CH-02 Blood pressure, stroke and the heart without drugs

HEALING after the FALL, research library, CH-02

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

How to read this report. Raised blood pressure, heart failure, angina, heart attack and stroke are one family of disease with one root in most villages: arteries damaged by pressure, age, tobacco and diet, and in poorer places a heart scarred in childhood by rheumatic fever. After the Fall the tablets run out within a year or two. This report asks what the untreated course was, what salt, food, work, plants, salvaged aspirin and nursing can do, and where the romance of natural pressure control kills. The foxglove and the cardiac glycosides belong to (THRIVING library, ME-07) and are only cross-referenced here. Bed nursing, pressure care and swallowing belong to (THRIVING library, NU-01). The rehabilitation of the stroke survivor belongs to NU-04, which is not yet written, so this report stops at the acute essentials. My own inferences carry [VERIFY].

Findings by section

1. The untreated course: what the record shows

Malignant hypertension. The record before effective drugs is unambiguous. Volhard and Fahr described the malignant phase in 1914, with death usually within two years (Tattersall 2005). Keith, Wagener and Kernohan in 1928 reported six cases surviving 1.5 to 11 months after the diagnosis (Tattersall 2005). Schottstaedt and Sokolow, following 104 patients in 1953, found a mean survival of 8.4 months after papilloedema appeared (cited in Botting 2015). The figure in the brief, a one-year survival under 20 per cent for Keith, Wagener and Barker grade IV retinopathy (1939), is the one most textbooks repeat, but I could not read the 1939 survival table and the figure stays [VERIFY]. What is certain from three independent series is that a person whose retinae show swelling of the optic disc, with headache, failing vision and failing kidneys, was dead within one to two years in nearly every case. Lumbar sympathectomy, the surgical answer, gave lasting benefit in only 21 per cent in a 1949 survey, and 27 per cent had died (Tattersall 2005).

The first trials. The Veterans Administration Cooperative Study is the hinge. In 143 men with diastolic pressure averaging 115 to 129 mmHg, randomised to hydrochlorothiazide, reserpine and hydralazine or to placebo, there were 27 severe events on placebo against 2 on treatment, and 4 deaths against none, and the trial was stopped at about 18 months (VA Cooperative Study 1967, read in the Milbank summary). In the second arm, 380 men with diastolic pressure of 90 to 114 mmHg, the five-year risk of a morbid event was 55 per cent untreated against 18 per cent treated (VA Cooperative Study 1970, same summary). Note that reserpine, a rauvolfia alkaloid, was one of the three drugs that produced this result.

Framingham. Hypertension preceded heart failure in 91 per cent of the Framingham cases (357 of 392), carried a roughly twofold heart failure hazard in men and threefold in women, and accounted for 39 per cent of heart failure in men and 59 per cent in women (Levy 1996, abstract). After heart failure began, median survival was 1.7 years in men and 3.2 years in women, with one-year survival of 57 and 64 per cent and five-year survival of 25 and 38 per cent (Ho 1993, abstract). Many of these patients had digitalis and diuretics, so untreated survival was shorter [VERIFY].

The dose of pressure. In one million adults in 61 cohorts, each 20 mmHg higher usual systolic pressure (10 mmHg diastolic) at ages 40 to 69 more than doubled the stroke death rate and doubled the death rate from heart disease, with no threshold down to 115/75 (Lewington 2002, abstract). The trials confirm the arithmetic. In 123 trials with 613,815 people, each 10 mmHg off systolic pressure cut major cardiovascular events by 20 per cent (relative risk 0.80), coronary disease by 17 per cent, stroke by 27 per cent, heart failure by 28 per cent and death from all causes by 13 per cent (Ettehad 2016, abstract). This conversion lets a village judge every non-drug tool below. A measure that lowers systolic pressure by 5 mmHg should, if sustained, prevent roughly one stroke in eight [VERIFY, my extrapolation from Ettehad].

Populations without hypertension. INTERSALT measured 24-hour urine in 10,079 adults in 52 centres. Sodium excretion ranged from 0.2 mmol a day among the Yanomamo to 242 mmol in north China. Four low-salt centres had low pressures that did not rise with age. Across the other 48 centres, sodium was related to the slope of pressure with age but not to median pressure (INTERSALT 1988, abstract). In 195 Yanomamo, mean urinary sodium was 0.9 mmol a day, mean pressure 96.0/60.6, there was no hypertension and no rise with age, body mass index was 20.8 to 21.5, nobody drank alcohol, and urinary potassium was 60 to 67 mmol a day (Mancilha-Carvalho 1989, abstract). Thirty years later, 72 Yanomami still had a mean systolic of 95.4 mmHg and no rise with age, while 83 neighbouring Yekwana with salt and processed food had 104.0 mmHg and a rise of 0.25 mmHg a year (Mueller 2018, abstract). The Yanomami are also lean, active and sober, so salt alone cannot take the credit [VERIFY, inference].

2. Measuring pressure without error

No hand can feel blood pressure. A rule taught to paramedics infers systolic pressure from which pulses can be felt, and it overestimates (Deakin and Low 2000, held in THRIVING library, FO-07). Without a cuff a village sees only the end-stage, not the silent years when treatment helps. A working cuff is therefore the most valuable single cardiovascular object in a village, ahead of any plant [VERIFY, inference].

The cuff lies in predictable ways. A systematic review of 328 studies found 29 sources of error, with effects on systolic pressure from minus 23.6 to plus 33 mmHg, and advised repeating and averaging readings (Kallioinen 2017, abstract). Cuff size matters most. In a randomised crossover trial of 195 adults, a regular cuff read 3.6 mmHg too low in people who needed a small cuff, 4.8 mmHg too high in those who needed a large cuff and 19.5 mmHg too high in those who needed an extra-large cuff (Ishigami 2023, abstract). Aneroid dials drift with knocks and age, and mercury columns do not, so a village that holds both should check the dial against the column every few months [VERIFY, inference]. Protocol 1 gives the technique.

3. Salt, potassium and the kitchen

What modest salt reduction does. The Cochrane review of He, Li and MacGregor pooled 34 trials with 3,230 people lasting four weeks or more. Cutting urinary sodium by 75 mmol a day, about 4.4 g of salt, lowered pressure by 4.18/2.06 mmHg overall, by 5.39/2.82 in people with hypertension and by 2.42/1.00 in people without. On their regression, 100 mmol less sodium (6 g of salt) lowered systolic pressure by 5.8 mmHg (He 2013, abstract). The critics' own Cochrane review reached similar numbers for people with hypertension (5.71/2.87 in white people, 6.64 systolic in black and 7.75 in Asian people) but found almost nothing in white people with normal pressure (1.14/0.01), and found that renin, aldosterone, cholesterol and triglycerides rose on low salt (Graudal 2020, abstract).

