-inflammatory drugs treat it.

1.3 What helps back pain

Stay active, not in bed. The Cochrane review by Kristin Dahm and colleagues found that advice to stay active gives small improvements in pain and function over advice to rest in bed, on moderate-quality evidence, and no new trials have appeared since (Dahm 2010, abstract and commentary by Bart Koes). Bed rest for back pain is grade X. It costs strength and bone, and in the old it can kill (THRIVING library, WO-05).

Exercise. Jill Hayden and colleagues reviewed 249 trials with 24,486 people with chronic non-specific back pain. Against no treatment, usual care or placebo, exercise reduced pain by 15.2 points on 100 (12.2 to 18.3), moderate certainty, reaching the review's 15-point threshold for importance. Function improved by 6.8 points, below the 10-point threshold. Against other conservative treatments the advantage was 9.1 points, low certainty. Adverse effects, mostly soreness, appeared in 33 per cent of exercise groups against 29 per cent of comparison groups (Hayden 2021). Exercise is the best-supported treatment a village can give with no stock at all. No single type clearly won [VERIFY, comparisons of types not read in full].

Yoga. The Cochrane review by Susan Wieland and colleagues (21 trials, 2,223 people) found that yoga may improve function and pain a little against no exercise, with little or no difference from other exercise (Wieland 2022, Cochrane summary). Its trial evidence is the evidence for exercise.

Hands and needles. TR-12 and TR-03 hold the trials. Manipulation helps chronic back pain about as much as recommended therapies, 3 points on 100 better at one month, and massage helps in the short term on low certainty (THRIVING library, TR-12, citing Rubinstein 2019 and Furlan 2015). The point this report adds is the comparison with natural history: a 3-point margin is invisible beside the 29-point fall the first six weeks bring alone (Menezes Costa 2012). For acupuncture, the individual patient meta-analysis by Andrew Vickers and colleagues is confirmed as *Journal of Pain* 2018, 19:455, which settles TR-03's [VERIFY]. Across 39 trials and 20,827 patients acupuncture beat no acupuncture by about 0.5 standard deviations and sham by about 0.2, with about 15 per cent decay at a year (Vickers 2018, abstract). For the knee, a large Australian trial found needle equal to sham laser (THRIVING library, TR-03). The ritual helps, the needle adds a little, and the needle needs sterility.

Heat. A heat wrap reduced acute back pain at five days, moderate evidence, and evidence on cold was insufficient (THRIVING library, ME-06, citing French 2006). Grade A, almost free.

What does not work. In the PACE trial Christopher Williams and colleagues randomised 1,652 people with acute back pain to regular paracetamol, paracetamol as needed or placebo. Median time to recovery was 17, 17 and 16 days (Williams 2014, secondary summaries). Gustavo Machado and colleagues found paracetamol ineffective for back pain and of minimal, clinically unimportant benefit in hip and knee osteoarthritis, with abnormal liver tests 3.8 times as often as on placebo (1.9 to 7.4) (Machado 2015, abstract and summaries). Salvaged paracetamol is better kept for fever and acute pain (THRIVING library, ME-06).

1.4 Osteoarthritis: exercise, weight, a stick and cold

Exercise. Marlene Fransen and colleagues reviewed 54 trials. In 44 trials with 3,537 people, land-based exercise reduced knee pain immediately after treatment by a standardised mean difference of 0.49 (0.39 to 0.59), about 12 points on 100 (10 to 15) (Fransen 2015, abstract). A 2024 update exists and was not read [VERIFY]. Grade A, moderate certainty.

Weight. In the IDEA trial Stephen Messier and colleagues randomised 454 overweight and obese adults aged 55 and over with knee osteoarthritis to diet with exercise, diet alone or exercise alone for 18 months. A university press release reported that pain fell by 51 per cent among completers of diet with exercise against 25 to 28 per cent in the other groups (Messier 2013, press summary). I did not read the intention-to-treat figures [VERIFY]. After the Fall weight will fall in many households unprompted. For the heavy, weight loss with exercise is grade A.

A stick. Ana Jones and colleagues in São Paulo randomised 64 patients with knee osteoarthritis to a wooden T-handled cane for two months or no aid. Pain, function and anti-inflammatory drug use improved with the cane (Jones 2012, abstract). Grade A, low certainty, one small trial. A stick costs a branch and an hour. It is held in the hand opposite the painful knee or hip [VERIFY, standard teaching not in a source read here].

Cold and heat. Lucie Brosseau and colleagues found three small trials with 179 patients. Ice massage improved range of motion, strength and function, cold packs reduced swelling, and ice packs did not change pain (Brosseau 2003, Cochrane summary). Heat for the stiff joint is grade C by extension from the back-pain trials [VERIFY, my inference]. Joint protection (using larger joints, avoiding long kneeling, resting a hot joint) is standard occupational therapy teaching, grade D on what I read [VERIFY].

1.5 The plants for back and joint pain

Doses already in ME-06 are not repeated.

