

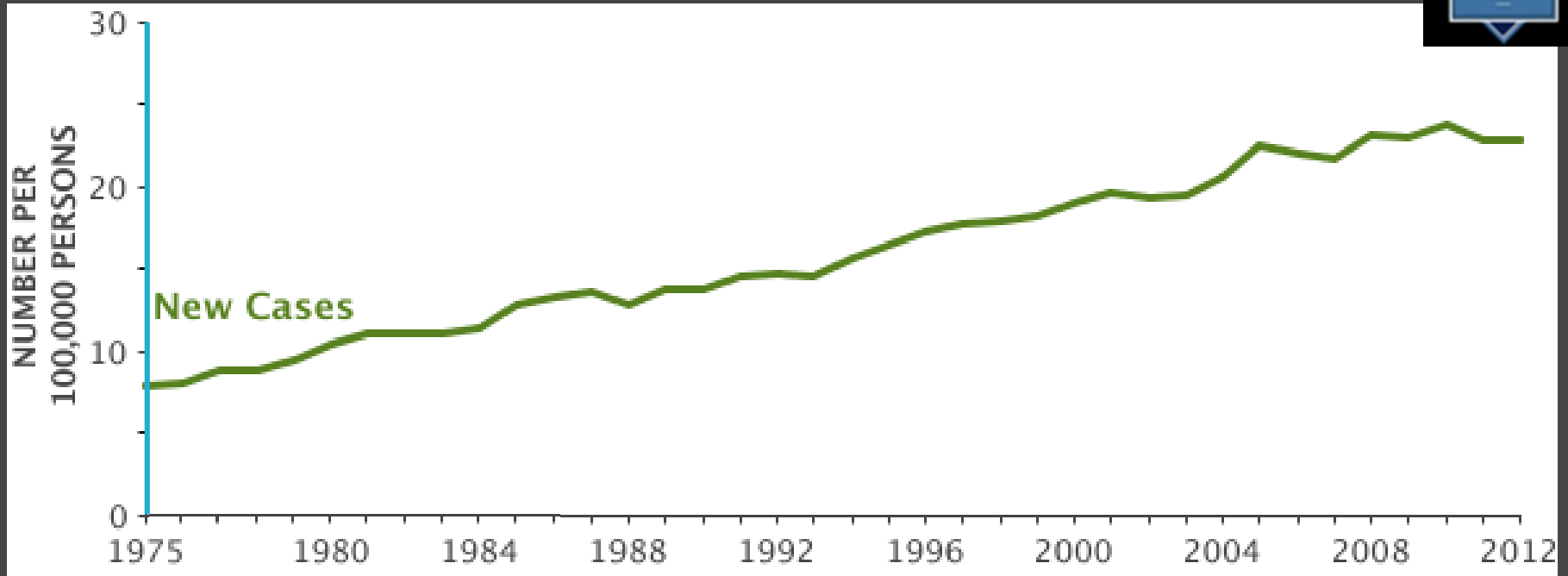
Association of age at indoor tanning initiation and current use among students at 3 U.S. colleges



Casey L. Daniel, PhD, MPH
Jennifer Hay, PhD
Brooke Foucault Welles, PhD
Alan C. Geller, MPH, RN



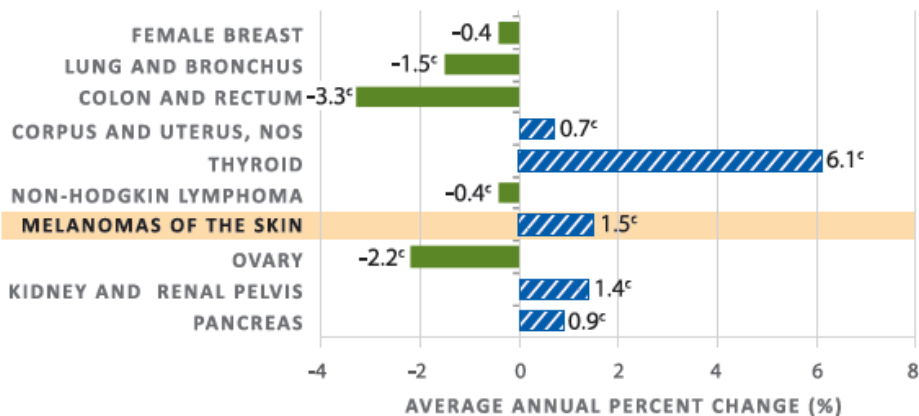
New Cases of Melanoma of the Skin in U.S., 1975-2012¹



