Supplementary table 2. Characteristics of included studies regarding the influence of vitamin D supplementation on risk of stroke and clinical outcomes of stroke.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study/Year | Study type | Country | Subgroup | Vitamin D Type and  Dosage | n | Mean age  (years) | Gender  (female%) | Current  Smoker,  No. (%) | BMI, Mean  (SD) | Statin User | Hypertension  No. (%) | Diabetes, No.  (%) | Baseline  25-Hydroxyvitamin  D Level, Mean (SD),  ng/mL | Result |
| Gallagher et al. (2001) [[22](#_ENREF_22)] | RCT | USA (480 white, 6 black, and 2 Asian women) | Vitamin D or  vitamin D plus  HRT | Calcitriol, 0.25μg twice  daily | 245 | 71 (3.5) | 0 | NA | 27.3 (5) | NA | NA | NA | 31.2 (11) | Cerebrovascular accident: Vitamin D group: 10; Placebo group: 7;  HR: 1.44 (0.49, 4.54) |
| Placebo or  placebo plus HRT | 244 | 71.4 (4) | 0 | NA | 27.4 (6) | NA | NA | NA | 32 (10) |
| Trivedi et al. (2003) [[23](#_ENREF_23)] | RCT | UK | Vitamin D | Vitamin D3, 100 000  IU/4 mo | 1345 | 74.8 (4.6) | 1019 (75.8) | 59 (4.4) | 24.3 (3.4) | NA | NA | NA | NA | Cerebrovascular accident: HR: 1.02 (0.77 to 1.36); Cerebrovascular death: HR: 1.04 (0.61-1.77). |
| Placebo | 1341 | 74.7 (4.6) | 1018 (75.9) | 53 (4.0) | 24.4 (3.0) | NA | NA | NA | NA |
| Brazier et al. (2005) [[24](#_ENREF_24)] | RCT | France | Vitamin D plus  calcium | Vitamin D3, 400 IU  twice daily | 95 | 74.2 (6.4) | 0 | NA | 27.0 (4.4) | NA | NA | NA | 7.3 | Cerebrovascular accident: Vitamin D group: 1; Placebo group: 2; HR: 0.51 (0.01, 9.89) |
| Placebo | 97 | 75.0 (7.3) | 0 | NA | 26.4 (4.3) | NA | NA | NA | 7.0 |
| Grant et al. (2005) [[25](#_ENREF_25)] | RCT | UK | Vitamin D or  vitamin D plus  calcium | Vitamin D3, 800 IU daily | 2649 | 77 (6) | 409 (15.4) | 298  (11.2) | NA | NA | NA | NA | NA | Cerebrovascular accident: Vitamin D group: 160; Placebo group: 149;  HR: 1.08 (0.85, 1.36) |
| Placebo and  calcium | 2643 | 77 (6) | 402 (15.2) | 320  (12.1) | NA | NA | NA | NA | NA |
| Jackson et al. (2006) [[26](#_ENREF_26)] | RCT | USA (White 82.8%, Black: 9.3%, Hispanic: 4.3%, American Indian or Native American: 0.4; Asian or Pacific Islander: 2.0%, Unknown or not identified: 1.2%) | Vitamin D plus  calcium | Vitamin D3, 400 IU/d | 18 176 | 62.4 (7.0) | 0 | 1405  (7.7) | 29.1 (5.9) | 1178 (6.5) | 5447 (30.0) | 1055 (5.8) | NA | Cerebrovascular accident: Vitamin D group: 690; Placebo group: 659;  HR: 1.04 (0.94, 1.17);  White: 0.89 (0.72–1.09); Black: 0.73 (0.16–3.32); Asian or Pacific Islander: 2.98 (0.33–27.01) |
| Placebo | 18 106 | 62.4 (6.9) | 0 | 1356  (7.5) | 29.0 (5.9) | 1149 (6.3) | 5476 (30.2) | 1036 (5.7) | NA |
| Berggren et al. (2008) [[27](#_ENREF_27)] | RCT | Sweden | Vitamin D | Vitamin D3, 800 IU/d | 102 | 82.3 (6.6) | 28 (27.5) | NA | NA | NA | NA | 23 (22.5) | NA | Cerebrovascular accident: Vitamin D group: 27; Placebo group: 15;  HR: 1.97 (0.92, 4.29) |
| Placebo | 97 | 82.0 (5.9) | 23 (23.7) | NA | NA | NA | NA | 17 (17.5) | NA |
| Prince et al. (2008) [[28](#_ENREF_28)] | RCT | Australia | Vitamin D plus calcium | Vitamin D3, 1000 IU/d | 151 | 77.0 (4.2) | 0 | NA | 29.6 (3.5) | NA | NA | NA | 18.1 (5.0) | Cerebrovascular accident: Vitamin D group: 3; Placebo group: 3; HR: 1.00 (0.13, 7.59) |
| Placebo plus calcium | 151 | 77.4 (5.0) | 0 | NA | 28.2 (3.2) | NA | NA | NA | 17.7 (5.1) |