Whether it saves lives. In 13 cohorts with 177,025 people, higher salt intake carried a stroke relative risk of 1.23 (1.06 to 1.43) and a cardiovascular relative risk of 1.14 (0.99 to 1.32) (Strazzullo 2009, abstract). The PURE study of 95,767 people in 369 communities found systolic pressure rose 2.86 mmHg per gram of sodium, but an association with cardiovascular disease and stroke only where community intake exceeded 5 g of sodium a day, about 12.5 g of salt. Chinese communities, with the highest intake, showed the strongest stroke association (Mente 2018, abstract). Critics say PURE's single urine samples were unreliable [VERIFY, not read]. Both sides agree that hypertensive people gain about 5 mmHg from a real cut and that the highest intakes harm.

DASH. In the Dietary Approaches to Stop Hypertension trial, 459 adults ate controlled diets for eight weeks. A diet rich in fruit, vegetables and low-fat dairy and low in saturated fat lowered pressure by 5.5/3.0 mmHg overall, by 11.4/5.5 in the 133 people with hypertension and by 3.5/2.1 in those without, with salt and weight held constant (Appel 1997, abstract). In the follow-up trial, the DASH diet with low sodium lowered systolic pressure by about 7.1 mmHg more than the usual diet with high sodium in one analysis (Sacks 2001, abstract). A village garden of beans, greens, roots and fruit with a few dairy animals is most of a DASH diet already [VERIFY, inference].

The Kempner rice diet. Walter Kempner at Duke from about 1939 fed patients white rice, fruit and sugar, about 2,000 kcal with 20 g of protein and almost no salt (Hektoen 2020, Tattersall 2005). Accounts give the sodium as about 150 mg or 6 mEq a day. Of an early series of 192 patients, 25 died, 60 did not improve substantially and 107 had pressure fall from an average of 200/112 to 149/96, and heart size fell in 66 of 72 (Hektoen 2020). Tattersall reports that by 1948, in 500 patients followed 4 to 898 days, pressure fell on average by 47/21 and papilloedema cleared in 17 of 23 (Tattersall 2005). The two secondary sources give different counts, and Kempner's own 1949 paper was not read [VERIFY]. Fishberg argued that a plain 200 mg sodium diet did as well. The diet was so unpleasant that patients lived in supervised rice houses under a domineering regime (Klemmer 2014, abstract). It is the only pre-drug measure with a recorded effect on malignant hypertension, and it is risky in advanced kidney failure and too low in protein for long use [VERIFY].

Potassium and salt substitutes. The Salt Substitute and Stroke Study randomised 600 villages in rural China with 20,995 people, mean age 65.4, 72.6 per cent with a previous stroke and 88.4 per cent with hypertension. Households received a substitute of 75 per cent sodium chloride and 25 per cent potassium chloride. Over 4.74 years, stroke fell from 33.65 to 29.14 per 1,000 person-years (rate ratio 0.86, 0.77 to 0.96), major cardiovascular events from 56.29 to 49.09 (0.87) and deaths by a rate ratio of 0.88. Serious hyperkalaemia did not differ (3.35 against 3.30 per 1,000, relative risk 1.04), but people with serious kidney disease or on potassium-sparing drugs or potassium supplements were excluded, and blood potassium was never measured (Neal 2021, abstract). This is the strongest evidence in the report for a kitchen measure that saves lives, and it was done in villages. In 22 trials, extra potassium lowered pressure by 3.49/1.96 mmHg, in people with hypertension only, and by 7.16 mmHg systolic at intakes of 90 to 120 mmol a day. In 11 cohorts with 127,038 people, higher intake carried a stroke relative risk of 0.76 (0.66 to 0.89), with no sign of harm to the kidneys in people with normal kidneys (Aburto 2013, abstract).

Plant-ash salt: the traditional potassium salt. Many peoples without sea or rock salt made salt by burning plants and leaching the ash. A 2024 analysis of the stem-ash salt of *Hygrophila schulli* from Gambella in Ethiopia (100 g of ash leached in 1.5 litres of water, filtered and dried) found 0.71 per cent sodium, 13.4 per cent potassium, 12.43 per cent chloride and 3.82 per cent carbonate, a pH of 9.97 and lead at 2.27 ppm, above the Codex limit of 2.0. It lowered pressure only in rats, and 10 of 12 tasters preferred common salt (Mengistu 2024, full text read). The same paper cites Amazonian ash salts at 26.9 to 44.6 per cent potassium. The tradition is old and widespread. The record shows these are potassium salts with almost no sodium. The inference, that they would act like the SSaSS substitute, is untested [VERIFY]. Unleached wood ash and its lye are caustic and are not salt (THRIVING library, HY-05), and ash salts can carry heavy metals from the plant or ground. [OWNER] decides whether ash salt is made at all, from which plants, and whether it is tested.

Salt in heat. Salt restriction is written for sedentary people in temperate climates. Workers in heat lose 0.5 to 2.0 litres of sweat an hour at sodium concentrations of about 10 to 90 mmol per litre (Baker, Sports Science Exchange 161). In one study of outdoor workers in hot conditions, sodium loss over a shift was 4.8 to 6 g, equal to 10 to 15 g of salt, with unacclimatised workers losing more (Bates and Miller 2008, full text). Oral rehydration solution is a salt medicine and must never be withheld from a person with diarrhoea on the grounds of blood pressure (THRIVING library, HY-03). The sensible rule is a low-salt kitchen for the sitting elders and the known hypertensive, salt on the side for the labourer, and full rehydration salts for anyone with diarrhoea [OWNER].

4. Weight, alcohol, work and the Cuban experiment

In 25 trials with 4,874 people, losing an average of 5.1 kg lowered pressure by 4.44/3.57 mmHg, roughly 1 mmHg per kilogram, and losses above 5 kg gave 6.63/5.12 (Neter 2003, abstract). In 36 trials, cutting alcohol made no measurable difference in people drinking two drinks a day or fewer, but halving intake in those drinking six or more lowered pressure by 5.50/3.97 (Roerecke 2017, abstract). In 93 trials with 5,223 people, endurance training lowered pressure by 3.5/2.5, dynamic resistance training by 1.8/3.2 and isometric handgrip work by 10.9/6.2 mmHg (Cornelissen and Smart 2013, abstract). The isometric figure comes from small trials [VERIFY].