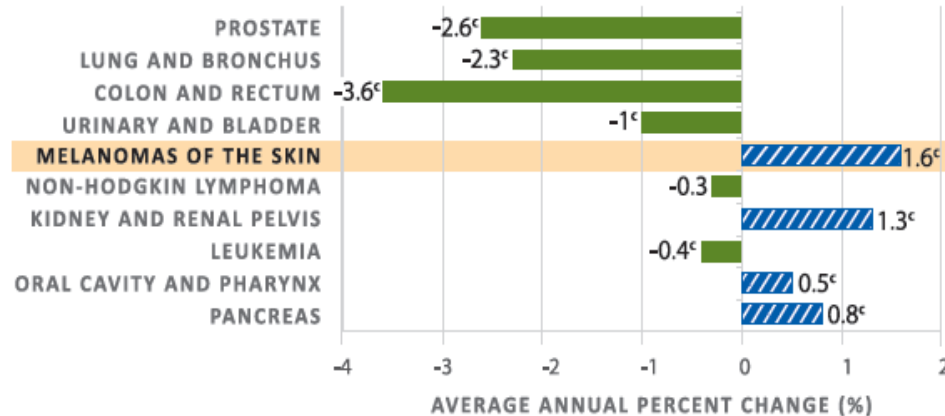
Changes in U.S. Cancer Incidence

Average Annual Percent Change^a in the 10 Most Common Cancers, 2002–2011

Females



Males

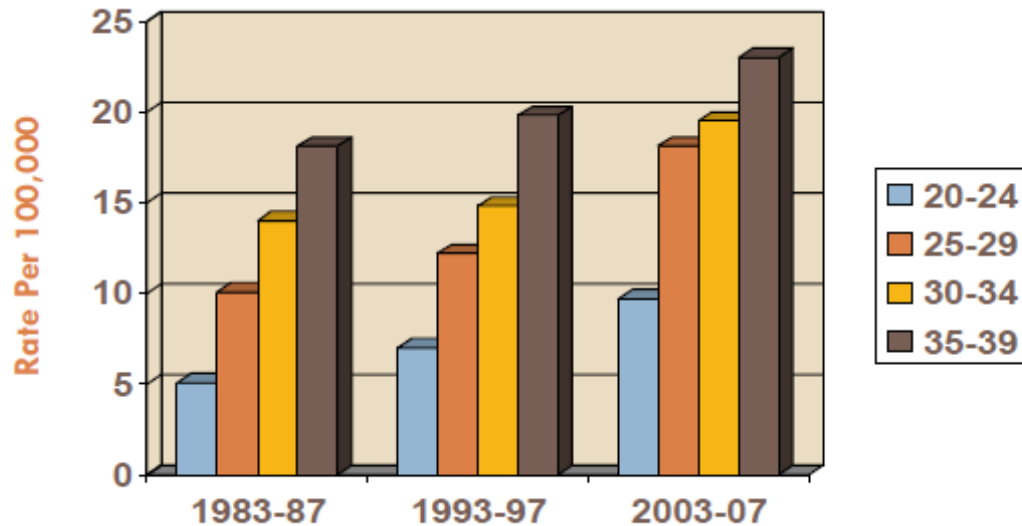


Incidence increasing



Incidence decreasing

Incidence Rates of Melanoma in U.S. among Young Women, 1983-2007



- Melanoma is second most common cancer in women 20-29²
- Tanning bed use >1/month increases melanoma risk by 55%³

Indoor Tanning Regulations⁴

THE SURGEON GENERAL'S CALL TO ACTION TO PREVENT SKIN CANCER



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES



- the product is contraindicated for use in those under age 18;
- the product must not be used if the consumer has open wounds or skin lesions;
- the product shouldn't be used on consumers who have skin cancer or a family history of the disease; and
- those who are repeatedly exposed to UV radiation should be checked regularly for skin cancer.