Chilli (*Capsicum annuum* and *C. frutescens*, fruit). The Cochrane review of herbal medicine for back pain found only cayenne plasters better than placebo (Oltean 2014). It was also published as Gagnier and colleagues in *Spine* 2016, which settles ME-06's [VERIFY]. For the knee the evidence is weaker. Melainie Cameron and Sigrun Chrubasik judged that capsicum gel probably does not improve osteoarthritis pain at the doses tested (Cameron 2013, abstract), while an older pooled analysis of capsaicin cream in musculoskeletal pain gave an NNT of 8.1 (THRIVING library, ME-06, citing Mason 2004). The plaster on the back is the best case, the cream on the knee uncertain. ME-06 Protocol 3 gives the village ointment and its harms. No lookalike danger in the fruit, but the plant is a nightshade and only the ripe pod is used [VERIFY].

Willow (*Salix alba*, *S. purpurea* and other *Salix* species, bark). The trials' 240 mg salicin a day relieved back-pain flares (39 against 6 per cent pain-free) but was not clearly better than placebo in osteoarthritis (THRIVING library, ME-06). White willow bark holds about 0.5 per cent salicin, purple willow 4 to 8 per cent, so the species matters more than the recipe (THRIVING library, ME-06). The brief's lead "Vlachojannis 2009" was not read [VERIFY]. Stomach and bleeding harms, which apply to every salicylate: - Stomach upset in under 1 per cent of 4,731 surveillance patients on extract, but a child of four bled into the gut on a willow and meadowsweet syrup (THRIVING library, ME-06, citing Werner 2004 and Moro 2011). - Never under 18, in the third trimester, with an active ulcer, a bleeding disorder or an anticoagulant, with salicylate asthma, or with another salicylate or NSAID (THRIVING library, ME-06). - Chronic use for osteoarthritis means months of stomach exposure, which no willow trial lasting weeks measured [VERIFY, my inference]. Lookalikes: willows are easily confused with each other, which matters only for dose (THRIVING library, ME-06).

Devil's claw (*Harpagophytum procumbens*, secondary root tuber). A southern African remedy. Its back-pain trials are of low quality and EMA registers only traditional use for minor joint pain (THRIVING library, ME-06). Grade C. A warning that it interacts with anticoagulants could not be confirmed from a source I read [VERIFY]. Outside southern Africa it is a salvage item.

Boswellia, Indian frankincense (*Boswellia serrata*, oleo-gum resin). Used in Ayurveda for joint disease [VERIFY, not read at a classical source]. The Cochrane review of oral herbal therapies (49 studies, 5,980 people) found moderate-quality evidence from two studies with 85 people that 100 mg a day of an enriched extract for 90 days lowered pain by 17 points on 100 (8 to 26) and improved function by 8, NNT 4. No serious adverse events were seen, though reporting was poor (Cameron 2014). A 2020 meta-analysis of seven trials with 545 patients found WOMAC pain lower by 14.2 and advised at least four weeks (Yu 2020, abstract). Two analyses agree. Grade A, low to moderate certainty, for standardised extract. The tree grows in dry tropical India, not a temperate village [VERIFY]. Raw resin is not the extract tested. Lookalikes: other frankincense species and adulterated trade resin [VERIFY].

Turmeric (*Curcuma longa*, rhizome). About 2 points on 10 in small trials of extract, with Nelson's strong critique and liver injury from enhanced supplements (THRIVING library, ME-06). Grade A low certainty for extract, D for

the kitchen spice.

Comfrey, knitbone (*Symphytum officinale*, root, external only). The English name and the German *Beinwell* both speak of mending bone [VERIFY, tradition not read at a primary source]. The record is good for a European folk plant. In a double-blind trial in two German centres, Bernd Grube and colleagues gave 220 patients with painful knee osteoarthritis about 2 g of a comfrey root extract ointment three times a day for three weeks. Pain fell by 54.7 per cent against 10.7 per cent on placebo (Grube 2007, abstract). The Cochrane review of topical herbs agreed that comfrey gel probably improves pain, by 41.5 points on its scale (Cameron 2013). The trials appear to rest on one manufacturer's product [VERIFY].

The European regulator was not persuaded. Its monograph registers comfrey root only as a traditional medicine for minor sprains and bruises: a semi-solid preparation with 10 per cent of a 2:1 liquid extract in 65 per cent ethanol, applied thinly twice a day for no more than 10 days, not on broken skin, not under 18, not in pregnancy or breastfeeding, with daily pyrrolizidine alkaloid exposure below 1 microgram (EMA 2024, read in full). An EMA product page gives 0.35 micrograms (EMA comfrey page, search summary). I could not resolve which applies where [VERIFY].

By mouth comfrey is grade X. In 2001 the US Food and Drug Administration asked makers to withdraw oral comfrey because its pyrrolizidine alkaloids are linked to veno-occlusive disease of the liver, while conceding that human cause and effect was unproven (FDA 2001, search summary). EMA records liver toxicity and tumours in rats (EMA 2024). No village can measure the alkaloid content of a home ointment, so the ceiling cannot be checked. Whether the village makes one is the owner's decision [OWNER]. My view: allowed on intact skin for up to 10 days at a time, adults not pregnant, never by mouth, never on wounds [VERIFY, my judgement].

Lookalike: young comfrey leaves have been mistaken for foxglove (*Digitalis purpurea*), which is lethal [VERIFY, case reports not read]. Comfrey has bristly leaves, a winged stem and bell flowers in curled clusters. Identify it in flower before digging the root.

