**Supplementary Table 1. Comparison of included and excluded living kidney donors in the United States**

| **Characteristic** |  | **Number of included donors(% of total)** | **Number excluded donors(% of total)** |
| --- | --- | --- | --- |
|  |
| Total |  | 84,357 | 44,095 |
|  |
| Sex | Male | 33,878 (40.16) | 17,459 (39.59) |
|  | Female | 50,479 (59.84) | 26,636 (60.41) |
|  |
| Age at donation, years | Unknown |  | 7 ( 0.02) |
|  | 0-17 | 13 ( 0.02) | 11 ( 0.02) |
|  | 18-34 | 26,946 (31.94) | 13,542 (30.71) |
|  | 35-49 | 37,386 (44.32) | 19,264 (43.69) |
|  | 50-64 | 18,726 (22.20) | 10,386 (23.55) |
|  | 65+ | 1,286 ( 1.52) | 885 ( 2.01) |
|  |
| Race/ethnicity | Other/missing |  | 1,252 ( 2.84) |
|  | White, Non-Hispanic | 57,336 (67.97) | 32,664 (74.08) |
|  | Black, Non-Hispanic | 10,652 (12.63) | 4,903 (11.12) |
|  | Hispanic | 13,176 (15.62) | 3,834 ( 8.69) |
|  | Asian/Pacific Islander | 3,193 ( 3.79) | 1,442 ( 3.27) |
|  |
| Calendar year of donation | 1995-1999 | 13,795 (16.35) | 6,346 (14.39) |
|  | 2000-2004 | 21,969 (26.04) | 8,927 (20.24) |
|  | 2005-2009 | 22,415 (26.57) | 8,990 (20.39) |
|  | 2010-2014 | 18,041 (21.39) | 10,898 (24.71) |
|  | 2015-2017 | 8,137 ( 9.65) | 8,934 (20.26) |
|  |
| Kidney transplant after donation | No | 84,279 (99.91) | 44,054 (99.91) |
| Yes | 78 ( 0.09) | 41 ( 0.09) |
|  |
| Exit follow-up by death | No | 83,410 (98.88) | 43,691 (99.08) |
|  | Yes | 947 ( 1.12) | 404 ( 0.92) |
|  |
| Highest education level | Missing/unknown | 27,585 (32.70) | 13,138 (29.79) |
|  | Grade school | 1,130 ( 1.34) | 556 ( 1.26) |
|  | High school | 17,797 (21.10) | 8,791 (19.94) |
|  | Attended college | 15,880 (18.82) | 8,513 (19.31) |
|  | Associate/bachelor’s degree | 15,538 (18.42) | 9,015 (20.44) |
|  | Post-college education | 6,427 ( 7.62) | 4,082 ( 9.26) |

**Supplementary Table 2. Prevalent cancer diagnoses present among 390 living kidney donors at baseline.**

| **Cancer Site** | **Frequency** |
| --- | --- |
| Lip | 4 |
| Tongue | 3 |
| Salivary Gland | 2 |
| Gum and Other Mouth | 1 |
| Small Intestine | 1 |
| Cecum | 1 |
| Appendix | 2 |
| Hepatic Flexure | 1 |
| Transverse Colon | 1 |
| Splenic Flexure | 1 |
| Descending Colon | 3 |
| Sigmoid Colon | 9 |
| Large Intestine, NOS | 1 |
| Rectosigmoid Junction | 3 |
| Rectum | 4 |
| Pancreas | 1 |
| Nose, Nasal Cavity and Middle Ear | 1 |
| Lung | 3 |
| Trachea, Mediastinum and Other Respiratory Organs | 1 |
| Bones and Joints | 3 |
| Soft Tissue including Heart | 3 |
| Melanoma | 37 |
| Other Non-Epithelial Skin | 7 |
| Breast | 70 |
| Cervix | 25 |
| Uterus | 18 |
| Ovary | 8 |
| Vulva | 2 |
| Other Female Genital Organs | 3 |
| Prostate | 43 |
| Testis | 8 |
| Bladder | 1 |
| Kidney | 34a |
| Brain | 5 |
| Cranial Nerves Other Nervous System | 1 |
| Thyroid | 59 |
| Other Endocrine including Thymus | 1 |
| Hodgkin Lymphoma | 2 |
| Non-Hodgkin Lymphoma | 7 |
| Acute Myeloid Leukemia | 2 |
| Miscellaneous | 3 |
| Tumors with Poorly Specified Morphology | 6 |
| Total\* | 391b |