New FDA Proposed Restrictions⁵: December 2015

1. Bans use of sunlamp products for individuals under 18 years
2. Before first tanning session (and every six months after) adult users over 18 would have to sign risk acknowledgment
 - Stating have been informed of risks to health that may result from sunlamp products



Current Study

- Assess undergraduates' tanning behaviors, knowledge, attitudes



- 3 U.S. colleges varying in:
 - Geographic region
 - Urban/rural
 - Public/private
 - Socioeconomic status



Study Purpose

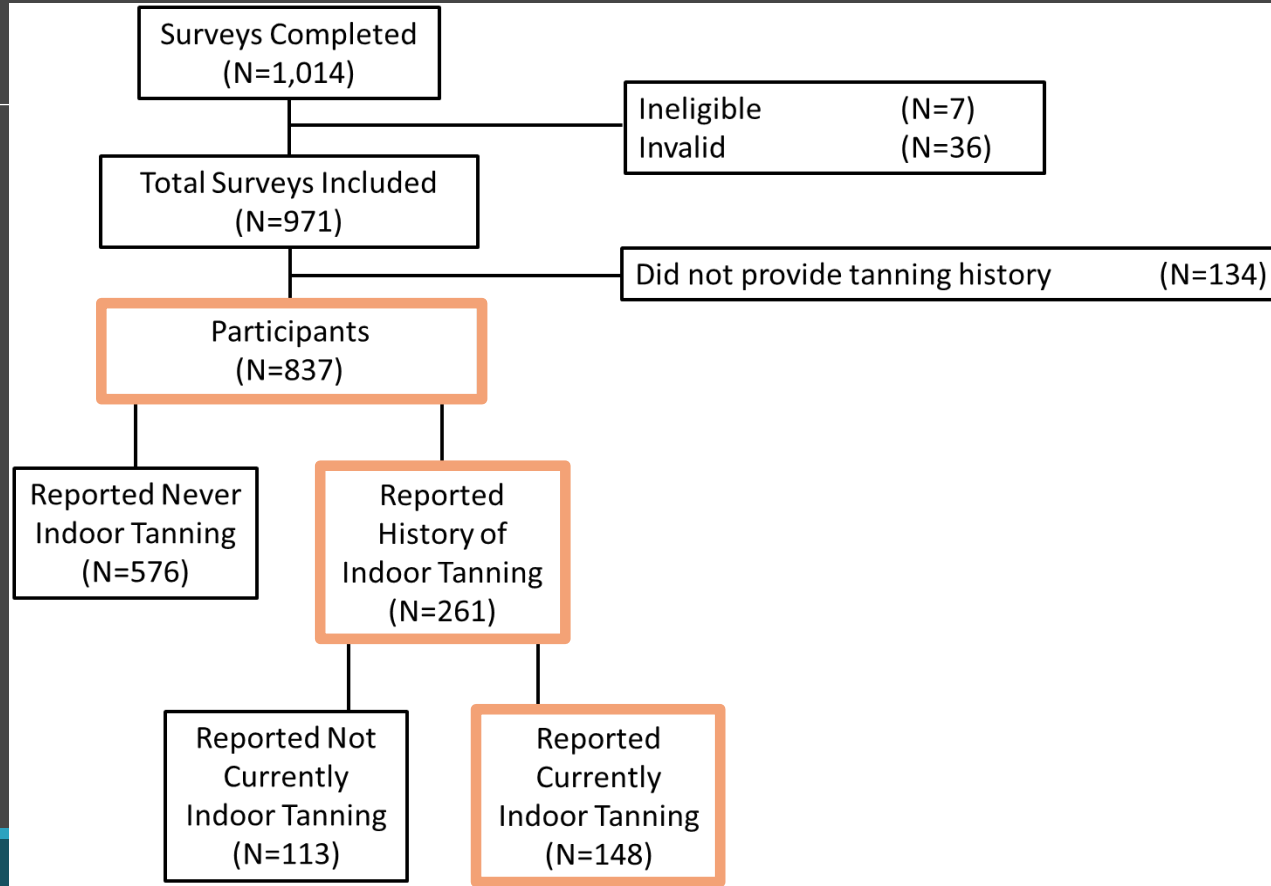
- Compare factors associated with never, former, or current indoor tanning
- Target Population:
 - Male and female undergraduate students at one of the participating colleges
 - Urban northeastern
 - Urban southeastern
 - Rural southeastern