Stinging nettle (*Urtica dioica*, fresh leaf, stung on the skin). Beating rheumatic joints with nettles is a European folk practice [VERIFY, history not read at a primary source]. Colin Randall and colleagues ran a double-blind crossover trial in 27 patients with osteoarthritic pain at the base of the thumb or index finger. Fresh nettle leaf was applied once a day for a week, with white deadnettle (*Lamium album*) as placebo. Pain and disability fell more with nettle ($p = 0.026$ and $p = 0.0027$) (Randall 2000, abstract). Blinding cannot have been complete, since one leaf stings and the other does not. The Cochrane review drew no conclusion (Cameron 2013). Grade D. It is free and its harm is a rash. White deadnettle is the harmless lookalike.

1.6 Rheumatoid arthritis without disease-modifying drugs

What it is. Autoimmune inflammation of the joint lining, usually symmetrical in the small joints of hands and feet, with hours of morning stiffness, boggy swelling and in time erosion and deformity [VERIFY, standard description not read here]. Exercise alone does not stop it.

The course before 1950. Charles Short, Walter Bauer and William Reynolds at the Massachusetts General Hospital followed 293 patients entered between 1930 and 1936. A transcription of their table shows remission falling from 17.2 to 13.2 per cent by 1954 while progression rose from 19.2 to 62.6 per cent (Short 1957, teaching slide via search). John Duthie and colleagues in Edinburgh reported that of 100 patients, about half were unimpaired or only moderately impaired at 15 years (Duthie 1964, findings through search summary [VERIFY]). David Scott and colleagues followed 112 patients recruited in 1964 to 1966 and treated with steroids, gold and chloroquine. At 20 years 35 per cent had died and 43 per cent had moderate to high disability (Scott 1987, via a 2017 Norfolk paper). The honest course without modern drugs: one in seven or eight remits, more than half progress, and a third are dead within twenty years.

Fish oil. Young Ho Lee and colleagues pooled ten trials. Long-chain omega-3 fats above 2.7 g a day for more than

three months reduced use of anti-inflammatory drugs (standardised mean difference 0.52). Joint counts and stiffness were not significantly better. A 2018 update agreed (Lee 2012, abstract). Grade A, low certainty, for needing fewer painkillers. That dose means a daily portion of oily fish or several spoonfuls of cod liver oil [VERIFY, my arithmetic]. Cod liver oil at that dose for months may give too much vitamin A [VERIFY]. Oily fish is the safer route.

What the infirmary can salvage. Anti-inflammatory drugs for pain and stiffness (THRIVING library, ME-06). Chloroquine or hydroxychloroquine, also antimalarials, which were already used in Scott's cohort. Prednisolone and methotrexate need a doctor and blood counts, and I read no source for their doses [VERIFY]. Night splints and range-of-motion exercise are the hands-on part [VERIFY]. Who gets scarce disease-modifying drugs is a rationing decision for the district [OWNER].

1.7 Gout

The course without treatment. Uric acid crystals in a joint, classically the big toe, red, hot and exquisitely tender overnight. In untreated patients the risk of a second attack was 62 per cent in one year, 78 per cent in two and 84 per cent in three, and in Philip Hench's untreated series of 1936 tophi appeared in about half by 10 years and 72 per cent by 20 (BMJ Best Practice, citing Yu and Gutman 1961 and Hench 1936). The old series probably over-represent the severe [VERIFY].

The flare. Rest and raise the joint and keep the bedclothes off. In a trial of 19 patients on standard drugs, adding ice cut pain by 7.75 cm on a 10 cm scale against 4.42 cm ($p = 0.021$) (Schlesinger 2002, abstract). Grade A, low certainty. Anti-inflammatory drugs or salvaged colchicine at the AGREE dose (1.2 mg, then 0.6 mg an hour later) are the drugs (THRIVING library, ME-07). Autumn crocus (*Colchicum autumnale*, corm and seed) is grade X at every village rung: the gap between a gout dose and a lethal dose is too narrow for a corm of unknown strength, and its spring leaves are mistaken for wild garlic (THRIVING library, ME-07).

Diet. Hyon Choi and colleagues followed 47,150 American men for 12 years and recorded 730 new cases. The highest fifth of meat intake carried a relative risk of 1.41 and of seafood 1.51, while dairy carried 0.56. Purine-rich vegetables and total protein carried no extra risk (Choi 2004, abstract). Grade B. Less meat and shellfish, more milk, and no ban on peas and beans.

Cherries (*Prunus avium* and *P. cerasus*, fruit). In 633 people with gout, two days with cherry intake carried 35 per cent lower odds of a flare (odds ratio 0.65). A serving was about 10 to 12 cherries and the benefit plateaued at three servings over two days. With allopurinol the odds were 75 per cent lower (Zhang 2012, press release and summaries). Grade B, case-crossover with self-report. Lookalikes: cherry stones and leaves contain cyanogenic glycosides, so the flesh only [VERIFY].

Allopurinol salvage. The American College of Rheumatology guideline of 2020 recommends starting at 100 mg a day or less, raising it towards a urate target, and giving colchicine, an NSAID or prednisone for three to six months to prevent the flares that starting provokes. It advises HLA-B*5801 testing in people of South-East Asian and African American descent because of severe skin reactions (FitzGerald 2020, secondary summaries). A village cannot measure urate or HLA type. The salvage rule: only for repeated attacks or tophi, started low, never begun during a flare, stopped at once at any rash [VERIFY, the rash rule is standard practice not in a source read here].

