Table 18. Vitamin D and prostate cancer: Characteristics of observational studies (updated from original report)

| **Author Year****Study Name Location (Latitude)****[PMID]** | **Population** | **25(OH)D** | **Comparisons** | **Confounders/Effect Modifiers Adjusted** | **Comments** |
| --- | --- | --- | --- | --- | --- |
| **Nutrients** | **Demographic** | **Anthrop** | **Medical** | **UV Exposure** | **Life styles** |
| **Cohort Studies** |
| **Radioreceptor Assay** |
| Corder1993[114](#_ENREF_114)San FranciscoUS(37ºN)[8220092] | Health status | nd | Assay | Competitive protein-binding (Haddad, 1971) | Prostate cancer risk compared by baseline 25(OH)D |  | x |  |  | x |  | 50% black; 50% white |
| Mean age (range/SD), y | 57 (38–81) |
| Male (%) | 100 | Season blood drawn | nd |
| Nomura1998[118](#_ENREF_118)Honolulu HeartUS(21ºN)[9794175] | Health status | 64% smoked | Assay | Protein-binding | Prostate cancer risk stratified by baseline 25(OH)D quartiles |  | x |  |  | x | x | 100% Japanese Americans |
| Mean age (range/SD), y | 58 (49–70) |
| Male (%) | 100 | Season blood drawn | nd |
| Baron2005[112](#_ENREF_112)CPPUS(multiple latitudes)[15767334]B | Health status | had >1 colon adenoma removal | Assay | Competitive protein-binding (Quest) | Prostate cancer risk stratified by baseline 25(OH)D tertiles | x | x |  |  | x |  | 5% black |
| Mean age (range/SD), y | 62 (8.7) |
| Male (%) | 100 | Season blood drawn | nd |
| **Radioimmunoassay** |
| Ahn2008[110](#_ENREF_110)PLCOUS(21ºN to 44ºN)[18505967] | Health status | 8% current smoker | Assay | RIA (Heartland) | Prostate cancer risk stratified by baseline 25(OH)D quintiles | x |  | x | x |  | x |  |
| Mean age (range/SD), y | 67.8 (5.3) |
| Male (%) | 100 | Season blood drawn | nd |
| Platz 2004[119](#_ENREF_119) Mikhak 2007[117](#_ENREF_117)HPFSUS(multiple latitudes)[15090720][17440943] | Health status | Smoked 18%; DM 3.6% | Assay | RIA | Prostate cancer risk stratified by baseline 25(OH)D quartiles | x | x | x | x | x | x | 6% nonwhite |
| Mean age (range/SD), y | 66 (7) |
| Male (%) | 100 | Season blood drawn | nd |
| Freedman2007[103](#_ENREF_103)NHANES IIIUS (multiple latitudes)[17971526] | Health status | 28% current smoker | Assay | RIA | Prostate cancer mortality stratified by 2 baseline 25(OH)D categories | x | x | x | x | x | x | 71% white; 14% black; 6% Hispanics |
| Mean age (range/SD), y | 44 |
| Male (%) | 100 | Season blood drawn | South: Nov to Mar;North: Apr to Oct |
| Tuohimaa2004[120](#_ENREF_120)Helsinki Heart Vasterbotten; Janus Project;Finland(60°N)[14618623] | Health status | Gemfibrozil vs. placebo subjects | Assay | RIA (Incstar) | Prostate cancer risk stratified by 5 baseline 25(OH)D categories |  | x |  |  | x |  |  |
| Mean age (range/SD), y | <40 to >60 |
| Male (%) | 100 | Season blood drawn | nd |
| Li 2007[116](#_ENREF_116)Gann 1996[122](#_ENREF_122)PHSUS(multiple latitudes)[17388667][8850273] | Health status | on ASA, β-carotene, placebo trial; 9% current smoker | Assay | RIA (Bruce Hollis) | Prostate cancer risk stratified by baseline 25(OH)D quartiles |  | x |  |  |  | x | 94% white |
| Mean age (range/SD), y | 58.9 (8.3) |
| Male (%) | 100 | Season blood drawn | 24% spring or winter |
