In the primary analyses, PPV23 vaccination did not substantially alter the risk of CAP (hazard ratio [HR], 0.94 [95% CI, 0.80-1.12]; P = .50), AMI (HR, 1.01 [95% CI, 0.82-1.25]; P = .92), or ischemic stroke (HR, 1.03 [95% CI, 0.83-1.28]; P = .81). After propensity and multivariate adjustments, PPV23 vaccination remained unassociated with the outcomes studied (Table 2).

Discussion | Our data do not support a cardiovascular protective role of PPV23 and refute prior data reporting a protective effect in our interim analysis. Our findings show an increased short-term risk of acute thrombotic events among patients with CAP (2.8% and 0.7% of them developed AMI or ischemic stroke within 30 days after a CAP diagnosis, respectively), but vaccination did not reduce these risks.

The major strengths of this study were its population-based design and the validation of outcome events by checking clinical records. The main limitation is that vaccination status was not randomized. We used rigorous methods to adjust for the propensity for vaccination and further adjusted for underlying conditions in multivariate analyses; however, as with all observational studies, a residual confounding cannot be completely excluded. Those individuals who had received PPV23 more than 5 years ago were considered to be unvaccinated. It is possible that some of these individuals could have a certain degree of antibody immunity that was not considered; however, a possible bias is unlikely considering that vaccination did not seem to be effective in more recent vaccinated subjects.

In conclusion, we found that the PPV23 does not provide any clinically relevant benefit against overall CAP, AMI, or stroke among the general population older than 60 years. More effective antipneumococcal vaccination strategies (eg, using conjugated and/or protein-based pneumococcal vaccines) for adults are needed.

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Author Contributions: Dr Vila-Corcoles had full access to all the data in the study and had final responsibility for the decision to submit for publication. Study concept and design: Vila-Corcoles and Ochoa-Gondar. Acquisition of data: de Diego and Satue. Analysis and interpretation of data: Vila-Corcoles, Ochoa-Gondar, and Rodriguez-Blanco. Drafting of the manuscript: Vila-Corcoles, Ochoa-Gondar, and Rodriguez-Blanco. Critical revision of the manuscript for important intellectual content: Vila-Corcoles, Ochoa-Gondar, and Rodriguez-Blanco. Statistical analysis: Rodriguez-Blanco. Obtained funding: Vila-Corcoles and Ochoa-Gondar.

Administrative, technical, and material support: de Diego and Satue. Study supervision: Vila-Corcoles and Ochoa-Gondar.

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Correction: This article was corrected on October 10, 2013, to correct the study group name.


Indoor Tanning Among Young Non-Hispanic White Females

Indoor tanning is associated with an increased risk of skin cancer, especially among frequent users and those initiating use at a young age. Indoor tanning before age 25 years increases melanoma risk by 59% to 75%, while use before age 25 years increases nonmelanoma skin cancer risk by 40% to 102%. Moreover, melanoma risk increases by 1.8% with each additional tanning session per year. Melanoma incidence rates are steadily increasing, especially among young non-Hispanic white females, which may be due, in part, to indoor tanning. Currently, prevalence estimates of indoor tanning among this population are limited. Therefore, we examined the prevalence of indoor tanning and frequent indoor tanning (≥10 times) using nationally representative data among non-Hispanic white female high school students and adults ages 18 to 34 years.

Methods | We used data from the 2011 national Youth Risk Behavior Survey (YRBS) of high school students and the 2010 National Health Interview Survey (NHIS) for adults aged 18 to 34 years. We estimated the prevalence of indoor tanning and frequent indoor tanning, overall and by age and US census region. Indoor tanning was defined as using an indoor tanning device (eg, a sunlamp, sunbed, or tanning booth, not including a spray-on tan) at least 1 time during the 12 months before each survey. Frequent indoor tanning was defined as using an indoor tanning device at least 10 times during the same pe-
Among non-Hispanic white women ages 18 to 34 years, 24.9% engaged in indoor tanning and 15.1% engaged in frequent indoor tanning during the previous 12 months. The prevalence of indoor tanning and frequent indoor tanning decreased with age (Table 2).

