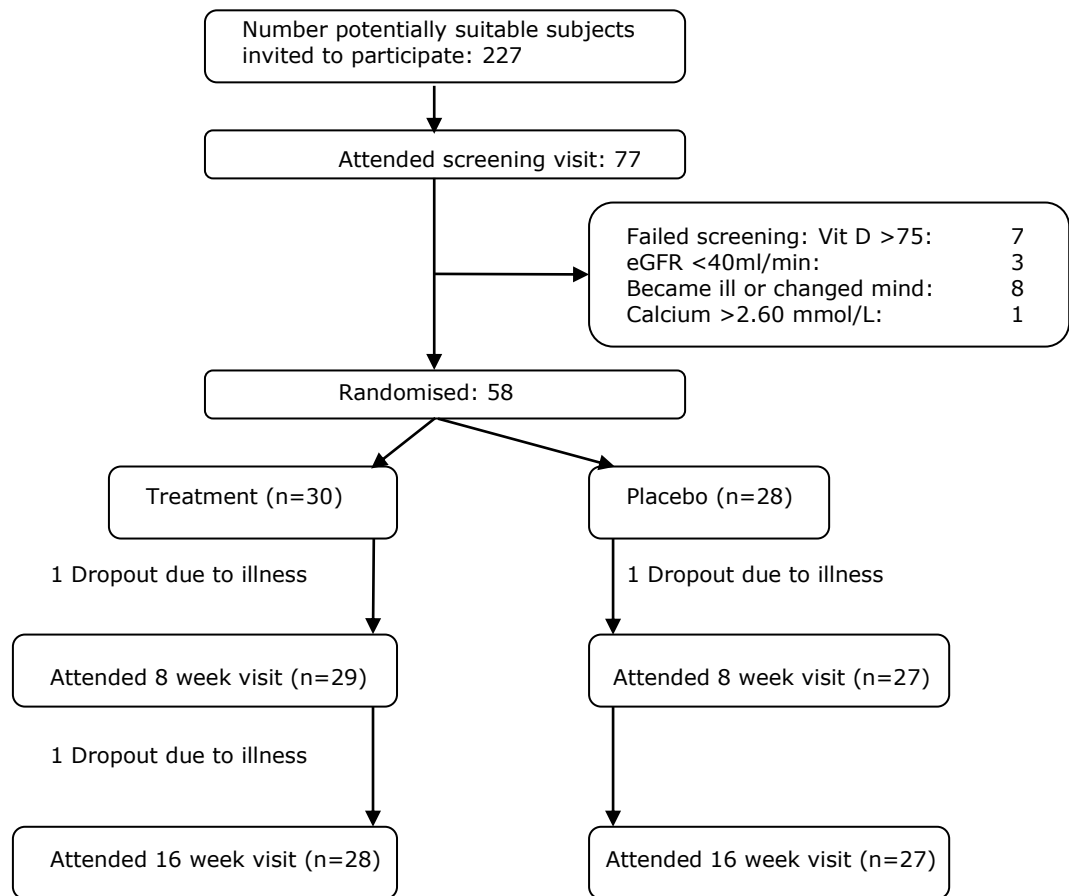


## Participant flow



### Baseline characteristics

|                                                 | Treatment (n=30) | Placebo (n=28) |
|-------------------------------------------------|------------------|----------------|
| Mean age (years) (SD)                           | 66.2 (13.0)      | 67.7 (6.9)     |
| Sex (male) (%)                                  | 18/30 (60)       | 24/28 (86)     |
| Own home vs supervised accommodation            | 26 vs 4          | 24 vs 4        |
| History of ischaemic heart disease (%)          | 7/30 (23)        | 7/28 (25)      |
| History of peripheral vascular disease (%)      | 1/30 (3)         | 4/28 (14)      |
| History of hypertension (%)                     | 24/30 (80)       | 19/28 (68)     |
| History of diabetes mellitus (%)                | 2/30 (7)         | 5/28 (18)      |
| Current smoker (%)                              | 6/30 (20)        | 3/28 (11)      |
| Body Mass Index (Kg m <sup>-2</sup> ) (SD)      | 27.3 (4.2)       | 26.1 (5.3)     |
| Type of stroke (ischaemic vs haemorrhagic)      | 29 vs 1          | 27 vs 1        |
| Aspirin (%)                                     | 21/30 (70)       | 23/28 (82)     |
| Dipyridamole (%)                                | 19/30 (63)       | 13/28 (46)     |
| Clopidogrel (%)                                 | 3/30 (10)        | 1/28 (4)       |
| ACE inhibitor / ARB (%)                         | 24/30 (80)       | 24/28 (86)     |
| Diuretic (%)                                    | 13/30 (43)       | 10/28 (36)     |
| Statin (%)                                      | 27/30 (90)       | 27/28 (96)     |
| Mean office systolic BP (mmHg) (SD)             | 125.4 (15.4)     | 131.6 (21.8)   |
| Mean office diastolic BP (mmHg) (SD)            | 70.6 (10.6)      | 74.3 (10.3)    |
| Mean 24 hour systolic BP (mmHg) (SD)            | 120.9 (11.6)     | 120.7 (14.6)   |
| Mean 24 hour diastolic BP (mmHg) (SD)           | 66.3 (10.3)      | 66.2 (7.6)     |
| Baseline FMD (% change) (SD)                    | 6.9 (4.5)        | 5.6 (3.9)      |
| Median baseline BNP (pg/ml) (IQR)               | 29.6 (59.9)      | 34.8 (117.2)   |
| Estimated GFR <60 ml/min/1.73m <sup>2</sup> (%) | 5/30 (16)        | 4/28 (14)      |

