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** | | | | | | | | | | | | |
| Corder  1993[114](#_ENREF_114)  San Francisco  US  (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 |
| Nomura  1998[118](#_ENREF_118)  Honolulu Heart  US  (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 |
| Baron  2005[112](#_ENREF_112)  CPP  US  (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** | | | | | | | | | | | | |
| Ahn  2008[110](#_ENREF_110)  PLCO  US  (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)  HPFS  US  (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 |
| Freedman  2007[103](#_ENREF_103)  NHANES III  US (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 |
| Tuohimaa  2004[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)  PHS  US  (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 |
| Ahonen  2000[111](#_ENREF_111)  Helsinki Heart  Finland  (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 |
| Jacobs  2004[115](#_ENREF_115)  NPC  Eastern 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 |
| Braun  1995[113](#_ENREF_113)  WCC, MD  US  (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 Study  US | 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 Cancer  and 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)  ESTHER  Saarland, Germany | Health status  Mean age  Male (%) | NR  50–74  54% |  |  | 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)  MrOS  US  (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.