Study Methods

- Convenience sample
- 50-question self-administered, cross-sectional survey
 - Demographics
 - Tanning attitudes
 - Tanning behaviors
 - *Age at tanning initiation*
 - *Current tanning practices*



Participant Flow Diagram

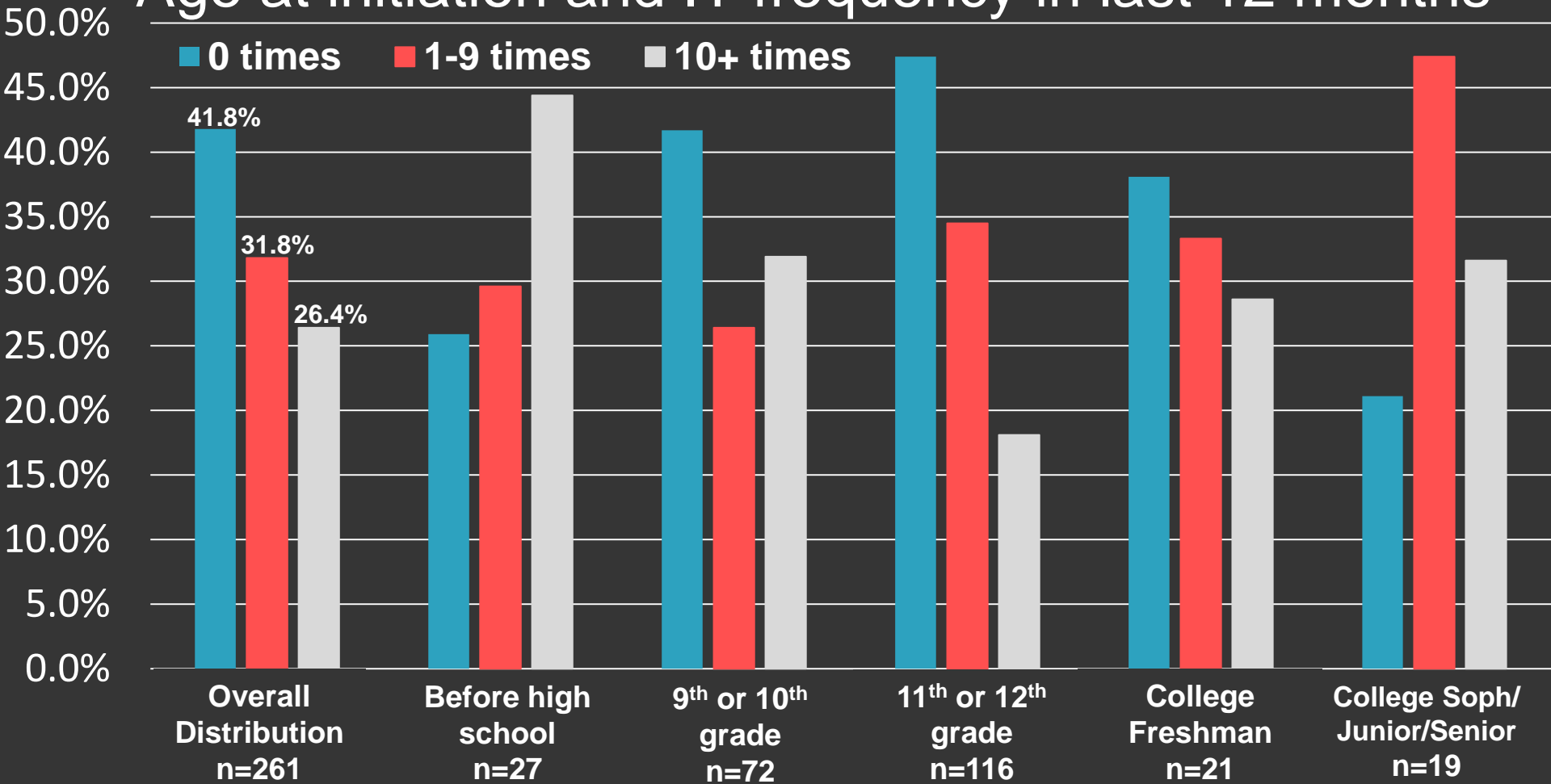


Variable		<u>Never</u> Indoor Tanned N=576 N (%)	<u>Ever</u> Indoor Tanned N=261 N (%)	Adjusted Odds Ratio	95% Confidence Interval
School where enrolled					
	College A (ref) (urban northeastern)	385 (78.9)	103 (21.1)	1.00	
	College B (urban southeastern)	131 (61.2)	83 (38.8)	3.21	2.09 – 4.94
	College C (rural southeastern)	59 (44.7)	73 (55.3)	7.31	4.25 – 12.59
Sex					
	Male (ref)	138 (83.6)	27 (16.4)	1.00	
	Female	433 (64.9)	234 (35.0)	2.01	1.20 – 3.38
Race					
	Non-white (ref)	187 (83.9)	36 (16.1)	1.00	
	White	386 (63.5)	222 (36.5)	2.72	1.64 – 4.51
Frequency of intentional tanning outdoors					
	Rarely/Never (ref)	315 (84.5)	58 (15.6)	1.00	