Cuba after 1990 is the nearest thing in the record to a whole country losing its imports. In the Special Period, daily energy intake fell from 2,899 to 1,863 kcal, the share of physically active adults rose from 30 to 67 per cent and obesity fell from 14 to 7 per cent. Between 1997 and 2002, deaths from diabetes fell by 51 per cent, from coronary heart disease by 35 per cent, from stroke by 20 per cent and from all causes by 18 per cent (Franco 2007, abstract). Mean weight fell by about 5.5 kg. When food returned and people regained weight, diabetes prevalence rose by 116 per cent (Franco 2013, abstract). The crisis also produced an epidemic of optic and peripheral neuropathy, more than 50,000 cases in 1991 to 1993, linked to poor nutrition and cigar smoking and checked by vitamin supplements (Cuba Neuropathy Field Investigation Team 1995, abstract), and a modest rise in deaths among the elderly early in the crisis (Franco 2007). Hunger and walking lowered heart deaths in a whole people, but hunger without B vitamins blinded and lamed, and the gain vanished when food returned.

5. The plants

Hawthorn (*Crataegus monogyna* and *C. laevigata*, leaf with flower). In European tradition, hawthorn is the heart herb. The Cochrane review pooled 10 of 14 trials with 855 patients with chronic heart failure, mostly with hawthorn added to standard drugs, and found maximal workload rose by 5.35 W and symptoms improved (Pittler 2008, abstract). The largest outcome trial, SPICE, with 2,681 patients, found no significant effect on cardiac events, with a hazard ratio for cardiac death of 0.89 (0.73 to 1.09) (Holubarsch 2008, abstract, and THRIVING library, PH-01). HERB-CHF in 120 patients was null and recorded more adverse events (THRIVING library, PH-01). Hawthorn does not lower blood pressure in any trial I found to a degree worth the word, and the European Medicines Agency lists it for traditional use only (THRIVING library, PH-01). A standardised extract at 450 mg twice daily did not alter digoxin kinetics in 8 volunteers (Tankanow 2003, abstract), so the old fear of combining hawthorn and foxglove is not supported by the one kinetic study, though that study used digoxin, not crude leaf [VERIFY]. Lookalikes are other hawthorns, which are used interchangeably, and blackthorn (*Prunus spinosa*), which flowers on bare wood before its leaves [VERIFY]. Dose as tea is 1 to 2 g of dried leaf and flower in 150 ml up to four times a day, maximum about 6 g a day (THRIVING library, PH-01). The record says it may let a failing heart do a little more work, and nothing more.

Garlic (*Allium sativum*, bulb). Meta-analyses of garlic powder trials find systolic pressure falls by about 8.3 mmHg in people with hypertension, at 900 to 1,380 mg of powder a day, graded B in this library (Ried, held in THRIVING library, PH-01). How many fresh cloves that equals depends on drying and preparation, and I found no trial of fresh cloves [VERIFY]. Garlic thins the blood a little, and large amounts with aspirin before surgery or childbirth are best avoided [VERIFY]. Wild ramsons (*Allium ursinum*) are safe, but lily of the valley (*Convallaria majalis*, a glycoside plant in ME-07) and autumn crocus (*Colchicum autumnale*) have similar leaves and are deadly, so garlic comes from the garden.

Hibiscus, roselle, bissap or karkade (*Hibiscus sabdariffa*, the red fleshy calyx). Across West Africa, Egypt, Sudan, Mexico and the Caribbean the sour red drink is everyday food, and in several traditions it is drunk for pressure. In Mexico, an infusion of 10 g of dried calyx in half a litre daily (9.6 mg anthocyanins) for four weeks was compared with captopril 25 mg twice daily in 75 analysed patients. Systolic pressure fell from 139.05 to 123.73 mmHg, and effectiveness was 0.79 against 0.84 for captopril, not significantly different (Herrera-Arellano 2004, abstract). A standardised extract in 193 patients did less than lisinopril 10 mg (Herrera-Arellano 2007, abstract). Three cups of tea a

day for six weeks lowered systolic pressure by 7.2 mmHg against 1.3 on placebo in 65 adults (McKay 2010, abstract, grams of calyx not read [VERIFY]). A meta-analysis of five trials with 390 people found systolic pressure fell by 7.58 mmHg (Serban 2015, abstract). The Cochrane review is stricter and found insufficient evidence, with one eligible trial of 60 diabetics at very low certainty (Pattanittum 2021, abstract). In Senegal, an open-label trial of 219 patients gave bissap as a brew of 10 g of calyx a day. Over six months the herbal arms lowered systolic pressure by 19.5 mmHg against 19.7 on captopril 50 mg twice daily, and the target pressure was reached by 49 per cent on bissap against 40 per cent on captopril (Bourqui 2021, abstract). Bissap tablets did less than ramipril in an earlier trial (11.2 against 16.7 mmHg, Seck 2017, abstract). Kinkeliba (*Combretum micranthum*, leaf), the other arm of both Senegalese trials, is graded B in (THRIVING library, PH-06). The two-source dose is 10 g of dried calyx a day as an infusion or brew (Herrera-Arellano 2004, Bourqui 2021). Harms recorded in the trials were few. Possible interactions with diuretics and its traditional use as an emmenagogue argue against it in pregnancy [VERIFY]. Lookalikes: ornamental hibiscus (*Hibiscus rosa-sinensis*) and red-leaf hibiscus (*H. acetosella*) are not the same drug [VERIFY]. Roselle is a warm-climate annual [VERIFY].

Rauvolfia, sarpagandha or snakeroot (*Rauvolfia serpentina*, root). Indian practice used the root for madness, insomnia and snakebite. Vakil's 1949 report brought it into Western cardiology (Vakil 1949, not read), and reserpine, isolated in 1952, was one of the three drugs in the first VA trial. The Cochrane review found four trials with 237 people in which reserpine at 0.5 mg a day or more lowered systolic pressure by 7.92 mmHg (Shamon and Perez 2016, held in THRIVING library, PH-07). The harm is depression. In 1954 Freis described five patients with severe depression after long, large doses, and reports of the 1950s put depression at 10 to 15 per cent of patients at the doses then used (THRIVING library, PH-07). Suicides were reported in that era [VERIFY, not read in a primary source]. Depression at modern low doses of 0.1 to 0.25 mg has never been cleanly established (THRIVING library, TR-02). Modern doses are 0.1 to 0.25 mg of reserpine, and about 100 mg of root has been equated with that range (THRIVING library, PH-07), but no two independent sources give a safe crude-root dose (THRIVING library, TR-02). Other effects are stuffy nose, slow pulse, drowsiness and peptic ulcer [VERIFY]. Lookalikes are other *Rauvolfia* species, of which *R. vomitoria* in Africa and *R. tetraphylla* in the Americas also contain reserpine at different strengths [VERIFY]. It belongs at the district rung, never for anyone with past depression, with a named watcher for low mood, and only where malignant or severe hypertension is otherwise fatal [OWNER].