1.8 Neuropathy: burning feet and numb hands

Causes a village will see. Diabetes, thiamine deficiency (dry beriberi), B12 deficiency, alcohol and leprosy (THRIVING library, HY-08, IN-15). After the Fall deficiency becomes commoner and diabetes rarer, though not absent [VERIFY, my inference].

Find the curable cause first. Thiamine for adults with signs of deficiency: 50 mg three times a day for a few days, then 10 mg a day (THRIVING library, HY-08). For B12, injections are standard in neurological disease and most re-

covery comes in the first six months (Evigrade cyanocobalamin monograph, search summary). The Cochrane review found oral 1,000 to 2,000 micrograms a day as effective as injection for blood levels, on small short trials (Wang 2018, abstract). Adult B12 stores last years, so a household without animal food will meet deficiency late and suddenly [VERIFY]. B12 cannot be made in a village. Eggs, milk and meat are the prevention.

Protect the numb foot. Paul Brand's finding was that numb hands and feet are destroyed by unnoticed injury, and that daily inspection, cushioned footwear and resting any hot swollen foot prevent it (THRIVING library, IN-15). It applies equally to diabetes, in which the lifetime risk of a foot ulcer is 19 to 34 per cent, more than half of ulcers become infected and about 20 per cent of moderate or severe infections end in amputation (Armstrong 2017, reproduction of the article). Grade B, and the most useful thing a healer can do for neuropathy.

Relief. Capsaicin 0.075 per cent cream for eight weeks gave an NNT of 5.7 in neuropathic pain, with local burning common (NNH 2.5) (THRIVING library, ME-06). For TENS, William Gibson and colleagues found 15 studies with 724 people and very low-quality evidence that could not show whether it works, with skin irritation the only harm (Gibson 2017, abstract). It needs a salvaged device and batteries. Grade D.

Amitriptyline salvage. The NeuPSIG meta-analysis by Nanna Finnerup and colleagues of 229 studies gave tricyclics, mainly amitriptyline at 25 to 150 mg a day, an NNT of 3.6 (3.0 to 4.4) and an NNH of 13.4, first line, with no more than 75 mg a day in older adults. Strong opioids had an NNT of 4.3 and were third line (Finnerup 2015, read in part). The Cochrane review by Andrew Moore and colleagues found no first- or second-tier evidence, adverse events in 55 against 36 per cent and an NNH of 5.2 (Moore 2015, abstract). They disagree because they set different bars for trial quality. Amitriptyline helps some people a lot and many not at all, and its harms are certain. A tricyclic is cardiotoxic in overdose [VERIFY], so it is dispensed a week at a time to anyone low in mood.

1.9 The opioid question [OWNER]

The trial record. Roger Chou and colleagues found no study comparing opioids with no opioids beyond one year, most trials under six weeks, and observational links between long-term use and overdose, abuse, fractures, heart attack and sexual dysfunction, some dose-dependent (Chou 2015, abstract). Jason Busse and colleagues pooled 96 trials with 26,169 people with chronic non-cancer pain. Opioids reduced pain by 0.69 cm on a 10 cm scale, below the 1 cm minimal important difference, improved physical function by 2 points on 100, and made vomiting four times commoner (relative risk 4.12). In nine trials against NSAIDs there was no difference in pain (Busse 2018, secondary summaries). In the SPACE trial Erin Krebs and colleagues randomised 240 veterans with chronic back pain or hip or knee osteoarthritis to opioids or non-opioid drugs for a year. Function did not differ, pain was better on non-opioids and adverse symptoms commoner on opioids (Krebs 2018, abstract). Three bodies of evidence agree: in chronic non-cancer pain, opioids give a small benefit, no larger than an NSAID's, at real cost.

The American lesson. The Centers for Disease Control describe three waves of deaths: prescription opioids from the 1990s, heroin from 2010 and synthetic opioids from 2013, with about 806,000 opioid overdose deaths from 1999 to 2023 (CDC 2025). A year after a first prescription, 6 per cent were still on opioids after 1 day's supply and 30 per cent after 31 days, and among chronic pain patients misuse ran at 21 to 29 per cent and addiction at 8 to 12 per cent (THRIVING library, ME-05, citing Shah 2017 and Vowles 2015).

Opium's place. ME-05 sets out the plant, the doses, the locked chest and the three policies the owner must choose between. For chronic non-cancer pain the evidence supports a narrower rule than for the dying or the fractured. Proposed for the owner's decision [OWNER]: - No opium for chronic back pain, osteoarthritis or widespread pain. - Opium for acute fracture, burns, dressings and the dying under ME-05. - Anyone already dependent on salvaged opioids when supply fails is tapered under ME-05, not stopped. - Neuropathic pain that fails every other rung is the hard case. NeuPSIG ranks strong opioids third line (Finnerup 2015). Whether a village grants opium for it is the owner's call [OWNER].

1.10 Feasible today and after the Fall

Everything here except the drugs is available to anyone today: walking, exercise, a stick, heat, cold, a chilli plaster, a nettle, cherries and oily fish. After the Fall the non-drug core survives intact, and that is where the best evidence lies. What is lost is imaging, emergency spinal surgery, tuberculosis drugs, disease-modifying drugs, allopurinol and B12 injections. Hard labour on a bad back or knee is its own harm [VERIFY, my inference].