	Sometimes	167 (63.5)	96 (36.5)	3.54	2.24 – 5.60
	Very often/Often	89 (45.9)	105 (54.1)	7.72	4.58 – 12.99

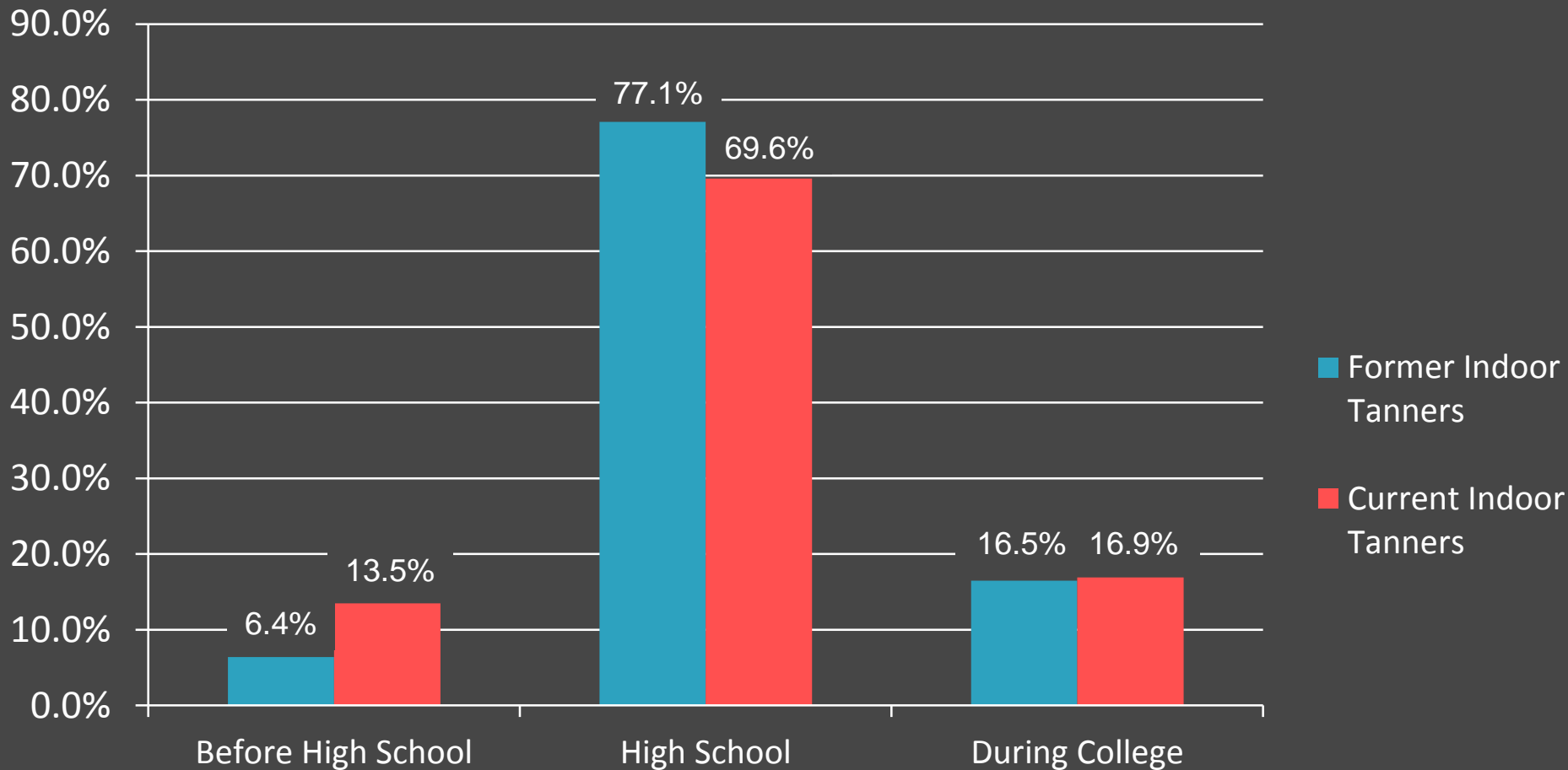
Variable		<u>Never</u> Indoor Tanned N=576 N (%)	<u>Ever</u> Indoor Tanned N=261 N (%)	Adjusted Odds Ratio	95% Confidence Interval
It looks better to have a tan than to be pale					
	Disagree/Strongly disagree (ref)	193 (82.8)	40 (17.1)	1.00	
	Agree	302 (68.0)	142 (31.9)	1.67	1.05 – 2.65
	Strongly agree	70 (47.3)	78 (52.7)	2.99	1.65 – 5.41
Using a tanning bed is fine as long as you don't go too frequently					
	Strongly disagree (ref)	192 (88.1)	26 (11.9)	1.00	
	Disagree	233 (74.7)	79 (25.3)	3.27	1.89 – 5.67
	Agree/Strongly agree	144 (48.0)	156 (52.0)	13.76	7.51 – 25.21
If tanning beds were really harmful then not as many people would use them					
	Strongly disagree (ref)	220 (79.1)	58 (20.9)	1.00	
	Disagree	256 (63.7)	146 (36.3)	1.65	1.02 – 2.68
	Agree/Strongly agree	93 (62.0)	57 (38.0)	1.18	0.60 – 2.31