Foxglove (*Digitalis purpurea* and *D. lanata*, leaf). Withering's account of 1785 and every number about dose, margin, poisoning and the DIG trial are in (THRIVING library, ME-07) and are not repeated. Two points matter here. Foxglove is for heart failure with a fast irregular pulse, not for high blood pressure, and Withering himself noted it failed in patients with a tight, cordy pulse and a florid face (THRIVING library, ME-07). Its therapeutic index is about 2, so lay use from the hedge is unsafe, and the village rule in ME-07 (one trained person, counted pulse, stop at nausea) holds [OWNER as in ME-07].

Dandelion (*Taraxacum officinale*, leaf). The French name pissenlit records the folk belief. The only human trial gave 17 volunteers 8 ml of a fresh-leaf ethanolic extract three times in a day. Urine frequency rose after the first dose and the ratio of urine to fluid intake after the second, and the third dose did nothing (Clare 2009, abstract). That is grade D, a single day in healthy people. The European Medicines Agency advises against dandelion where fluid must be restricted and in heart or kidney failure (THRIVING library, PH-01). It may be eaten as a green but should not be relied on to clear the oedema of a failing heart.

6. Heart failure by hand

Recognising it. A failing left heart floods the lungs, and a failing right heart floods the legs, belly and neck veins. In patients presenting with breathlessness, the features that most raised the odds of heart failure were a past diagnosis of heart failure (likelihood ratio 5.8), waking at night breathless (2.6) and a third heart sound (11), while the absence of exertional breathlessness (0.48) and of crackles (0.51) made it less likely (Wang 2005, abstract). In the hands of a village nurse the useful signs are breathlessness on lying flat (count the pillows), waking at night gasping, crackles at

both lung bases that do not clear with coughing, a raised jugular venous pulse with the patient sitting at 45 degrees, pitting oedema of ankles or sacrum, and a rising weight [VERIFY, standard teaching].

Rule out the curable. Wet beriberi causes a fast heart, oedema and heart failure, can kill within days in its fulminant form, and responds to thiamine within hours (THRIVING library, HY-08). Anaemia, thyroid disease and rheumatic valves also cause it [VERIFY]. In a village eating polished rice or white flour, or recovering from famine, every new heart failure should receive thiamine first (THRIVING library, HY-08 for dose).

What nursing can do. Bed rest was the treatment of heart failure for a century. A review of 39 trials of bed rest for many conditions found no benefit and some harm (Allen 1999, held in THRIVING library, NU-01). Sitting up eases breathing. Raised legs reduce oedema in the legs but may worsen breathlessness by returning fluid to the chest, so in a breathless patient the trunk goes up and the legs stay level [VERIFY]. Salt restriction in heart failure is an article of faith that a trial has now tested. In 806 patients, a diet below 100 mmol of sodium a day made no difference to admissions, emergency visits or death (15 against 17 per cent, hazard ratio 0.89), and deaths were 6 against 4 per cent (Ezekowitz 2022, abstract). Those patients had modern drugs, so a village without diuretics may still gain from avoiding very salty food [VERIFY]. Fluid restriction has no trial evidence that I found. The Karell milk cure of 1866, 4 cups of skimmed milk a day and nothing else, was the nineteenth-century answer where digitalis failed, and in effect restricted salt, fluid and calories at once [VERIFY, details from a later account only].

Salvaged diuretics. Furosemide is on the salvage list for pulmonary oedema (THRIVING library, ME-09). It works within the hour, and its harms are low potassium, dehydration and kidney injury, with low potassium also raising the risk of foxglove poisoning (THRIVING library, ME-07). Dosing is for ME-09 and is not given here [VERIFY].

Venesection. Removing blood was the standard treatment of acute pulmonary oedema until diuretics, and some local guidelines still list it at 250 to 500 ml. I found no trial, only clinical tradition, and it is grade D [VERIFY]. Where a patient is drowning in their own fluid and no furosemide exists, the village should decide in advance whether and by whom it is done [OWNER].

7. Angina and heart attack

Aspirin. In ISIS-2, 17,187 patients with suspected heart attack received 160 mg of enteric-coated aspirin daily for a month or placebo. Vascular deaths at five weeks were 9.4 against 11.8 per cent, a 23 per cent reduction in the odds, with benefit even when aspirin began 13 to 24 hours after the pain. Reinfarction halved (1.0 against 2.0 per cent) and there was no excess of bleeding into the brain. Aspirin with streptokinase gave 8.0 against 13.2 per cent (ISIS-2 1988, abstract). After a heart attack or stroke, continued aspirin cut serious vascular events from 8.2 to 6.7 per cent a year, while in people without disease the benefit was uncertain and roughly matched by extra bleeds (ATT 2009, abstract). Aspirin is the one drug in this report whose value is beyond argument, and its dosing, its ban under 16 and in dengue, and its limits are in (THRIVING library, IN-02). Willow bark (*Salix* species) contains salicin, not aspirin, and has no trial evidence for any of these uses. Its antiplatelet effect is weak and uncertain [VERIFY].

What a heart attack was without a hospital. In Wellington in 1952, 52 of 174 patients admitted with infarction died (30 per cent), with weeks of strict bed rest (Capital and Coast DHB history page). Levine and Lown in 1952 sat infarction patients in an armchair from the first days and reported no harm, against a regime of six weeks flat (Levine and Lown 1952, abstract). In the 1970s two randomised trials compared home with hospital care. In 450 patients, deaths at 28 days were 12 per cent at home against 14 per cent in hospital, and at 330 days 20 against 27 per cent (Mather 1976, abstract, after an earlier report of 343 patients in Mather 1971). In Nottingham, six-week mortality was 13 per cent at home and 11 per cent in hospital (Hill 1978, abstract). These trials excluded the sickest, and 1970s hospitals had no reperfusion, but a heart attack nursed at home with a visiting doctor was not much more lethal than one on the ward [VERIFY, inference].