| Ahonen2000[111](#_ENREF_111)Helsinki HeartFinland(60°N)[11075874] | Health status | Gemfibrozil vs. placebo subjects | Assay | RIA (Incstar) | Prostate cancer risk stratified by baseline 25(OH)D quartiles |  | x | x | x | x | x |  |
| Mean age (range/SD), y | 40–57  |
| Male (%) | 100 | Season blood drawn | Jan-Feb; Mar-May; Sep |
| Tuohimaa 2007[121](#_ENREF_121)Helsinki Heart Finland(60°N)17301263 | Health status | Gemfibrozil vs. placebo subjects | Assay | RIA (Incstar) | Prostate cancer risk stratified by 3 baseline 25(OH)D categories |  | x | x | x |  |  |  |
| Mean age (range/SD), y | 51 (3.7) |
| Male (%) | 100 | Season blood drawn | Most in winter  |
| Jacobs2004[115](#_ENREF_115)NPCEastern US(25º46’N to 41ºN)[15225833] | Health status | Selenium vs. placebo subjectsA | Assay | RIA | Prostate cancer risk stratified by baseline 25(OH)D tertiles |  | x | x | x | x | x |  |
| Mean age (range/SD), y | 68 (nd) |
| Male (%) | 100 | Season blood drawn | nd |
| Braun1995[113](#_ENREF_113)WCC, MDUS(39°N)[7612803] | Health status | nd | Assay | RIA (Bruce Hollis, 1993) | Prostate cancer risk stratified by baseline 25(OH)D quintiles |  | x |  |  |  |  | 100% white |
| Mean age (range/SD), y | <45–75+ |
| Male (%) | 100 | Season blood drawn | Aug through Nov |
| **Nested case-control studies** |
| **Radioimmunoassay** |
| Shui, 2012[108](#_ENREF_108)Health Professionals’Followup StudyUS | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D quartiles | X | X | X | X | X | X |  |
| Mean age (SD), y | 64.4 (SD 7.8) |
| Male (%) | 100% |
| Mean age (range/SD), y | 73.6 (5.9) |
| Male (%) | 100% |
| **Enzyme-linked Immunoabsorption Assay** |
| Park, 2010[107](#_ENREF_107)Multiethnic Cohort Study | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D quartiles | X |  | X |  |  |  |  |
| Mean age (SD), y | 68.7 (SD 7.2) |
| Male (%) | 100% |
| Travis 2009[109](#_ENREF_109)European Prospective Investigation into Cancerand Nutrition (EPIC)Multiple Countries | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D  |  | X | X |  |  | X |  |
| Mean age (SD), y | 60.5 (SD 6.2) |
| Male (%) | 100% |
| Ordonez-Mena 2013[97](#_ENREF_97)ESTHERSaarland, Germany | Health statusMean ageMale (%) | NR50–7454% |  |  | Cancer mortality stratified by baseline 25(OH)D tertiles | X |  | X | X |  |  | confounders- add multivitamin use, fish consumption, red meat consumption, daily fruit intake, daily vegetable intake, scholarly education, physical activity, family history of cancer |
| **HPLC-Tandem Mass Spectrometry** |
| Barnett, 2010[104](#_ENREF_104)MrOSUS(various) | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D quartiles |  | X |  |  | X | X |  |
| Mean age (range/SD), y | 73.6 (5.9) |
| Male (%) | 100% |
| Brandstedt, 2012[105](#_ENREF_105)Malmo, Sweden | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D quartiles |  | X | X |  |  | X | Malmo Diet and Cancer Study (MDCS) |
| Mean age (range), y | 61.7 (NR, SD 6.4) |
| Male (%) | 100% |
| Meyer, 2013[106](#_ENREF_106)Norway | Health status | nd |  |  | Prostate cancer risk stratified by baseline 25(OH)D sextiles |  | X |  |  | X |  |  |
| Mean age (range), y | 48.2 (SD 9.2) |
| Male (%) | 100% |

AFor prevention of recurrence of non-melanoma skin cancer.

BThis is a cohort study, not a nested case-control study.