2. Evidence grades

Remedy or practice	Grade	Effect and certainty
Staying active, acute back pain	A	Small, moderate, better than bed rest
Bed rest for back pain	X	Worse than staying active
Exercise, chronic back pain	A	15 on 100 against nothing, moderate
Yoga, chronic back pain	A	Small, equal to other exercise, low
Manipulation, massage (TR-12)	A	About equal to exercise, low
Acupuncture (TR-03)	A	0.2 SD over sham, 0.5 over nothing
Heat wrap, acute back pain	A	Moderate
Paracetamol, back pain	X	No better than placebo
Exercise, knee osteoarthritis	A	12 on 100, moderate
Weight loss with exercise, knee	A	One large trial
Walking stick, knee	A	One trial of 64, low
Cold, knee	C	Range and swelling, not pain
Capsicum plaster, back pain	A	Moderate (ME-06)
Capsicum gel, knee	A, negative	Probably no benefit, low
Willow extract, back pain	A	ME-06. Decoction C
Willow, osteoarthritis	C	Mixed trials
Devil's claw	C	Low-quality trials
Boswellia extract, knee	A	14 to 17 on 100, low to moderate
Curcumin extract	A, low	Kitchen turmeric D
Comfrey root ointment	A	Moderate, one maker. EMA traditional only
Comfrey by mouth	X	Liver veno-occlusive disease
Nettle sting, thumb	D	One trial of 27
Fish oil, rheumatoid arthritis	A	Fewer painkillers, low
Ice for gout flare	A	One trial of 19
Cherries, gout	B	Case-crossover
Less meat, more dairy, gout	B	Large cohort
Colchicum plant	X	ME-07
Salvaged colchicine, AGREE dose	A	ME-07
Allopurinol started low	A	Guideline
Thiamine, dry beriberi	B	HY-08
Oral high-dose B12	A, low	Small trials
Foot inspection, numb feet	B	IN-15
Capsaicin 0.075 per cent, neuropathy	A	NNT 5.7
TENS, neuropathy	D	Very low quality

Remedy or practice	Grade	Effect and certainty
Amitriptyline, neuropathy	A, contested	NNT 3.6 or very low certainty
Opioids, chronic non-cancer pain	X for routine use	0.69 on 10, no better than NSAIDs

3. Means ledger

Rung	What it can do	What changes
Hands	Red-flag questions, reassurance and the six-week rule, staying active, exercise taught by example, nettle, foot inspection	Avoids bed rest, fear and harmful remedies. Catches the 1 in 100
Hearth	Hot stone in cloth, cold cloths, a stick, chilli fat ointment (ME-06), less meat, more milk, cherries, oily fish, bladder care for the paralysed	Measured effects of heat and exercise. Fewer gout attacks
Garden and still	Purple willow coppice, chilli, nettle, comfrey for external use [OWNER], cherry trees, ethanol, a scale	Modest willow effect on back flares. Comfrey of unknown alkaloid content
Village dispensary	Lay healer with the red-flag card and protocols. Rationed NSAIDs, aspirin, capsaicin cream, thiamine. Registers of chronic pain, gout, numb feet and anyone on salvaged opioids	NSAIDs kept for gout, rheumatoid and back flares. Early referral of the dangerous back
District infirmary	Nurse or doctor, sputum microscope, tuberculosis drugs if held, salvaged colchicine, allopurinol, amitriptyline, B12, chloroquine, steroids, spinal plaster, perhaps a surgeon	Spinal tuberculosis treated. Gout prevented. Neuropathy causes corrected
Hospital before the Fall	Imaging, decompression within 24 to 48 hours, abscess drainage, biologic drugs, joint replacement	Decisive for cauda equina, abscess, rheumatoid arthritis and end-stage joints. Adds little for non-specific back pain

4. Harm test

Bed rest. Weakness, bone loss, clots, pressure sores, death in the old. Signs: a swollen calf, a red heel or sacrum. Get up, walk, turn the bedbound every 2 hours [VERIFY, standard nursing interval].

Exercise. Soreness in a third (Hayden 2021). Harm comes from pushing through a red flag or loading a fresh osteoporotic fracture. Stop at new leg weakness, numbness or bladder change.

Manipulation and massage. Neck thrust can tear a vertebral artery. Never manipulate a back with red flags (THRIVING library, TR-12).

Heat and cold. Burns and cold injury on numb skin, the sleeping, the drunk and the very old. A cloth between, and look at the skin every 10 minutes [VERIFY, my judgement].

Capsaicin. Burning, agony in the eye. Wash hands, never on broken skin, never under heat, adults only (THRIVING library, ME-06).

Willow and every salicylate. Gut bleeding, ulcer, asthma attacks, Reye's syndrome in children, kidney injury in the dehydrated, bleeding with anticoagulants, and summation with other salicylates and NSAIDs. Never under 18, in the third trimester, with ulcer, bleeding disorder or salicylate allergy. Signs: black stools, vomiting blood, ringing ears, wheeze, rash. Stop, give fluids, treat as a gut bleed (THRIVING library, ME-06).

Devil's claw. Stomach upset and diarrhoea. Not in pregnancy or with an ulcer (THRIVING library, ME-06). Possible bleeding with anticoagulants [VERIFY].

Boswellia. Few harms reported, poorly (Cameron 2014). After the Fall the risk is adulterated resin [VERIFY].

Comfrey. By mouth, veno-occlusive disease of the liver (FDA 2001, EMA 2024). On skin, absorption data are thin, hence 10 days, intact skin, adults, not in pregnancy (EMA 2024). Signs of liver injury: swelling of the belly, jaundice, a tender liver. Stop. There is no antidote. Misidentification with foxglove [VERIFY].