Angina. Chest pain that comes with effort, cold or a heavy meal and goes with rest is angina. Without nitrates, the tools are rest when the pain comes, pacing of work, avoiding heavy meals and cold air, stopping smoking and daily

aspirin (ATT 2009). Salvaged glyceryl trinitrate degrades with heat and age [VERIFY]. Pain at rest lasting more than 20 minutes, with sweating, vomiting or breathlessness, is a heart attack until proved otherwise [VERIFY, standard teaching].

Rheumatic heart disease. In poorer countries and after any collapse of antibiotic supply, the heart of the young is lost to rheumatic fever. In 2015 rheumatic heart disease caused about 319,400 deaths and affected 33.4 million people (Watkins 2017, abstract). Treating streptococcal sore throat with penicillin prevents rheumatic fever (THRIVING library, IN-05). For children with early valve damage found by echocardiography in Uganda, benzathine penicillin every four weeks cut progression over two years from 8.2 to 0.8 per cent (Beaton 2022, abstract). A Cochrane-based review found intramuscular penicillin prevents recurrence better than oral, and injections every two weeks better than every four (relative risk 0.52) (Manyemba 2003, abstract). The usual secondary-prevention dose is benzathine penicillin 1.2 million units by deep intramuscular injection every three to four weeks for those over 30 kg, and 600,000 units below that [VERIFY, second source not read in this session].

8. Stroke

What it is and how often it kills. Of incident strokes worldwide in 2019, 62.4 per cent were ischaemic, 27.9 per cent were intracerebral haemorrhage and 9.7 per cent were subarachnoid haemorrhage, among 12.2 million new strokes and 6.55 million deaths (GBD 2019 Stroke Collaborators 2021, abstract). In Oxfordshire in the 1980s, a population with a high share of infarction, 675 first strokes were 81 per cent infarction, 10 per cent intracerebral haemorrhage and 5 per cent subarachnoid haemorrhage. The 30-day case fatality was 19 per cent overall, 10 per cent for infarction, 50 per cent for intracerebral haemorrhage and 46 per cent for subarachnoid haemorrhage. At one year, 23 per cent of those with infarction had died and 65 per cent of survivors were independent, while 62 per cent of those with intracerebral haemorrhage had died (Bamford 1990a, abstract). How they died is the nurse's lesson. After infarction, more than half of the deaths after the first week came from the complications of immobility, while after haemorrhage most deaths came within 72 hours from the bleed itself (Bamford 1990b, abstract: 51 per cent of deaths after infarction from immobility complications after the first week, 56 per cent of haemorrhage deaths within 72 hours [VERIFY against full text]). In sub-Saharan Africa today, the pooled 30-day in-hospital case fatality is 27 per cent, and aspiration pneumonia is among the risk factors (Ackah 2024, abstract).

Recognising it. FAST (face droop, arm weakness, speech disturbance, time to act) let ambulance staff identify stroke correctly in 79 per cent of cases (144 of 183), and 23 to 29 per cent of referrals from all sources were not strokes but seizures, low blood sugar, sepsis or fainting (Harbison 2003, abstract). Low blood sugar mimics stroke and is treatable in minutes (THRIVING library, CH-01).

What stroke units do. Organised stroke care in 29 trials with 5,902 patients cut death (odds ratio 0.76) and death or dependency (0.77), whatever the age or type of stroke, and gave about 2 more survivors, 6 more people living at home and 6 more independent people per 100 treated (Langhorne 2020, abstract). Stroke units of the 1980s and 1990s had no scanner-driven treatment. What made them work, in a survey of 11 successful trials, was careful medical, nursing and therapy assessment, early mobilisation, avoiding urinary catheters, treating low oxygen, high blood sugar and suspected infection, and a coordinated team (Langhorne and Pollock 2002, abstract). Every element except oxygen is within a village's reach, which makes this the most hopeful finding of the report.

Positioning. In 11,093 patients, lying flat against sitting up at 30 degrees or more for the first 24 hours made no difference to disability, death or pneumonia (Anderson 2017, abstract). Position for comfort, for breathing and for feeding, and turn the patient.

Swallowing, pressure and early movement. These are held in (THRIVING library, NU-01) and summarised only. Screening swallowing before giving food or drink cut pneumonia (odds ratio about 0.60). Feeding only sitting upright, and staying upright for 30 minutes after, is the rule. Turning every 2 to 4 hours and a sheepskin or soft surface prevent pressure sores (sheepskin rate ratio 0.42). Getting the patient out of bed early is good, but the AVERT trial

of 2,104 patients found that very early, intensive mobilisation within 24 hours did worse than usual care (favourable outcome 46 against 50 per cent, odds ratio 0.73), so the rule is out of bed as the illness allows, in short sessions, not as much as possible as soon as possible (Bernhardt 2015, held in THRIVING library, NU-01). The rehabilitation programme after the first days is NU-04.

Do not chase the pressure. Pressure is often high in the first days after a stroke and falls by itself. In 26 trials with 17,011 patients, deliberately lowering it in the acute phase did not reduce death or dependency (odds ratio 0.98) (Bath and Krishnan 2014, abstract). Fast lowering with sublingual nifedipine has caused strokes and heart attacks of its own (Messerli and Grossman 1999, abstract). Salvaged tablets should not be used to rush a post-stroke pressure down [VERIFY on thresholds].

The aspirin dilemma. Aspirin helps clots and might worsen bleeds, and only a scan tells them apart. The clinical scores built for places without scanners do not work well enough. In a systematic review, the Siriraj score detected haemorrhage with a sensitivity of 0.65 and a specificity of 0.88 and ischaemia with 0.69 and 0.83, and the Guy's score detected haemorrhage with a sensitivity of only 0.54. The reviewers judged neither accurate enough to guide treatment (Mwita 2014, abstract). The Siriraj score weighs drowsiness or coma, vomiting, headache within two hours, diastolic pressure and markers of atheroma such as diabetes, angina or claudication [VERIFY on weights].

