

## Correction

**Correction: Lipophilic Statin Use and Risk of Breast Cancer Subtypes**

In this article (*Cancer Epidemiol Biomarkers Prev* 2010;19:2479–87), which was published in the October 2010 issue of *Cancer Epidemiology, Biomarkers & Prevention* (1), the authors discovered errors in some of the data. The authors repeated the analyses of Tables 1–4 using the corrected data and revised accordingly. Descriptions of the revisions and the revised tables are shown below.

In revised Table 1, there were fewer users of oral contraceptives and menopausal hormone therapy. There were also fewer ever users of lipophilic statins, with very little change in the number of women with 2 or more years of use. Mean duration of statin use was longer among ever users, with little change among women with 2 or more years of use.

In revised Table 2, the odds ratios (ORs) for hormone receptor (HR)-negative breast cancer remained nonsignificant for all categories of statin use, although the inverse association became stronger among women with 5 or more years of use. There was almost no change in the results for HR-positive breast cancers.

In revised Table 3, the ORs for risk of intrinsic breast cancer subtypes and statin use changed only slightly and remained nonsignificant for all 4 subtypes.

In revised Table 4, the case-only ORs for the association of various tumor characteristics with statin use remained nonsignificant for all examined parameters. The borderline significant association of progesterone receptor status and statin use became weaker and nonsignificant.

The overall conclusion remained unchanged: these findings do not confirm a preventive association between lipophilic statin use and breast cancer.

The authors sincerely regret these data errors and thank Joan Schwalbe for preparation of the corrected tables.

**Table 1.** Characteristics of breast cancer cases diagnosed during 1997 to 2007 at KPNC and matched controls, by disease and hormone receptor status

Characteristics	All controls N = 208,640	All cases N = 20,864	HR-negative cases N = 3,669	HR-positive cases N = 17,195
Age at diagnosis/index date (y): mean ± SD	61.88 ± 13.00	61.76 ± 13.00	58.59 ± 13.24	62.65 ± 12.84
Years of prescription drug coverage: mean ± SD	7.43 ± 3.18	7.43 ± 3.18	7.37 ± 3.15	7.44 ± 3.19
Oral contraceptive use <sup>a</sup> : n, (col%)	13,492 (6.5)	1,618 (7.7)	335 (9.1)	1,283 (7.5)
Menopausal hormone therapy use <sup>b</sup> : n, (col%)	68,347 (32.8)	7,673 (36.8)	1,203 (32.8)	6,470 (37.6)
Lipophilic statin use: n, (col%)				
Never use	174,537 (83.6)	17,464 (83.7)	3,147 (85.8)	14,317 (83.3)
"Ever" use	34,103 (16.3)	3,000 (16.3)	522 (14.2)	2,878 (16.7)
"≥2 years" use	18,343 (8.8)	1,850 (8.9)	257 (7.0)	1,593 (9.3)
Years of lipophilic statin use: mean ± SD				
Among "Ever" users	0.91 ± 1.72	0.87 ± 1.72	0.75 ± 1.53	0.90 ± 1.76
Among "≥2 years" users	4.48 ± 2.21	4.55 ± 2.29	4.35 ± 2.27	4.59 ± 2.29
Race/ethnicity <sup>c</sup> : n, (col%)				
Non-Hispanic White	n/a	15,283 (73.2)	2,322 (63.3)	12,961 (75.4)
Hispanic White	n/a	1,386 (6.6)	318 (8.7)	1,068 (6.2)
African American	n/a	1,597 (7.6)	517 (14.1)	1,080 (6.3)
Asian/Pacific Islander	n/a	2,193 (10.5)	419 (11.4)	1,774 (10.3)
Other	n/a	405 (1.9)	93 (2.5)	312 (1.8)

<sup>a</sup>Oral contraceptive "ever" use within 10 years before diagnosis/index date.

<sup>b</sup>Hormone therapy "ever" use within 5 years before diagnosis/index date.

<sup>c</sup>Race information was captured by the KPNC and was available for cases only.