Nettle. Wheals and burning for hours. Not on the face, numb skin or the allergic [VERIFY, my judgement].

Fish and cod liver oil. Belching, loose stools. Vitamin A excess from large doses of cod liver oil, with birth defects in pregnancy [VERIFY].

Colchicum and colchicine. Vomiting and diarrhoea, then marrow failure and death, with lowest lethal oral doses of 7 to 26 mg (THRIVING library, ME-07). Never the plant. Never with clarithromycin or grapefruit.

Allopurinol. Flares on starting. Rare severe skin and organ reactions, commoner with HLA-B*5801 (FitzGerald 2020). Rash, fever or mouth ulcers: stop and never restart.

Amitriptyline. Drowsiness, dry mouth, constipation, urinary retention, falls and confusion in the old, NNH 5.2 to 13.4 by source (Moore 2015, Finnerup 2015). Cardiotoxic in overdose [VERIFY].

B12 and thiamine. Safe. The harm lies in not giving them, or giving folate alone in B12 deficiency, which can mask the anaemia while the nerves fail [VERIFY].

Opioids. Sedation, slowed breathing, constipation, vomiting (Busse 2018), falls and fractures, dependence, death from overdose or lost tolerance (THRIVING library, ME-05, Chou 2015).

5. Red flags

- **Saddle numbness, loss of bladder or bowel control, inability to pass urine, or new weakness in both legs.** Cauda equina. Send for a surgeon if one is within a day. Otherwise empty the bladder, turn the patient, prevent sores, and tell the family plainly that function may not return.
- **Back pain with fever,** after a skin infection, wound, childbirth or injecting. Spinal infection. Antibiotics at the district if held.
- **Back pain with weeks of night sweats, weight loss, cough in the house, or an angle in the spine.** Tuberculosis. Drugs if held, otherwise rest, food and drainage of any soft abscess by a trained hand. Before chemotherapy one in six died (Dobson 1951).
- **Back pain after a past cancer, or unrelenting night pain with weight loss.** Likely spread. Palliative care under ME-05.
- **Back pain after a fall in the old or the steroid-treated.** Fracture (WO-05).
- **A single hot swollen joint with fever, above all in a child.** Septic arthritis until proven otherwise, which destroys a joint in days [VERIFY]. Not gout. Antibiotics at the district.
- **A red, hot, swollen calf.** A clot, not arthritis. No massage (TR-12).

- **A numb foot that is hot, swollen or ulcerated and smells.** Deep infection on the road to amputation. Rest it completely, clean, drain, antibiotics if held (IN-15).
- **Burning feet with breathlessness and swollen legs in someone living on white rice or flour.** Beriberi heading for heart failure. Thiamine now (HY-08).

Honest comfort: most chronic pain will never kill. For the paralysed or the dying, the village can still give company, turning, clean skin, food, warmth and, under the locked-chest rule, opium (THRIVING library, ME-05).

6. The case against

Against hands and needles. Edzard Ernst has long argued that acupuncture and manipulation give effects over sham too small and too biased to justify their rare catastrophes (THRIVING library, TR-03, TR-12). Rubinstein's own analysis found manipulation no better than recommended therapies by any clinically meaningful margin (THRIVING library, TR-12, citing Rubinstein 2019). The defence is that half a standard deviation over no treatment is what patients feel, whatever its source.

Against exercise. Hayden's 15 points are against no treatment. Against other care the margin is 9 and below the threshold, blinding is impossible and adherence outside trials is poor (Hayden 2021). Foster and colleagues note that the trials come from rich countries, where patients are not already labouring all day (Foster 2018). A farmer with back pain may need less work, not more exercise [VERIFY, my inference].

Against the plants. The European regulator declined comfrey for arthritis despite the Grube trial (EMA 2024). Boswellia rests on a handful of small trials (Cameron 2014). Nelson's critique of curcumin applies to most anti-inflammatory phytochemicals (THRIVING library, ME-06). Nettle's only trial could not be blinded. Comfrey by mouth and colchicum show that old does not mean safe.

Against the red-flag card. Downie, Henschke and colleagues argued that most red flags are uninformative and produce false alarms (Downie 2013). The counter is that a village without imaging has no other screen, and the true positives are the cases that matter most.

Against "no opioids for chronic pain". Patients and pain physicians have argued that the American backlash brought abrupt tapers, untreated pain and suicide among people long stable on opioids [VERIFY, not read here]. The trials were short and some individuals do better than the average. That is why the rule is the owner's [OWNER].

Against the romance of the hospital. For back pain and knee osteoarthritis the hospital adds little: imaging finds changes in the painless, surgery for non-specific back pain has weak support, and paracetamol does not work (Foster 2018, Machado 2015). For cauda equina, spinal tuberculosis, rheumatoid arthritis and gout prevention, its tools are decisive.