The trials that settled aspirin in stroke answer the question directly. In IST, 19,435 patients received aspirin 300 mg daily or not. Recurrent ischaemic stroke fell from 3.9 to 2.8 per cent, haemorrhagic stroke was 0.9 against 0.8 per cent and death or non-fatal recurrent stroke was 11.3 against 12.4 per cent (IST 1997, abstract). In CAST, 21,106 patients received 160 mg daily, and deaths in hospital were 3.3 against 3.9 per cent (CAST 1997, abstract). The pooled analysis of 40,000 patients found 7 per 1,000 fewer recurrent ischaemic strokes and 2 per 1,000 more haemorrhages, a net 9 per 1,000 fewer further strokes or deaths. About 9,000 patients had been randomised before any scan and still showed net benefit. Among about 800 who turned out to have had a haemorrhagic stroke and received aspirin by mistake, there was no evidence of net harm, with 63 further strokes or deaths on aspirin against 67 on control (Chen 2000, abstract). Later, in 537 survivors of brain haemorrhage, restarting antiplatelet drugs was followed by fewer recurrent bleeds than stopping them (12 against 23, hazard ratio 0.51, 0.25 to 1.03) (RESTART 2019, abstract).

Inference: in a village without a scanner, giving aspirin to every adult with a sudden focal stroke who does not show the marks of a bleed (thunderclap headache, early coma, repeated vomiting, stiff neck) and who can swallow safely is likely to do more good than harm. The benefit is small, about 1 in 100, and untested where haemorrhage is commoner [VERIFY]. This is a rule the owner must set [OWNER]. Protocol 7 gives one version.

Evidence grades

Remedy	For	Grade	Basis
Salt reduction about 4 to 6 g a day	Lowering pressure	A	He 2013, Graudal 2020
Salt substitute 25 per cent KCl	Stroke and death	A	Neal 2021
Potassium-rich diet, DASH pattern	Lowering pressure	A	Appel 1997, Aburto 2013
Weight loss, alcohol cut, exercise	Lowering pressure	A	Neter, Roerecke, Cornelissen
Rice diet	Malignant hypertension	B	Kempner series, uncontrolled
Plant-ash salt	Substitute for salt	D	Chemistry only, rats
Hibiscus calyx 10 g a day	Lowering pressure	B	Trials, open and small, Cochrane unconvinced

Remedy	For	Grade	Basis
Kinkeliba leaf	Lowering pressure	B	Senegal trials, PH-06
Garlic powder	Lowering pressure	B	PH-01
Rauvolfia root, reserpine	Lowering pressure	A (reserpine), C (crude root)	VA 1967, Cochrane, no root dose
Hawthorn leaf and flower	Heart failure symptoms	C	Small add-on gain, SPICE null
Hawthorn	Blood pressure	X as sole treatment	No useful effect found
Foxglove	Heart failure with fast AF	B	ME-07
Dandelion leaf	Oedema	D	One-day trial
Bed rest	Heart failure, infarction	X	Allen 1999
Low sodium in heart failure	Events	X as a cure, neutral	SODIUM-HF
Venesection	Pulmonary oedema	D	Tradition
Aspirin	Heart attack	A	ISIS-2
Aspirin unscanned	Acute stroke	A for ischaemic, B for unscanned use	IST, CAST, Chen 2000
Organised stroke nursing	Stroke survival	A	Langhorne 2020
Lowering pressure in acute stroke	Outcome	X	Bath 2014
Benzathine penicillin	Rheumatic heart disease	A	Beaton 2022, Manyemba 2003

Means ledger

Rung	What it can do
Hands alone	Recognise stroke (FAST), heart failure signs, angina. Turn, sit up, feed safely, keep the bed dry. Walk, eat less, drink less. Weigh daily if a scale exists
Hearth	Low-salt cooking with herbs and sour flavour. Hibiscus or kinkeliba brew. Sheepskin. Thickened food for weak swallowing
Garden and still	Beans, greens, roots, fruit for potassium (DASH). Garlic. Roselle in warm climates. Hawthorn hedges. Plant-ash salt if tested [OWNER]
Village dispensary	Working cuff with sizes, mercury check. Salvaged aspirin. Thiamine. Foxglove under ME-07 rules. Register of known hypertensives
District infirmary	Rauvolfia root or salvaged reserpine under watch. Salvaged furosemide. Benzathine penicillin. Ophthalmoscope for papilloedema. Urine and potassium tests if any
Hospital before the Fall	Scanner to tell bleed from clot, clot-busting drugs, coronary stents, defibrillators, modern drug combinations that keep most hypertensives normal for decades

Harm test

The kitchen measures pass with two exceptions. Salt restriction harms labourers in heat and people with diarrhoea, and potassium salt can kill people with failing kidneys or on potassium-sparing drugs, both groups excluded from SSaSS. Plant-ash salt adds caustic alkali and lead risk. Rauvolfia fails the harm test for anyone with a history of depression and for lay use, because 10 to 15 per cent of patients at the 1950s doses became depressed and some killed themselves. Foxglove fails it outside the ME-07 rule. Hawthorn and hibiscus pass, their harm being false reassurance. Bed rest fails. Aspirin passes in heart attack and, on the trial data, in unscanned stroke, but fails in children under 16, in dengue, in active peptic ulcer and in a clear subarachnoid haemorrhage [VERIFY on the last]. Sublingual nifedipine and any rapid drop of pressure in acute stroke fail. The romance of natural control fails worst against malignant hypertension.

Red flags

- Headache with blurred vision, nosebleed, confusion, fits or failing urine in a person with very high pressure: malignant hypertension. Send to the district at once.
- Sudden weakness of face, arm or leg, or loss of speech: stroke. Note the time, check sugar, nothing by mouth until swallowing is tested.
- Sudden worst-ever headache with stiff neck or collapse: probable subarachnoid haemorrhage. No aspirin.
- Chest pain at rest over 20 minutes with sweating or vomiting: heart attack. Aspirin chewed, rest, send for help.
- Breathlessness lying flat, pink frothy sputum: acute pulmonary oedema. Sit fully up, legs down.
- Slow pulse below 60, vomiting or yellow-green vision in anyone taking foxglove: poisoning (THRIVING library, ME-07).
- Low mood, sleeplessness or talk of death in anyone taking rauvolfia: stop at once and watch.
- Fever, joint pain and a new murmur in a child after a sore throat: rheumatic fever (THRIVING library, IN-05).
- New swelling and breathlessness in a person eating white rice or flour: think beriberi, give thiamine (THRIVING library, HY-08).
- Cough, fever or wet voice after eating in a stroke patient: aspiration pneumonia.

The case against

Against salt reduction. Graudal and colleagues argue that the gain in people with normal pressure is trivial and is bought with rises in renin, aldosterone and blood fats (Graudal 2020). O'Donnell and Mente argue from PURE that harm is confined to intakes above 5 g of sodium a day and that low intakes may themselves carry risk (Mente 2018). Yet both camps agree on the hypertensive, and SSaSS showed fewer strokes and deaths. The case against bites in heat, where salt is a medicine.

