referral (statute 627.6472). Florida also has several cancer initiatives that may be positively influencing screening activities, such as the Governor’s Task Force on Skin Cancer Prevention and the Moffitt Cancer Center’s program, “Mole Patrol.” This center has launched educational opportunities for Florida health care providers, which could have led to a greater awareness for routine screening. In addition, many Florida dermatologists have completed their residency in Florida, and are thus more aware of the dangers of residing at Florida’s latitude. Finally, living in the “Sunshine State” may raise awareness of the need for skin cancer screening, especially for those with a family history of cancer.

Limitations of this study include the self-report and cross-sectional nature of the NHIS. A similarly worded self-reported whole-body skin examination question has been validated previously at a sensitivity of 90.5%, but this study was conducted outside of the United States. Also, it is unclear who is conducting the screening, and previous literature has shown that screening accuracy varies by practitioner type. Nevertheless, the combination of stakeholder efforts for skin cancer screening is essential, especially given the high prevalence of melanoma in Florida.

Role of the Sponsors: The sponsors had no role in the design and conduct of the study; in the collection, analysis, and interpretation of data; or in the preparation, review, or approval of the manuscript.

No Association Between Coffee and Caffeine Intake and Risk of Psoriasis in US Women

Psoriasis is an immune-mediated disorder, but the involved genetic and environmental factors remain to be elucidated. The positive and negative effects of coffee and caffeine on psoriasis have been reported previously. Among the positive effects, coffee has anti-oxidative properties that may help quell inflammation; topical caffeine has been used for the psoriasis treatment; and coffee intake may improve the efficacy of methotrexate and sulfasalazine for psoriasis treatment. On the other hand, diterpenes present in unfiltered coffee and caffeine may increase serum cholesterol levels and blood pressure; exceptionally high caffeine plasma levels were shown to induce an adverse effect of photochemotherapy on psoriasis; and coffee and caffeine have been implicated as contributing to psoriasis and flaring psoriasis phenotypes, although this last association has not been scientifically proven. It would be of public health significance to elucidate the long-term relationship between coffee and caffeine intake and the risk of psoriasis. Currently, there is a paucity of research on this topic, and the association remains unclear. Herein, we evaluated the association between consumption of coffee, decaffeinated coffee, and caffeine and the risk of incident psoriasis in women in the United States.

Methods. Participants free of psoriasis in 1991 were included from the Nurses’ Health Study (NHS II) and ob-
Table 1. Age-Standardized Baseline Characteristics of Study Participants by Coffee and Caffeine Intake in NHS IIa

| Characteristic                        | Cases, No. | Person-years | Q1 (n = 16 604) | Q2 (n = 16 460) | Q3 (n = 16 438) | Q4 (n = 16 570) | Q5 (n = 16 467) |
|---------------------------------------|------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Age, yb                               | 35.6 (4.8) | 35.5 (4.8)   | 36.0 (4.7)     | 36.7 (4.4)     | 37.2 (4.4)     | 37.2 (4.4)     | 37.2 (4.4)     |
| BMI                                   | 24.4 (5.3) | 24.8 (5.6)   | 24.6 (5.3)     | 24.4 (5.1)     | 24.4 (4.9)     | 24.4 (4.9)     | 24.4 (4.9)     |
| Current smoking, %                    | 5.2        | 7.0          | 10.2           | 14.3           | 25.9           |                |                |
| Alcohol intake, g/wk                  | 1.7 (4.5)  | 2.3 (4.8)    | 3.1 (5.7)      | 4.4 (7.3)      | 4.2 (7.0)      |                |                |
| Vigorous physical activity, metabolic equivalent, h/wk | 13.4 (21.0) | 13.0 (21.8)  | 13.8 (23.0)    | 14.3 (23.5)    | 13.6 (23.3)    |                |                |

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); NHS II, Nurses’ Health Study II.7

a Unless otherwise indicated, data are mean (SD) values and standardized to the age distribution of the study population.
bValues are not age adjusted.

Table 2. Age- and Multivariate-Adjusted RRs for the Association of Coffee and Caffeine Consumption (Updated Cumulative Average Intake) With Risk of Psoriasis