7. 10-line summary

1. Acute back pain falls from 52 to 23 on 100 in six weeks on its own, so any early remedy looks effective.
2. Serious disease lies behind about 1 in 100 back pains. The strong flags are age over 70, long steroids, trauma and a past cancer.
3. Saddle numbness, bladder loss, fever, night sweats and wasting make back pain an emergency.
4. Staying active beats bed rest. Exercise lowers chronic back pain by 15 on 100 against nothing.
5. Manipulation, massage, yoga and acupuncture help about as much as exercise. Heat helps acute back pain.
6. Paracetamol does not help back pain and barely helps osteoarthritis.
7. For the knee: exercise, weight loss, a stick, and comfrey or chilli on the skin. Boswellia extract is a trade item.
8. Comfrey by mouth is grade X. On intact skin, 10 days at most.
9. Untreated, rheumatoid arthritis progressed in about 60 per cent, and gout returned in 62 per cent within a year.

10. Opioids in chronic non-cancer pain gave 0.69 on 10, no more than NSAIDs. Their place is the owner's [OWNER].

8. Open questions

1. How common are spinal tuberculosis, abscess and cancer behind back pain in a post-collapse village?
2. Which pyrrolizidine limit, 1 or 0.35 micrograms, applies to comfrey on skin, and how much crosses intact skin?
3. Does a village chilli or comfrey ointment in lard reach the strengths tested?
4. Does the cherry association survive a randomised trial, and does it hold for northern sour cherries?
5. Does devil's claw interact with warfarin?
6. Does the stick's benefit last beyond two months?
7. Does exercise help back pain in people who labour all day?
8. Is opium justified for neuropathic pain that fails every other rung [OWNER]?
9. How long can a district's salvaged allopurinol, colchicine and disease-modifying drugs last, and who gets them [OWNER]?

9. Sources to read in full

1. Hartvigsen 2018 and Foster 2018, the *Lancet* low back pain series.
2. Menezes Costa 2012, *CMAJ*, prognosis of acute and persistent back pain.
3. Henschke 2009, *Arthritis and Rheumatism*, serious spinal pathology in primary care.
4. Hayden 2021, Cochrane review of exercise for chronic low back pain.
5. Fransen 2015, Cochrane review of exercise for knee osteoarthritis, with its 2024 update.
6. Cameron and Chrubasik 2013 and 2014, Cochrane reviews of topical and oral herbs for osteoarthritis.
7. EMA herbal monograph on *Symphytum officinale* radix, corrected 2024.
8. Finnerup 2015, *Lancet Neurology*, pharmacotherapy for neuropathic pain.
9. Busse 2018 and Krebs 2018, *JAMA*, opioids in chronic pain.
10. Short, Bauer and Reynolds 1957, *Rheumatoid Arthritis*, for the untreated course.

10. At the bedside after the Fall

A household. Knows the six-week rule and the five warning signs (saddle, bladder, legs, fever, wasting). Keeps the person with back pain moving, with a hot stone in a cloth at night. Cuts a stick for the bad knee. Grows chillies and keeps nettles. Eats less meat and more milk if someone has gout. Checks numb feet every evening. Needs: a cloth, a stone, a knife, a garden. First failure to expect: a loving family puts someone with back pain to bed for a fortnight, and they rise weaker and more afraid.

A village of 300. One trained lay healer with the red-flag card and the exercise sheets, chilli ointment (ME-06), a purple willow coppice, cherry trees and, if the owner allows, comfrey for external use [OWNER]. Registers of chronic pain, gout and numb feet. Salvaged NSAIDs rationed for gout and inflammatory flares. A weekly walking or exercise group, which also serves company and mood. First failure to expect: the salvaged ibuprofen and aspirin spent on chronic backs in the first year, leaving none for fractures and gout.

A district of 3,000. A nurse or doctor who can examine for cauda equina and spinal tuberculosis, a sputum microscope, tuberculosis drugs if held, spinal plaster, and the scarce drugs (colchicine, allopurinol, amitriptyline, B12, thiamine, chloroquine, steroids) in a ledger under the owner's rationing rule [OWNER]. A bed with turning and bladder care for the paralysed, and a route to any surgeon within a day. First failure to expect: the back pain with fever or night sweats sent home three times as "just a back" before the abscess or gibbus declares itself.

11. Protocols

Protocol 1. First visit for back pain (over 16)

- ☐ Ask how it started. A fall or lift in someone over 70 or on steroids for months: possible fracture, go to WO-05.
- ☐ Ask about numbness between the legs, trouble passing or holding urine or stool, new weakness of both legs. Any yes: Protocol 2 now.
- ☐ Ask about fever, night sweats, weight loss, cough in the house, past cancer, recent skin infection or injection. Any yes: Protocol 2.
- ☐ Look along the spine for an angle or swelling and press each bone.
- ☐ If clear, say: "This is a common back pain. Most get much better in six weeks. Moving helps, bed does not."
- ☐ Heat: a hot stone or bottle in cloth, 20 to 30 minutes, several times a day [VERIFY, duration my judgement].
- ☐ Walk daily, a little further each day. Normal work as far as pain allows.
- ☐ For a flare in an adult: willow under ME-06 Protocol 1 or chilli under ME-06 Protocol 3. Never a salicylate with an NSAID.
- ☐ Review at 2 and 6 weeks, repeating the red-flag questions. Not better at 6 weeks: Protocol 3.

Protocol 2. The dangerous back

- ☐ Cauda equina signs: send for a surgeon if one is within a day. Write down when symptoms began.
- ☐ Cannot pass urine: catheter at the district. Without one, warmth, privacy and running water [VERIFY].
- ☐ Turn the bedbound every 2 hours, keep skin clean and dry, pad heels and sacrum.
- ☐ Fever: district antibiotics if held. Drain any skin abscess.
- ☐ Sweats, wasting, gibbus: sputum smear, tuberculosis drugs if held, firm bed, full food. Check leg strength daily.
- ☐ Past cancer with night pain: ME-05.