Against hawthorn and hibiscus. The hawthorn trials were mostly small, short, add-on and sponsored by makers of a single extract, and the one large outcome trial was null (Pittler 2008, Holubarsch 2008). The hibiscus trials were small, short and often open, and Cochrane found too little to judge (Pattanittum 2021). Grade B is generous by Cochrane standards.

Against stroke units as a village model. The trials were done in hospitals with doctors, therapists and oxygen. A village team may not reproduce them, and the stroke unit benefit, 2 survivors per 100, is small enough to be lost in a village with poor nursing [VERIFY].

Against home care for heart attack. Rose noted that much of the fall in hospital deaths came from admitting milder cases (Rose 1975, cited in the Capital and Coast DHB history page, not read), and Mather and Hill excluded the sickest.

Against unscanned aspirin. Where haemorrhage is commoner the balance may be closer, and 800 mistaken haemorrhages are too few to prove safety (Chen 2000).

Against the romance. Natural pressure control works where the Yanomami live, without salt, alcohol, obesity or idleness. The plants give a few millimetres of mercury. The malignant phase needs drugs, so the most important cardiovascular decision a village makes is to salvage and ration aspirin, reserpine, diuretics and a cuff.

10-line summary

1. Untreated malignant hypertension killed almost everyone within two years. The VA trial of 1967 stopped after 18 months: 27 severe events on placebo, 2 on treatment.
2. Each 10 mmHg off systolic pressure cuts stroke by about 27 per cent.
3. A working cuff, in the right size, is the most valuable cardiovascular tool. The wrong cuff adds up to 19.5 mmHg.
4. Cutting 4.4 g of salt lowers hypertensive pressure by about 5/3. A 25 per cent potassium salt cut stroke by 14 per cent in 600 Chinese villages.
5. DASH-style eating lowers hypertensive pressure by 11/5. Each kilogram lost takes about 1 mmHg.
6. Labourers in heat and people with diarrhoea need salt, not restriction.
7. Hibiscus calyx 10 g a day and garlic are grade B. Hawthorn does not treat pressure. Rauvolfia works but causes depression.
8. Aspirin in a heart attack cuts deaths by 23 per cent. Home care in the 1970s did about as well as hospital.
9. Stroke units save 2 lives in 100 by nursing alone: swallowing checks, turning, early movement, no catheters.
10. Unscanned aspirin in stroke gave net benefit in 40,000 patients, and mistaken haemorrhages showed no net harm. The owner must decide.

Open questions

- Is the under-20-per-cent one-year survival for grade IV retinopathy (Keith, Wagener and Barker 1939) correct, and what was the survival for grade III?
- What is a safe, two-source dose of crude *Rauvolfia serpentina* root, and how much does reserpine content vary between plants?
- Do plant-ash salts from temperate plants (bracken, beech, kelp) give potassium salt of usable purity, and what are their lead and cadmium contents?
- Does a higher haemorrhage share after the Fall change the aspirin balance?
- Does fluid restriction help heart failure without diuretics?
- How fast do salvaged aspirin, furosemide and nitrates lose strength?

Sources to read in full

- Kempner W. Treatment of heart and kidney disease and of hypertensive and arteriosclerotic vascular disease with the rice diet. Ann Intern Med 1949, 31:821 (patient counts disagree between secondary sources).
- Vakil RJ 1949, British Heart Journal 11:350 (the first Western rauvolfia series and its dose).
- Neal 2021 SSaSS full paper and supplement (death confidence interval, potassium safety).
- Chen 2000 full paper (the subgroup without scan, by country).
- Herrera-Arellano 2004 and Bourqui 2021 full papers (preparation and adverse effects).
- Bamford 1990b full paper (causes and timing of death).
- Pittler 2008 Cochrane full review (doses and adverse events).

At the bedside after the Fall

Household. A family with an older member. Cook with less salt and more beans, greens and roots. Walk every day. Learn FAST and the heart attack signs, and know where the village aspirin is kept. If a stroke comes, keep the person on their side if drowsy, give nothing by mouth, note the time and send for the nurse. *To start:* one person who knows

FAST and the recovery position, and a low-salt cooking habit. *First failure to expect:* feeding a stroke patient a cup of tea in bed in the first hour, before anyone has tested the swallow.

Village of 300. About 70 to 90 adults over 40, of whom a third or more will have raised pressure [VERIFY, inference from modern prevalence]. Expect one or two strokes and one or two heart attacks a year [VERIFY]. A cuff with at least two sizes, a register of known hypertensives measured every three months, a kitchen policy on salt with a heat exception, hibiscus or kinkeliba grown where climate allows, a stock of aspirin with a written rule, and two people trained in stroke nursing (swallow test, turning, positioning). *To start:* cuff, register, aspirin stock, and the stroke nursing roster. *First failure to expect:* the cuff breaks or reads wrong, and nobody notices for months.

District of 3,000. A dispensary with checked cuffs, an ophthalmoscope, rauvolfia or salvaged reserpine under a named prescriber, salvaged furosemide, benzathine penicillin for rheumatic fever, thiamine, and foxglove under ME-07. A stroke ward of four to six beds staffed as a team (nurse, helper, family) by Langhorne's elements. A weekly clinic for hypertension and heart failure. *To start:* a trained prescriber, a drug ledger and a stroke bed. *First failure to expect:* salvaged drugs run out unevenly, and the district keeps treating the mild hypertensive while the malignant one goes without.

Protocols

Protocol 1. Measuring blood pressure 1. Patient seated for 5 minutes, back supported, feet flat, legs uncrossed, bladder empty, no tobacco or tea for 30 minutes [VERIFY, standard guidance]. 2. Bare arm, supported at heart level. Choose the cuff whose inflatable bladder goes at least 80 per cent round the arm [VERIFY]. On a thick arm, use the large cuff (Ishigami 2023). 3. Inflate 30 mmHg above the point where the radial pulse vanishes. Deflate at 2 to 3 mmHg a second. 4. Take three readings one minute apart. Record the average of the last two (Kallioinen 2017). 5. Diagnose raised pressure only on readings on two or more separate days [VERIFY]. 6. Check aneroid dials against a mercury column every three months. A dial more than 4 mmHg out is taken out of use [VERIFY]. 7. Above 180/110 with headache, visual change or confusion: look at the optic disc if an ophthalmoscope exists and send to the district the same day.