| Zhu et al. (2008) [[29](#_ENREF_29)] | RCT | Australia | Vitamin D plus  calcium | Vitamin D3, 1000 IU/d | 39 | 75.4 (2.7) | NA | NA | 27.6 (4) | NA | NA | NA | 26.8 (10.4) | Cerebrovascular accident: Vitamin D group: 1; Placebo group: 2;  HR: 1.04 (0.02, 20.54) |
| Placebo or  calcium | 81 | 74.4 (2.4) | NA | NA | 28.2 (4.1) | NA | NA | NA | 28 (10.4) |
| Sanders et al. (2010) [[30](#_ENREF_30)] | RCT | Australia | Vitamin D | Vitamin D3, 500 000  IU/y | 1131 | 76.4 (5.7) | 0 | NA | NA | NA | NA | NA | 53 (7) | Cerebrovascular accident: Vitamin D group: 8; Placebo group: 6; HR: 1.33 (0.40, 4.66) |
| Placebo | 1125 | 76.5 (5) | 0 | NA | NA | NA | NA | NA | 53 (7) |
| Witham et al. (2013) [[31](#_ENREF_31)] | RCT | UK | Vitamin D | Vitamin D3, 100 000  IU/3 mo | 80 | 76.9 (4.8) | 40 (50.0) | NA | 28.5 (5.0) | 41 (51.3) | 80 (100.0) | 11 (13.9) | 18 (6) | Cerebrovascular accident: Vitamin D group: 3; Placebo group: 1; 3.04 (0.24, 161.52) |
| Placebo | 79 | 76.7 (4.5) | 42 (53.2) | NA | 27.9 (4.5) | 46 (58.2) | 79 (100.0) | 11 (13.9) | 18 (6) |
| Wang et al. (2014) [[32](#_ENREF_32)] | RCT | China  Hong Kong | Vitamin D | Paricalcitol, 1 μg/d | 30 | 60.8 (10.2) | 18 (60.0) | 3 (10.0) | 26.6 (4.4) | 18 (60.0) | 30 (100.0) | 8 (26.7) | NA | Cerebrovascular accident: Vitamin D group: 0; Placebo group: 2; HR: 0.01 (0, 1.90) |
| Placebo | 30 | 62.2 (10.7) | 14 (46.7) | 3 (10.0) | 26.2 (4.5) | 20 (66.7) | 30 (100.0) | 13 (43.3) | NA |
| Baron et al. (2015) [[33](#_ENREF_33)] | RCT | USA (White: 88.8%, Black: 6.7; Asian or Pacific Islander: 2.5; Other: 2.0%) | Vitamin D plus  calcium | Vitamin D3, 1000  IU\day | 1130 | 58.1 (7) | 712 (63.0) | 119  (10.5) | 28.9 (5.0) | NA | NA | NA | 24.7 (8) | Cerebrovascular accident: Vitamin D group: 9; Placebo group: 5; HR: 1.80 (0.54, 6.88) |
| Placebo plus  calcium | 1129 | 58.0 (7) | 711 (63.0) | 96 (8.5) | 29.2 (5.1) | NA | NA | NA | 24.4 (8) |
| Scragg et al. (2015) [[34](#_ENREF_34)] | RCT | New Zealand | Vitamin D | Vitamin D3, Initial  200 000 IU, then  100 000 IU/mo | 2558 | 65.9 (8.3) | 1512 (59.1) | 164 (6.4) | 27.9 (4.2) | NA | 955 (37.3) | 265 (10.4) | 25.5 (9.5) | Cerebrovascular accident: 0.95 (0.55-1.62) |
| Placebo | 2550 | 65.9 (8.3) | 1457 (57.1) | 156 (6.1) | 27.9 (5.7) | NA | 930 (36.5) | 239 (9.4) | 25.2 (9.4) |
| Shoji et al. (2018) [[35](#_ENREF_35)] | RCT | Japan | Vitamin D | Alfacalcidol, 0.5 μg/d | 488 | 65 (10.4) | 301 (61.7) | NA | 21.1 (3) | 77 (15.8) | NA | NA | 25.5 (9.5) | Cerebrovascular accident: Vitamin D group: 28; Placebo group: 14; HR: 2.01 (1.01, 4.18) |
| Placebo | 476 | 65 (9.67) | 277 (58.2) | NA | 21.1 (3) | 81 (17.0) | NA | NA | 25.2 (9.4) |
| Manson et al. (2019) [[36](#_ENREF_36)] | RCT | USA (Non-Hispanic White: 71.3%, African American: 20.2%, Hispanic (not African American): 4%; Asian/Pacific Islander: 1.5%, American Indian/Alaskan Native: 0.9%, Other/unknown: 2.1%) | Vitamin D | Vitamin D3, 2000 IU/d | 12927 | 67.1 (7.0) | 6380 (49.4) | 921 (7.1) | 28.1 (5.7) | 4822 (37.3) | 6352 (49.1) | 1812 (14.0) | 30.9 (10) | Cerebrovascular accident: 0.95 (0.76–1.20); Cerebrovascular death: 0.84 (0.46–1.54) |
| Placebo | 12944 | 67.1 (7.1) | 6406 (49.5) | 915 (7.1) | 28.1 (5.8) | 4702 (36.3) | 6439 (49.7) | 1737 (13.4) | 30.8 (10) |

Abbreviations: CI, confidence interval; HR, hazard ratio; NA, not applicable; RCT, randomized controlled trial; USA, united states.