Protocol 3. Exercise for chronic back pain (adults, flags excluded)

- ☐ Walk daily, adding about a fifth each week [VERIFY, my judgement, no type was superior in Hayden 2021].
- ☐ Twice a week, in a group if possible: knee to chest, cat and camel, bridging, standing back bends, 10 repetitions each [VERIFY, general physiotherapy practice].
- ☐ Continue 8 to 12 weeks before judging [VERIFY].
- ☐ Soreness for a day or two after a new exercise is not harm.
- ☐ Stop and return to Protocol 1 at new weakness, numbness or bladder change.

Protocol 4. Knee or hip osteoarthritis

- ☐ Daily walking. Three times a week: 10 sit-to-stands from a chair, 10 straight-leg raises each side, step-ups on a low step [VERIFY, exercises general practice, effect from Fransen 2015].
- ☐ For the heavy: smaller portions with the exercise.
- ☐ A stick reaching the wrist crease with the arm hanging, in the hand opposite the bad side [VERIFY].
- ☐ Swelling: cold cloth or pack in cloth for 15 to 20 minutes [VERIFY]. Stiffness: heat.
- ☐ One topical: chilli (ME-06), nettle (Protocol 5) or comfrey if permitted (Protocol 6) [OWNER].
- ☐ A flare in an adult: willow or a salvaged NSAID, not both, a week at a time.

Protocol 5. Nettle sting for a finger or thumb joint (adults)

- ☐ Pick fresh *Urtica dioica* with a gloved hand and check that it stings. White deadnettle does not and is useless.
- ☐ Press one leaf on the skin over the joint for about 30 seconds once a day for a week [VERIFY, the 30 seconds is not in the abstract].

☐ Never on numb or broken skin, the face, or anyone allergic.

Protocol 6. Comfrey root ointment, external only [OWNER]

☐ Only if the owner permits. No home recipe is given, because no source read gives one of known alkaloid content.
☐ Identify *Symphytum officinale* in flower before digging. Never pick unflowered leaves near foxglove.
☐ Thin layer twice a day on intact skin (EMA 2024). The knee trial used about 2 g three times a day (Grube 2007).
☐ At most 10 days at a time (EMA 2024), then a pause of at least as long [VERIFY, my judgement].
☐ Never by mouth, on a wound, under 18, in pregnancy or breastfeeding.

Protocol 7. Gout

☐ Flare: rest, raise, a hoop under the bedclothes, ice in a cloth on and off (Schlesinger 2002), plenty of water.
☐ A hot joint with fever is infection until proven otherwise.
☐ Salvaged colchicine: 1.2 mg, then 0.6 mg one hour later, nothing more that day (ME-07). Or an NSAID. Never the plant.
☐ Prevention: less red meat and shellfish, more milk, peas and beans allowed (Choi 2004). Cherries in season, 10 to 12 a serving, up to three servings over two days (Zhang 2012).
☐ Repeated attacks or tophi, district only: allopurinol 100 mg a day or less, raised every 2 to 5 weeks [VERIFY, interval from secondary summary], with colchicine or an NSAID for 3 to 6 months (FitzGerald 2020). Not during a flare. Stop at any rash.

Protocol 8. Burning or numb feet

☐ Ask about diet, alcohol and thirst with much urine. Look for pale numb patches and thick nerves (IN-15).
☐ Poor diet: thiamine 50 mg three times a day for a few days, then 10 mg a day (HY-08).
☐ No animal food: B12 at the district, injection if held, or oral 1,000 micrograms a day (Wang 2018).
☐ Every evening inspect both feet, between the toes and the soles. Shoes that never pinch, no barefoot walking, rest a hot swollen foot (IN-15).
☐ Capsaicin 0.075 per cent cream if held, for eight weeks (ME-06).
☐ District, salvaged amitriptyline: 10 to 25 mg at night, raised slowly [VERIFY, starting dose not in a source read], at most 75 mg in the old (Finnerup 2015). A week's supply at a time. Stop for confusion, falls or urinary retention.

Protocol 9. Opioids in chronic pain [OWNER]

☐ Pending the owner's decision, do not start opium for chronic back pain or osteoarthritis.
☐ Anyone already on salvaged opioids is tapered under ME-05, never stopped suddenly.
☐ Every dose is recorded under the locked-chest rule (ME-05).

12. Numbers to carry

1. **6 weeks.** Acute back pain falls from 52 to 23 on 100 on its own.
2. **1 in 100.** Serious disease behind back pain. Strong flags: over 70, steroids, trauma, past cancer.
3. **24 to 48 hours.** The window for cauda equina surgery.
4. **15 on 100.** Exercise for chronic back pain against nothing. 12 for the knee.
5. **17 and 16 days.** Recovery from acute back pain on paracetamol and on placebo.
6. **10 days, intact skin, never by mouth.** The comfrey rule.

7. **62 per cent.** Gout returns within a year without prevention.
8. **1.8 mg.** A whole day's colchicine for a flare. The plant never.
9. **3.6 and 75.** Amitriptyline's NNT, and the most milligrams a day for the old.
10. **0.69 on 10.** What opioids add to chronic non-cancer pain, below the 1-point threshold.

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