**Discussion |** Indoor tanning is widespread among non-Hispanic white female high school students and adults ages 18 to 34 years, and the frequent use of indoor tanning is common. This widespread use is of great concern given the el-

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No.a</th>
<th>Prevalence</th>
<th>Frequent ITc</th>
<th>Frequent ITc Among Those Engaging in IT</th>
<th>No.a</th>
<th>% (95% CI)</th>
<th>% (95% CI)</th>
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<td>29.3 (25.1-33.9)</td>
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<td>6.2 (3.2-11.7)</td>
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<td>43.5 (25.3-63.6)</td>
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<td>15</td>
<td>618</td>
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<td>9.0 (6.1-13.0)</td>
<td>&lt;.001</td>
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<td>16</td>
<td>700</td>
<td>31.1 (24.5-38.4)</td>
<td>15.7 (10.8-22.2)</td>
<td>&lt;.001</td>
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<td>29.9 (23.0-37.8)</td>
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<tr>
<td>Northeast</td>
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<td>30-34</td>
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</table>

a Number of respondents (unweighted). Unknown and missing responses were excluded from the analysis. Percentages are weighted to account for survey design. b Indoor tanning defined as using an IT device (eg, a sunlamp, sunbed, or tanning booth) at least 1 time during the 12 months before the survey. Does not include getting a spray-on tan. c Frequent IT defined as using an IT device (eg, a sunlamp, sunbed, or tanning booth) at least 10 times during the 12 months before the survey. Does not include getting a spray-on tan.
evated risk of skin cancer among younger users and frequent users.1,2

Reducing exposure to UV radiation from indoor tanning is an important strategy for reducing the burden of skin cancer. The US Preventive Services Task Force recommends counseling fair-skinned individuals ages 10 to 24 years to minimize exposure to UV radiation to reduce skin cancer risk.3 Appearance-focused interventions, such as self-guided booklets, videos on photoaging, and peer counseling sessions, have been shown to reduce indoor tanning among young adults by up to 35%.3 Changing the social norms related to tanned skin and attractiveness may also be an effective strategy in reducing indoor tanning.

Other approaches to reducing UV exposure from indoor tanning include the US Food and Drug Administration’s proposed reclassification of indoor tanning devices from low-to moderate-risk devices requiring premarket notification and labels designed to warn young people not to use them,4 the 10% excise tax on indoor tanning services established through the Patient Protection and Affordable Care Act,5 limiting deceptive advertising claims about indoor tanning, and limiting indoor tanning among minors.

Limitations of this study include its reliance on self-reported data, which are subject to various biases. In addition, the NHIS is generalizable only to the noninstitutionalized civilian adult population, and the YRBS is generalizable only to the noninstitutionalized civilian adolescent population; the YRBS is generalizable only to high school students. Despite these limitations, this study provides nationally representative estimates, allowing for the continued monitoring of indoor tanning and evaluation of efforts aimed at curbing the widespread use of indoor tanning among young women and reducing the burden of skin cancer.

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Author Contributions: Dr Guy and Ms Berkowitz had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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Acquisition of data: Guy, Berkowitz.

Analysis and interpretation of data: Guy, Berkowitz, Holman.

Drafting of the manuscript: Guy.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Guy, Berkowitz.

Administrative, technical, or material support: Guy, Watson, Holman, Richardson.

Study supervision: Guy, Richardson.

Conflict of Interest Disclosures: None reported.

Disclaimer: The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.


7. Patient Protection and Affordable Care Act, pl 111-148, sec. 10907(b).

The DASH Diet and Diet Costs Among Ethnic and Racial Groups in the United States

The Dietary Approaches to Stop Hypertension (DASH) diet is perhaps the best example of how a nutrient-dense dietary pattern can prevent chronic disease. In randomized trials, DASH dietary patterns lowered blood pressure in hypertensive individuals.1 Subsequent trials and observational studies have consistently found that DASH-type diets reduced cardiovascular and metabolic risk.2

Despite its proven health benefits, the DASH food pattern has not been widely adopted.3 Its limited uptake might be explained by economic constraints, since food prices influence food choices and constitute a major barrier to dietary change.4,5 Nutrient-dense foods, central to DASH, tend to be more costly compared with calorie-dense alternatives.6

In the present study, we explored how diets consumed by US adults aligned with DASH guidance. We hypothesized that the DASH accordance of diets would be greater among persons of higher socioeconomic status. We also hypothesized that DASH-accordant diets would be more costly for some ethnic groups but not necessarily for others. Our previous analyses of US adults indicated that Hispanic adults achieved a diet quality similar to non-Hispanic white adults but at lower cost.7

Methods | Data for 4744 adults from the 2001-2002 National Health and Nutrition Examination Survey (NHANES) were used for analyses because they allow linkage of dietary data to a contemporaneous, national food price database. The data sources and linkage have been described in detail previously.7 Methods are provided in greater detail in the eAppendix in the