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Cases, No.</th>
<th>Person-years</th>
<th>Age-Adjusted Model</th>
<th>Multivariate-Adjusted Model 1b</th>
<th>Multivariate-Adjusted Model 2b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee intake, cups</td>
<td>285</td>
<td>365 035</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
</tr>
<tr>
<td>&lt;1/mo</td>
<td>528</td>
<td>631 628</td>
<td>1.03 (0.89-1.18)</td>
<td>1.05 (0.90-1.23)</td>
<td>1.08 (0.92-1.27)</td>
</tr>
<tr>
<td>1/mo to 4/wk</td>
<td>292</td>
<td>322 477</td>
<td>0.96 (0.75-1.23)</td>
<td>1.01 (0.79-1.30)</td>
<td>1.03 (0.80-1.32)</td>
</tr>
<tr>
<td>5-7/wk</td>
<td>74</td>
<td>85 231</td>
<td>1.05 (0.84-1.31)</td>
<td>1.08 (0.85-1.37)</td>
<td>1.07 (0.84-1.35)</td>
</tr>
<tr>
<td>2-3/d</td>
<td>90</td>
<td>95 662</td>
<td>0.51 (0.13-2.05)</td>
<td>0.53 (0.13-2.14)</td>
<td>0.49 (0.12-1.96)</td>
</tr>
<tr>
<td>≥4/d</td>
<td>2</td>
<td>5761</td>
<td>.93</td>
<td>.91</td>
<td>.92</td>
</tr>
<tr>
<td>RR per 1 additional cup</td>
<td>NA</td>
<td>NA</td>
<td>1.00 (0.92-1.08)</td>
<td>1.01 (0.92-1.10)</td>
<td>1.00 (0.91-1.09)</td>
</tr>
<tr>
<td>Decaffeinated coffee intake, cups</td>
<td>160</td>
<td>228 180</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
</tr>
<tr>
<td>&lt;1/mo</td>
<td>186</td>
<td>228 222</td>
<td>1.09 (0.88-1.35)</td>
<td>1.04 (0.84-1.29)</td>
<td>1.02 (0.83-1.27)</td>
</tr>
<tr>
<td>1/mo to 4/wk</td>
<td>212</td>
<td>228 220</td>
<td>1.25 (1.02-1.54)</td>
<td>1.19 (0.96-1.46)</td>
<td>1.13 (0.92-1.39)</td>
</tr>
<tr>
<td>5-7/wk</td>
<td>217</td>
<td>227 942</td>
<td>1.25 (1.02-1.53)</td>
<td>1.19 (0.96-1.46)</td>
<td>1.09 (0.88-1.35)</td>
</tr>
<tr>
<td>2-3/d</td>
<td>211</td>
<td>228 196</td>
<td>1.35 (1.10-1.66)</td>
<td>1.27 (1.03-1.56)</td>
<td>1.08 (0.87-1.35)</td>
</tr>
<tr>
<td>Per 100 mg of additional caffeine</td>
<td>NA</td>
<td>NA</td>
<td>.003</td>
<td>.02</td>
<td>.50</td>
</tr>
</tbody>
</table>

Abbreviation: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); NA, not applicable; RR, relative risk.

b Adjusted for smoking (never, past, or current with 1-14, 15-24, or ≥25 cigarettes/d) in addition to the variables in multivariate-adjusted model 1.

served until 2005. In 2005, incidence of psoriasis was ascertained by self-report on questionnaires that inquired about the clinician-diagnosed psoriasis and the date of diagnosis. We confirmed the diagnosis by using the Psoriasis Screening Tool questionnaire, which has 99% sensitivity and 94% specificity.

Participants were asked about their daily intake of foods and beverages during the previous year for specified serving sizes in 1991, 1995, 1999, and 2003. Total caffeine intake was calculated according to the method of the US Department of Agriculture food composition data supplemented with other sources. The caffeine content was assumed as 137 mg per cup of coffee, 47 mg per cup of tea, 46 mg per can or 12-ounce bottle of caffeine-containing soft drink, and 7 mg per 1-ounce serving of chocolate candy. Data were available on coffee and caffeine consumption at baseline and during the follow-up as well as updated cumulative average consumption. To best ascertain long-term effect and reduce within-subject variation, we used the updated cumulative average intake from all available questionnaire cycles instead of using 1-time measurement. In addition, we examined coffee and caffeine intake using sizes in 1991, 1995, 1999, and 2003.
higher caffeine intake in the age-adjusted model. The associa-
tion was non-significant after adjustment for smoking. We
classified 986 incident cases of psoriasis. Risk of psoriasis was
moderately elevated with increasing coffee consump-
tion.

During 1 140 758 person-years of follow-up, we iden-
tified 986 incident cases of psoriasis. Risk of psoriasis was
moderately elevated with increasing coffee consump-
tion in the age-adjusted model. However, this trend be-
came non-significant after adjustment for smoking. We
also evaluated the association between decaffeinated cof-
fee and risk of psoriasis, which was not significant. A trend
towards increased risk of psoriasis was observed with higher
caffeine intake in the age-adjusted model. The associa-
tion became null after adjustment for smoking (Table 2).

Stratified analyses did not show significant findings
among nonsmokers. Secondary analysis by only using dif-
ferent measures of coffee and caffeine consumption did
not reveal material change of the effect estimation (eTable
1 and eTable 2; available at http://www.archdermatol.
com).

Comment. In this prospective cohort study, we did not
observe a material change of psoriasis incidence associ-
ated with coffee or caffeine intake, after adjusting for
known confounders. Smoking appears to be the major
confounder underlying the observed significant associa-
tion between coffee and caffeine intake and risk of psor-
iasis in age-adjusted models. Consistent with pub-
lished case-control studies, present data did not lend
support to the effect of coffee or caffeine intake on risk
of psoriasis.6 Our study had retrospective characteristics,
given that information on psoriasis was collected in
2005, and misclassification is possible. Further studies
are warranted to confirm our findings.

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and interpretation of data: Li, Han, and Qureshi. Draft-
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Qureshi. Obtained funding: Qureshi. Study supervision:
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Online-Only Material: The eTables are available at http://

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Comparison of Refined and Crude Indigo Naturalis Ointment in Treating Psoriasis:
Randomized, Observer-Blind, Controlled, Intrapatient Trial

Our group’s previous studies1,2 have shown that
topical application of indigo naturalis signifi-
cantly improves psoriatic symptoms. How-
ever, patient compliance is hindered because the prepa-
ration is unsightly and stains clothing.

To improve patient compliance, we have developed a
refined formulation in which the blue dye component is
removed, leaving only a purple-red color that is closer
to natural skin tones and less prone to stain clothing.
Herein, we describe a study of the efficacy and safety of
this new product.