Protocol 2. The salt and potassium kitchen 1. Target for hypertensives and sitting elders: salt in food about 5 g a day, a level teaspoon, cut gradually over 4 to 6 weeks so taste adapts [VERIFY]. 2. Cook without salt and add a measured amount at the table. Use sour (vinegar, roselle, sorrel), herbs and garlic for flavour. 3. Raise potassium through food: beans, lentils, potatoes, leafy greens, squash, fruit, every day. 4. Salt substitute (75 per cent sodium chloride, 25 per cent potassium chloride, as in SSaSS) only if a clean potassium chloride source exists [OWNER]. Not for anyone with kidney failure, scanty urine, or on spironolactone, amiloride or ACE inhibitors. 5. Heat exception: any worker sweating heavily for hours gets salt with food and drink, about 1 g extra per hour of heavy sweating [VERIFY, my inference from Bates and Miller]. Diarrhoea always gets full oral rehydration solution (THRIVING library, HY-03). 6. Weigh adults monthly. A loss of 5 kg in the overweight is worth about 5 mmHg.

Protocol 3. Hibiscus brew for raised pressure 1. Plant: *Hibiscus sabdariffa*, dried red calyces only, not ornamental hibiscus flowers. 2. Dose: 10 g dried calyx a day, about two heaped tablespoons [VERIFY on volume], steeped in 500 ml of just-boiled water for 10 to 30 minutes, strained, drunk through the day (Herrera-Arellano 2004, Bourqui 2021). 3. Measure pressure before and after 4 weeks. If systolic has not fallen by 5 mmHg or more, stop and use another measure. 4. Not in pregnancy [VERIFY]. Stop if dizzy on standing. 5. It is an addition to salt, weight and aspirin rules, not a replacement for a salvaged drug in severe hypertension.

Protocol 4. Heart failure at home 1. Check for beriberi in anyone on a white rice or flour diet and give thiamine (THRIVING library, HY-08). 2. Sit the patient upright in bed or a chair, legs level or down when breathless. Do not lie them flat. 3. Weigh every morning before breakfast. A gain of 2 kg in three days means fluid is building [VERIFY]. 4. Avoid salty food. No evidence supports strict fluid limits, but avoid forcing drinks. 5. Short walks as breath allows. No prolonged bed rest (THRIVING library, NU-01). 6. Pulse above 90 and irregular: foxglove

under ME-07 Protocol A only. 7. Acute pulmonary oedema: sit fully up with legs over the bed edge, furosemide if salvaged (THRIVING library, ME-09), and if nothing else exists, venesection of 250 to 500 ml by a named person [OWNER].

Protocol 5. Suspected heart attack 1. Chest pain at rest over 20 minutes, with sweating, breathlessness or vomiting, in an adult. 2. Give aspirin 160 to 300 mg chewed at once, unless under 16, allergic to aspirin, or with active bleeding (ISIS-2 1988, IST 1997, THRIVING library, IN-02 for the age rule). 3. Then 75 to 160 mg a day [VERIFY on the lower figure] for life if stocks allow (ATT 2009). 4. Rest in a chair or propped up in bed. Sit out within days as pain allows (Levine and Lown 1952). 5. Watch for breathlessness (heart failure), fainting or a very slow or fast pulse. 6. Stop smoking. Gradual return to light work over 4 to 6 weeks [VERIFY].

Protocol 6. Stroke in the first 72 hours 1. FAST. Note the time of onset. Check blood sugar if a meter exists, and treat low sugar. 2. If drowsy, lie on the side with the weak side up, airway clear [VERIFY on side]. Otherwise any comfortable position (Anderson 2017). 3. Nothing by mouth until a swallow test. Sitting fully upright, three teaspoons of water, then a small cup. Cough, choking or a wet voice means fail (THRIVING library, NU-01, Protocol 4). 4. Failed test: mouth care, small sips only under supervision or thickened food by spoon, retest daily (THRIVING library, NU-01). 5. Turn every 2 to 4 hours. Sheepskin or soft surface under heels and sacrum. 6. Do not lower raised pressure with tablets in the first days (Bath and Krishnan 2014). No sublingual nifedipine. 7. Avoid a urinary catheter. Use a bottle, pad or commode. 8. Sit out of bed for short spells once awake and stable, usually after the first day (Bernhardt 2015). Beyond 72 hours see NU-04. 9. Fever or cough: suspect aspiration pneumonia (THRIVING library, IN reports for antibiotics).

Protocol 7. The aspirin decision in stroke [OWNER] 1. Adult over 16 with sudden focal weakness or speech loss. 2. No aspirin if: thunderclap headache, stiff neck, coma within the first hour, repeated vomiting, known bleeding disorder, or on salvaged anticoagulants. 3. No aspirin until the swallow test is passed, or give by rectum if a suppository form exists [VERIFY]. 4. Otherwise give aspirin 160 to 300 mg daily, starting within 48 hours, for two weeks (CAST 1997, IST 1997, Chen 2000). 5. Then 75 to 160 mg daily for life if stocks allow and there has been no new bleeding sign [VERIFY]. 6. Record every case and the outcome, so the village learns its own balance.

Protocol 8. Rheumatic fever prevention 1. Sore throat with fever and no cough in a child aged 3 to 15: penicillin (THRIVING library, IN-05). 2. After rheumatic fever, or with a known rheumatic murmur: benzathine penicillin 1.2 million units by deep intramuscular injection every 3 to 4 weeks (600,000 units under 30 kg) [VERIFY on dose], every two to three weeks if stocks allow (Manyemba 2003). 3. Continue for at least 10 years or to age 21 [VERIFY].

Numbers to carry

1. 10 mmHg less systolic pressure means about 27 per cent fewer strokes (Ettehad 2016).
2. 4.4 g less salt a day lowers hypertensive pressure by about 5/3 mmHg (He 2013).
3. A 25 per cent potassium salt cut stroke by 14 per cent and deaths by 12 per cent (Neal 2021).
4. DASH lowers hypertensive pressure by 11/5 mmHg. Each kilogram lost takes about 1 mmHg (Appel 1997, Neter 2003).
5. The wrong cuff on a big arm reads 19.5 mmHg too high (Ishigami 2023).
6. Aspirin in heart attack: deaths 9.4 against 11.8 per cent (ISIS-2 1988).
7. Stroke kills 1 in 10 infarctions and 1 in 2 haemorrhages within 30 days (Bamford 1990a).
8. Organised stroke nursing gives 2 more survivors per 100 (Langhorne 2020).
9. Hibiscus: 10 g of dried calyx a day.
10. Foxglove's therapeutic index is about 2 (THRIVING library, ME-07).

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