Variable		<u>Do Not</u> Currently Indoor Tan N=113 N (%)	<u>Currently</u> Indoor Tan N=148 N (%)	Adjusted Odds Ratio	95% Confidence Interval
It looks better to have a tan than to be pale					
	Disagree/Strongly disagree (ref)	25 (22.1)	15 (10.2)	1.00	
	Agree	65 (57.5)	77 (52.4)	2.18	0.86 – 5.51
	Strongly agree	23 (20.4)	55 (37.4)	2.98	1.05 – 8.49
Using a tanning bed is fine as long as you don't go too frequently					
	Strongly disagree (ref)	20 (17.7)	6 (4.1)	1.00	
	Disagree	51 (45.1)	28 (18.9)	1.87	0.54 – 6.47
	Agree/Strongly agree	42 (37.2)	114 (77.0)	7.79	2.23 – 27.26

Age at initiation and IT frequency in last 12 months



Age at initiation and current IT status n=257



Conclusions

- Earliest initiation associated with *persistence*
- Earliest initiation associated with *IT frequency*
- High prevalence of ITs reporting starting before high school now potentially in 7th or 8th year of IT

Future Interventions

- Use behavioral theory as foundation
- Prevent *initiation* among youth
- Promote *cessation* for long-term users

Future Research

- How will new IT policies/bans impact indoor and outdoor tanning behaviors?
- Current data shows high rates of outdoor UV exposure among those who *ever* IT

Citations

- ¹SEER Cancer Registry: <http://seer.cancer.gov/statfacts/html/melan.html>. Accessed 20 March 2016.
- ²SEER Cancer Statistics Review. 1975–2010. http://seer.cancer.gov/csr/1975_2010/. Accessed 10 November 2014.
- ³Indoor Tanning: The Risks of Ultraviolet Rays. US Food and Drug Administration. <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm186687.htm>. Accessed 13 May 2015.
- ⁴U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent Skin Cancer*. Washington, DC: U.S. Dept of Health and Human Services, Office of the Surgeon General; 2014.
- ⁵FDA proposes tanning bed age restrictions and other important safety measures. US Food and Drug Administration. <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm477434.htm>. Accessed 21 March 2015.