Supplementary Table 2 notes

a Thirteen of these kidney cancers were diagnosed at the time of donation. Among the 34 prevalent kidney cancers, information on the laterality of the cancer was available for 30 cases, and the laterality matched the kidney that was donated for 29 of these 30 cases.

b One donor had 2 cancer diagnoses prior to donation (breast cancer and uterine cancer).

**Supplementary Table 3. Risk factors for colorectal and kidney cancers among living kidney donors**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Colorectal cancer** |  | **Kidney cancer** |
|   | **IRR** | **Lower 95%CI** | **Upper 95%CI** |  | **IRR** | **Lower 95%CI** | **Upper 95%CI** |
| Male sex | 1.23 | 0.94 | 1.62 |  | 1.56 | 0.78 | 3.13 |
| Attained age, per year | 1.06 | 1.05 | 1.08 |  | 1.05 | 1.01 | 1.09 |
| Race/ethnicity |  |  |  |  |  |  |  |
|  White, non-Hispanic | ref |  |  |  | ref |  |  |
|  Black, non-Hispanic | 1.57 | 1.05 | 2.35 |  | 1.25 | 0.43 | 3.67 |
|  Hispanic | 1.20 | 0.79 | 1.83 |  | 1.37 | 0.51 | 3.62 |
|  Asian/Pacific Islander | 0.87 | 0.39 | 1.98 |  | --a | -- | -- |
| Time since donation more than 7 years | 2.34 | 1.76 | 3.09 |  | 6.30 | 2.59 | 15.3 |

Supplementary Table 3 notes

Abbreviations: CI confidence interval, IRR incidence rate ratio, ref reference

Incidence rate ratios are from a multivariate Poisson regression model that included all of the variables in the table.

a There were no cases of kidney cancer among Asian/Pacific Islander donors.

**Supplementary Table 4. Association of prevalent diagnosis of colorectal or kidney cancer with subsequent incidence of the same cancer after donation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Incident cancers, N** | **Person-years of follow-up** | **Incidence rate, per 100,000 person-years** | **Exact p-value** |
| Colorectal cancer |  |  |  | 0.002 |
|  Prevalent diagnosis absent | 205 | 667,201 | 30.7 |  |
|  Prevalent diagnosis present | 1 | 172 | 581 |  |
| Kidney cancer |  |  |  | 0.01 |
|  Prevalent diagnosis absent | 31 | 667,121 | 4.6 |  |
|  Prevalent diagnosis present | 1 | 253 | 395 |  |

**Supplementary Table 5. Prevalence of cancer within the past 5 years among individuals in the United States general population**

|  |  |
| --- | --- |
| **Age, years** | **Prevalence, %** |
|  | **Overall** | **Males** | **Females** |
| 20-24  | 0.13 | 0.13 | 0.13 |
| 25-29  | 0.21 | 0.18 | 0.23 |
| 30-34  | 0.34 | 0.26 | 0.42 |
| 35-39  | 0.50 | 0.33 | 0.67 |
| 40-44  | 0.75 | 0.46 | 1.04 |
| 45-49  | 1.15 | 0.73 | 1.56 |
| 50-54  | 1.81 | 1.39 | 2.21 |
| 55-59  | 2.55 | 2.37 | 2.73 |
| 60-64  | 3.57 | 3.74 | 3.41 |
| 65-69  | 4.95 | 5.66 | 4.33 |
| 70-74  | 6.00 | 7.08 | 5.08 |
| 75-79  | 6.45 | 7.71 | 5.44 |
| 80-84  | 6.29 | 7.52 | 5.42 |
| 85+  | 5.16 | 6.63 | 4.36 |

Supplementary Table 4 notes

Data are from SEER13 cancer registries (<https://seer.cancer.gov/registries>). Statistics correspond to estimated 5-year limited duration prevalence of cancer (prevalence date: January 1, 2017).