

## Supplementary Online Content

Wang DM, Kraft S, Rohani P, et al. Association of nodal metastasis and mortality with vermilion vs cutaneous lip location in cutaneous squamous cell carcinoma of the lip. *JAMA Dermatol*. Published online May 2, 2018. doi:10.1001/jamainternmed.2018.0792

**eTable 1.** ICD-9 Codes for Cutaneous Squamous Cell Carcinoma of the Lip

**eTable 2.** Univariable and Multivariable Analyses for Selected Outcomes of Interest

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. ICD-9 Codes for Cutaneous Squamous Cell Carcinoma of the Lip**

<b>ICD-9 code</b>	<b>Diagnosis</b>
140.0	Malignant neoplasm of upper lip, vermilion border
140.1	Malignant neoplasm of lower lip, vermilion border
140.3	Malignant neoplasm of upper lip, inner aspect
140.4	Malignant neoplasm of lower lip, inner aspect
140.5	Malignant neoplasm of lip, unspecified, inner aspect
140.6	Malignant neoplasm of commissure of lip
140.8	Malignant neoplasm of other sites of lip
140.9	Malignant neoplasm of lip, unspecified, vermilion border
173.0	Other malignant neoplasm of skin of lip
173.00	Unspecified malignant neoplasm of skin of lip
173.02	Squamous cell carcinoma of skin of lip
173.09	Other specified malignant neoplasm of skin of lip

*ICD-9*, International Classification of Diseases, 9<sup>th</sup> Revision.

**eTable 2. Univariable and Multivariable Analyses for Selected Outcomes of Interest**

Characteristic	Nodal metastasis				Disease-specific death			
	Univariable analysis		Multivariable analysis		Univariable analysis		Multivariable analysis	
	SHR (95% CI)	P value	SHR (95% CI)	P value	SHR (95% CI)	P value	SHR (95% CI)	P value
<b>Sex</b>								
Female	1 [Reference]				1 [Reference]			
Male	1.5 (0.5-4.3)	.43			1.7 (0.5-5.8)	.42		
<b>Age, y</b>								
<70	1 [Reference]		1 [Reference]		1 [Reference]			
≥70	2.0 (0.7-5.6)	.19	2.3 (0.8-6.5)	.13	1.4 (0.4-4.6)	.63		
<b>Immunosuppression</b>								
No	1 [Reference]				1 [Reference]			
Yes	0.4 (0.1-1.9)	.26			0.7 (0.2-3.4)	.69		
<b>Previous skin cancer</b>								
No	1 [Reference]				1 [Reference]			
Yes	0.6 (0.2-1.8)	.40			0.5 (0.1-1.8)	.27		
<b>Lip location</b>								
Cutaneous lip	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Vermilion lip	5.6 (1.3-25.1)	.02	5.0 (1.1-23.8)	.04	1.4 (0.4-5.3)	.59	0.8 (0.2-3.5)	.78
<b>Tumor diameter, cm</b>								
<2	1 [Reference]				1 [Reference]			
≥2	1.3 (0.3-5.8)	.74			2.0 (0.4-9.4)	.40		
<b>Tumor differentiation</b>								
Well	1 [Reference]				1 [Reference]			
Moderate	2.9 (1.0-8.9)	.06			1.5 (0.3-7.6)	.60		
Poor	3.6 (0.8-17.2)	.11			5.4 (1.1-26.6)	.04		
<b>Level of invasion</b>								
Dermis or subcutaneous fat	1 [Reference]		1 [Reference]		1 [Reference]			
Beyond subcutaneous fat (For vermilion cases, beyond dermis e.g. fascia or muscle invasion)	4.5 (1.4-14.1)	.01	4.4 (1.3-14.9)	.02	5.7 (1.5-22.0)	.01		
<b>Perineural invasion</b>								
No	1 [Reference]				1 [Reference]		1 [Reference]	
Yes	1.0 (0.1-7.4)	.99			6.6 (1.7-25.9)	.007	4.6 (1.1-18.9)	.04
<b>BWH T stage</b>								
T1/T2a (Low)	1 [Reference]				1 [Reference]			
T2b/T3 (High)	1.4 (0.2-10.8)	.72			2.6 (0.3-21.4)	.37		

**eTable 2. Univariable and Multivariable Analyses for Selected Outcomes of Interest (continued)**

Characteristic (continued)	Nodal metastasis				Disease-specific death			
	Univariable analysis		Multivariable analysis		Univariable analysis		Multivariable analysis	
	SHR (95% CI)	P value	SHR (95% CI)	P value	SHR (95% CI)	P value	SHR (95% CI)	P value
<b>AJCC 8 T stage</b>								
T1/T2 (Low)	1 [Reference]				1 [Reference]			
T3/T4a,b (High)	4.0 (1.3-12.4)	.02			5.1 (1.3-19.3)	.02		
<b>Treatment modality</b>								
Standard excision	1 [Reference]				1 [Reference]		1 [Reference]	
Mohs surgery	0.4 (0.1-1.1)	.07			0.1 (0.0-0.6)	.009	0.1 (0.0-0.7)	.02
Other treatment	0.9 (0.2-3.5)	.90			0.7 (0.1-3.4)	.66	0.5 (0.1-2.8)	.43

SHR, subhazard ratio; CI, confidence interval; BWH, Brigham and Women's Hospital; T, tumor stage from TNM staging system; AJCC 8, American Joint Committee on Cancer, Cancer Staging Manual, 8<sup>th</sup> Edition.