

Supplementary Fig. 1. Association between risk of prostate cancer and testosterone levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the I^2 statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; BLSA = Baltimore Longitudinal Study of Aging; CARET = Carotene and Retinol Efficacy Trial; CLUE = CLUE Study, Washington County, MD; EPIC = European Prospective Investigation into Cancer and Nutrition; FMC = Finnish Mobile Clinic Health Examination Survey; HHS = Helsinki Heart Study; HPFS = Health Professionals Follow-up Study; JACC = Japan Collaborative Cohort Study; Janus = Janus Serum Bank; JHCS = Japan–Hawaii Cancer Study; MCCS = Melbourne Collaborative Cohort Study; NBSBWG = Nordic Biological Specimen Biobank Working Group; NSHDC = Northern Sweden Health and Disease Cohort; PHS = Physician’s Health Study; ProtecT = Prostate Testing for Cancer and Treatment; RBS = Rancho Bernardo Study; RR = relative risk; CI = confidence interval.

Supplementary Fig. 2. Association between risk of prostate cancer and free testosterone levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the square is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the I^2 statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; BLSA = Baltimore Longitudinal Study of Aging; CARET = Carotene and Retinol Efficacy Trial; EPIC = European Prospective Investigation into Cancer and Nutrition; FMC = Finnish Mobile Clinic Health Examination Survey; HHS = Helsinki Heart Study; HPFS = Health Professionals Follow-up Study; JACC = Japan Collaborative Cohort Study; Janus = Janus Serum Bank; JHCS = Japan–Hawaii Cancer Study; MCCS = Melbourne Collaborative Cohort Study; NBSBWG = Nordic Biological Specimen Biobank Working Group; NSHDC = Northern Sweden Health and Disease Cohort; PHS = Physician’s Health Study; ProtecT = Prostate Testing for Cancer and Treatment; RR = relative risk; CI = confidence interval.

Supplementary Fig. 3. Association between risk of prostate cancer and dihydrotestosterone levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median

hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the *I*² statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; CLUE = CLUE Study, Washington County, MD; HPFS = Health Professionals Follow-up Study; JHCS = Japan–Hawaii Cancer Study; PHS = Physician’s Health Study; RBS = Rancho Bernardo Study; DHT = dihydrotestosterone; RR = relative risk; CI = confidence interval.

Supplementary Fig. 4. Association between risk of prostate cancer and androstenediol glucuronide levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the *I*² statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; CARET = Carotene and Retinol Efficacy Trial; EPIC = European Prospective Investigation into Cancer and Nutrition; HPFS = Health Professionals Follow-up Study; Janus = Janus Serum Bank; JHCS = Japan–Hawaii Cancer Study; MCCS = Melbourne Collaborative Cohort Study; PHS = Physician’s Health Study; RR = relative risk; CI = confidence interval.

Supplementary Fig. 5. Association between risk of prostate cancer and dehydroepiandrosterone sulfate levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the *I*² statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; BLSA = Baltimore Longitudinal Study of Aging; CARET = Carotene and Retinol Efficacy Trial; CLUE = CLUE Study, Washington County, MD; KPMCP = Kaiser Permanente Medical Care Program; MCCS = Melbourne Collaborative Cohort Study; RBS = Rancho Bernardo Study; DHEA-S = dehydroepiandrosterone sulfate; RR = relative risk; CI = confidence interval.

Supplementary Fig. 6. Relative risk of prostate cancer associated with androstenedione levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the square is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the *I*² statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; CARET = Carotene and Retinol Efficacy Trial; EPIC = European Prospective Investigation into Cancer and Nutrition; FMC = Finnish Mobile Clinic Health Examination Survey; JHCS = Japan–Hawaii Cancer Study; MCCC = Melbourne Collaborative Cohort Study; RR = relative risk; CI = confidence interval.

Supplementary Fig. 7. Association between risk of prostate cancer and estradiol levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The *P* value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the *H* and the *I*² statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; CARET = Carotene and Retinol Efficacy Trial; CLUE = CLUE Study, Washington County, MD; HPFS = Health Professionals Follow-up Study; JHCS = Japan–Hawaii Cancer Study; MCCC = Melbourne Collaborative Cohort Study; NSHDC = Northern Sweden Health and Disease Cohort; PHS = Physician’s Health Study; RBS = Rancho Bernardo Study; RR = relative risk; CI = confidence interval.

Supplementary Fig. 8. Association between risk of prostate cancer and free estradiol levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the square is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically

significantly different from the overall result. The P value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the H and the I^2 statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; CARET = Carotene and Retinol Efficacy Trial; CLUE = CLUE Study, Washington County, MD; HPFS = Health Professionals Follow-up Study; JHCS = Japan–Hawaii Cancer Study; MCCC = Melbourne Collaborative Cohort Study; NSHDC = Northern Sweden Health and Disease Cohort; PHS = Physician’s Health Study; RR = relative risk; CI = confidence interval.

Supplementary Fig. 9. Association between risk of prostate cancer and sex hormone–binding globulin levels by study. The relative risk is the estimate of the linear trend for each sex hormone obtained by replacing the categorical variables representing the fifths with a continuous variable scored as 0, 0.25, 0.5, 0.75, and 1, which is equivalent to comparing the highest with the lowest fifth. The ratio of the median hormone concentrations in these two fifths is also shown. The position of each **square** indicates the magnitude of the relative risk, and the area of the **square** is proportional to the amount of statistical information available (inverse of the variance of the logarithm of the relative risk). The length of the **horizontal line** through the **square** indicates the 95% confidence interval. The **dashed line** represents the all-studies RR. Heterogeneity between studies was assessed by a chi-square statistic that tested whether the study-specific results were statistically significantly different from the overall result. The P value for statistical significance of the chi-square heterogeneity statistic was two-sided. Heterogeneity was also quantified by the H and the I^2 statistics. ATBC = Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study; BLSA = Baltimore Longitudinal Study of Aging; CARET = Carotene and Retinol Efficacy Trial; CLUE = CLUE Study, Washington County, MD; EPIC = European Prospective Investigation into Cancer and Nutrition; FMC = Finnish Mobile Clinic Health Examination Survey; HHS = Helsinki Heart Study; HPFS = Health Professionals Follow-up Study; JACC = Japan Collaborative Cohort Study; Janus = Janus Serum Bank; JHCS = Japan–Hawaii Cancer Study; MCCC = Melbourne Collaborative Cohort Study; NBSBWG = Nordic Biological Specimen Biobank Working Group; NSHDC = Northern Sweden Health and Disease Cohort; PHS = Physician’s Health Study; ProtecT = Prostate Testing for Cancer and Treatment; RBS = Rancho Bernardo Study; SHBG = sex hormone–binding globulin; RR = relative risk; CI = confidence interval.