|                                      |             |             |
|--------------------------------------|-------------|-------------|
| Mean 25OHD (nmol/L) (SD)             | 38.7 (17.6) | 37.8 (17.8) |
| Mean adjusted calcium (mmol/L) (SD)  | 2.34 (0.09) | 2.30 (0.08) |
| Mean phosphate (mmol/L) (SD)         | 1.05 (0.20) | 1.09 (0.18) |
| Mean PTH (pmol/L) (SD)               | 6.19 (2.86) | 5.34 (3.03) |
| Mean total cholesterol (mmol/L) (SD) | 4.05 (0.81) | 3.73 (0.70) |

ACEi: Angiotensin converting enzyme. ARB: Angiotensin receptor blocker. PTH: Parathyroid hormone. 25OHD: 25 hydroxyvitamin D. BNP: B-type natriuretic peptide. FMD: Flow mediated dilatation. GFR: Glomerular filtration rate.

## Outcomes:

|                                               |          | Vitamin D<br>(n=29) | Placebo<br>(n=27) | <i>p</i> * |
|-----------------------------------------------|----------|---------------------|-------------------|------------|
| <i>Primary outcome:</i>                       |          |                     |                   |            |
| Mean 24 hr systolic BP (mmHg) (SD)            | 8 weeks  | 119.6 (11.4)        | 119.0 (15.2)      | 0.78       |
|                                               | 16 weeks | 117.3 (12.1)        | 121.0 (15.4)      | 0.09       |
| Mean 24 hr diastolic BP (mmHg) (SD)           | 8 weeks  | 64.4 (8.7)          | 65.7 (8.8)        | 0.45       |
|                                               | 16 weeks | 63.0 (8.9)          | 65.9 (9.0)        | 0.09       |
| Mean office systolic BP (mmHg) (SD)           | 8 weeks  | 126.1 (16.5)        | 131.3 (23.2)      | 0.97       |
|                                               | 16 weeks | 124.8 (15.2)        | 130.4 (22.3)      | 0.61       |
| Mean office diastolic BP (mmHg) (SD)          | 8 weeks  | 73.1 (11.9)         | 74.9 (9.7)        | 0.15       |
|                                               | 16 weeks | 71.1 (11.6)         | 74.2 (10.1)       | 0.92       |
| <i>Secondary outcomes:</i>                    |          |                     |                   |            |
| Mean FMD %change (SD)                         | 8 weeks  | 6.9 (3.5)           | 3.7 (3.1)         | 0.007      |
|                                               | 16 weeks | 4.7 (3.5)           | 5.5 (4.4)         | 0.53       |
| Median BNP (pg/ml) (IQR)                      | 8 weeks  | 48 (98)             | 40 (80)           | 0.30       |
|                                               | 16 weeks | 37 (84)             | 44 (80)           | 0.96       |
| Mean heart rate turbulence onset (%) (SD)     | 8 weeks  | -1.31 (3.40)        | -0.74 (2.44)      | 0.34       |
|                                               | 16 weeks | -1.21 (3.12)        | -0.40 (2.54)      | 0.23       |
| Median heart rate turbulence slope (ms) (IQR) | 8 weeks  | 4.8 (5.7)           | 4.3 (3.7)         | 0.33       |
|                                               | 16 weeks | 4.8 (5.5)           | 4.8 (5.4)         | 0.90       |
|                                               |          |                     |                   |            |
| Mean 25OHD (nmol/L)                           | 8 weeks  | 54 (15)             | 42 (21)           | 0.002      |
|                                               | 16 weeks | 51 (22)             | 40 (19)           | 0.05       |

\* P values derived from ANCOVA. All comparisons adjusted for baseline outcome and baseline 25OHD. FMD adjusted in addition for baseline systolic office blood pressure

BNP and Turbulence slope log-transformed prior to ANCOVA analysis

**Adverse events:**

|                           | Vitamin D | Placebo  |
|---------------------------|-----------|----------|
| Stroke                    | 0         | 1        |
| Elective foot surgery     | 1         | 1        |
| Diarrhoea                 | 1         | 0        |
| Gastrointestinal bleeding | 1         | 1        |
| Wrist fracture            | 1         | 0        |
| Giant cell arteritis      | 1         | 0        |
| Worsening back pain       | 1         | 0        |
| <b>TOTAL</b>              | <b>6</b>  | <b>3</b> |
|                           |           |          |
| Deaths                    | 0         | 0        |