## Correction

**Table 2.** Risk of HR-negative or positive breast cancer associated with statin use

Statin use	HR-negative cases N = 3,669 n (col%)	Matched controls <sup>a</sup> N = 36,690 n (col%)	OR [95% confidence interval (CI)] <sup>b</sup>	HR-positive cases N = 17,195 n (col%)	Matched controls <sup>c</sup> N = 171,950 n (col%)	OR (95% CI) <sup>d</sup>
Never	3,147 (85.8)	31,474 (85.8)	Reference	14,317 (83.3)	143,063 (83.2)	Reference
≥2 years	257 (7.0)	2,720 (7.4)	<b>0.93 (0.81–1.08)</b>	1,593 (9.3)	15,623 (9.1)	<b>1.02 (0.96–1.08)</b>
Never	3,147 (85.8)	31,474 (85.8)	Reference	14,317 (83.3)	143,063 (83.2)	Reference
<1 y	132 (3.6)	1,257 (3.4)	<b>1.04 (0.87–1.25)</b>	654 (3.8)	6,808 (4.0)	<b>0.95 (0.88–1.04)</b>
≥1–2 y	133 (3.6)	1,239 (3.4)	<b>1.07 (0.88–1.28)</b>	631 (3.7)	6,456 (3.7)	<b>0.97 (0.89–1.06)</b>
≥2–3 y	91 (2.5)	829 (2.3)	<b>1.09 (0.87–1.36)</b>	465 (2.7)	4,717 (2.7)	<b>0.98 (0.89–1.08)</b>
≥3–5 y	96 (2.6)	1,063 (2.9)	<b>0.89 (0.72–1.11)</b>	593 (3.4)	5,990 (3.5)	<b>0.99 (0.90–1.08)</b>
≥5 y	70 (1.9)	828 (2.3)	<b>0.83 (0.65–1.08)</b>	535 (3.1)	4,916 (2.9)	<b>1.08 (0.98–1.19)</b>

<sup>a</sup>Controls matched to HR-negative cases bases on age at diagnosis/index date and years of prescription drug coverage.

<sup>b</sup>ORs based on conditional logistic regression among HR-negative cases and their matched controls, adjusted for oral contraceptive and hormone therapy use.

<sup>c</sup>Controls matched to HR-positive cases bases on age at diagnosis/index date and years of prescription drug coverage.

<sup>d</sup>ORs based on conditional logistic regression among HR-positive cases and their matched controls, adjusted for oral contraceptive and hormone therapy use.

**Table 3.** Risk of intrinsic breast cancer subtypes associated with statin use

Study population	Statin use ≥2 years	Statin use "Never"	OR (95% CI) <sup>a</sup>
<b>Luminal A</b>			
Controls	8,889 (15.8)	47,182 (84.1)	Reference
Cases	931 (16.4)	4,728 (83.5)	<b>1.05 (0.97–1.14)</b>
<b>Luminal B</b>			
Controls	1,837 (13.6)	11,658 (86.4)	Reference
Cases	176 (12.9)	1,185 (87.1)	<b>0.96 (0.81–1.15)</b>
<b>HER2+/ER–</b>			
Controls	684 (12.2)	4,916 (87.8)	Reference
Cases	70 (12.3)	498 (87.7)	<b>1.02 (0.77–1.36)</b>
<b>Triple negative</b>			
Controls	1,234 (12.7)	8,461 (87.3)	Reference
Cases	111 (11.5)	851 (88.5)	<b>0.88 (0.71–1.10)</b>

<sup>a</sup>ORs based on conditional logistic regression among cases and their matched controls, adjusted for oral contraceptive and hormone therapy use.

**Table 4.** Tumor characteristics associated with statin use

Tumor characteristics	Statin use ≥2 y	Statin use "Never"	OR (95% CI) <sup>a</sup>
ER status			
ER+	1,588 (10.1)	14,134 (89.9)	Reference
ER–	262 (7.3)	3,330 (92.7)	<b>0.90 (0.78–1.04)</b>
PR status			
PR+	1,276 (10.0)	11,496 (90.0)	Reference
PR–	564 (8.7)	5,910 (91.3)	<b>0.92 (0.82–1.03)</b>
HER2 status <sup>b</sup>			
HER2–	1,042 (15.7)	5,579 (84.3)	Reference
HER2+	247 (12.8)	1,684 (87.2)	<b>0.94 (0.80–1.10)</b>
Intrinsic subtype <sup>b</sup>			
Luminal A	931 (16.4)	4,728 (83.5)	Reference
Luminal B	176 (12.9)	1,185 (87.1)	<b>0.96 (0.88–1.05)</b>
HER2+/ER–	70 (12.3)	498 (87.7)	<b>0.95 (0.83–1.10)</b>
Triple-negative	111 (11.5)	851 (88.5)	<b>0.92 (0.82–1.03)</b>
Tumor stage			
Localized	1,298 (10.2)	11,377 (89.8)	Reference
Regional	483 (8.2)	5,410 (91.8)	<b>0.99 (0.94–1.05)</b>
Metastasis	59 (9.7)	550 (90.3)	<b>1.01(0.87–1.17)</b>
Tumor grade			
Grade I	452 (11.0)	3,652 (89.0)	Reference
Grade II	761 (10.2)	6,711 (89.8)	<b>1.02 (0.95–1.09)</b>
Grade III	392 (7.7)	4,686 (92.3)	<b>0.99 (0.92–1.06)</b>

<sup>a</sup>OR adjusted for age, prescription drug coverage, oral contraceptive use, hormone therapy use, and race.

<sup>b</sup>HER2 status was only evaluated in tumors 2002 to 2007.

## Reference

1. Woditschka S, Habel LA, Udaltsova N, Friedman GD, Sieh W. Lipophilic statin use and risk of breast cancer subtypes. *Cancer Epidemiol Biomarkers Prev* 2010;19:2479–87.

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