

# Sexual debut and association with oral human papillomavirus (HPV) infection, persistence and oropharyngeal cancer - An analysis of two Australian cohorts



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## Hypothesis

“The immune response to HPV is much stronger if the first HPV infection is cervical or anal”

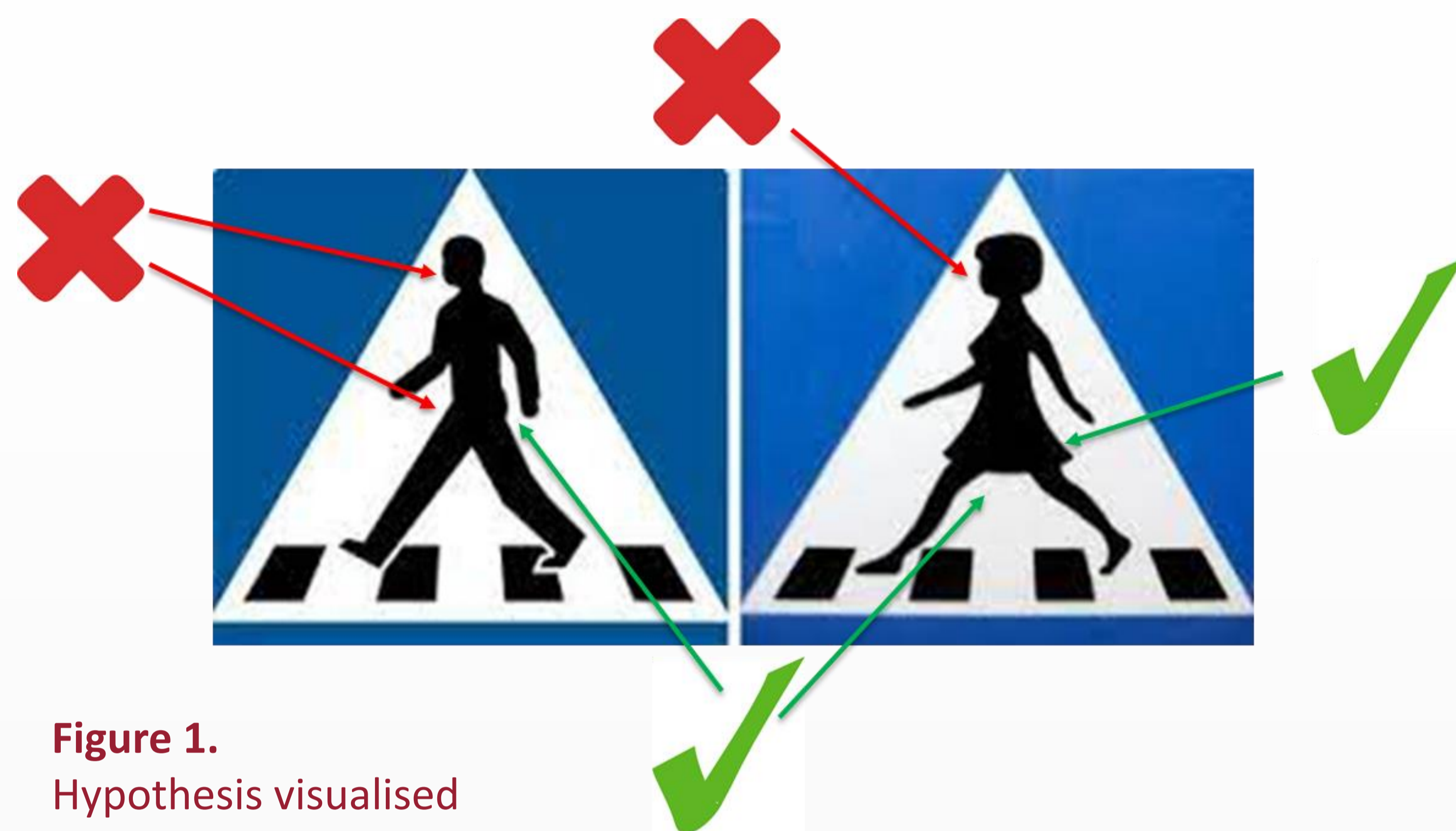


Figure 1. Hypothesis visualised

## Background

Oropharyngeal cancer is increasingly caused by HPV, and this increase is believed to be due to changing sexual behaviour.

## Brisbane case-case analysis

Dataset from Schnelle *et al*, Int J Cancer. 2017;140(5):1027-1034.

We found that

- engaging in oral sex (OR 4.46 [95% CI, 1.88-10.62])
  - being younger than 20 years at oral sex debut (OR 9.46 [95% CI, 3.53-25.31])
- were very strong risk factors for oropharyngeal cancer.

## Drake *et al*'s findings

Paper by Drake *et al* in Cancer (2021;127[7]; 1029-38)

- Case-case cohort from Baltimore, San Francisco and New York
- 163 oropharyngeal cancer patients (OPC) and 345 controls (non-OPC patients)
- 99% of cases had given oral sex compared to 90% of controls
- OPC patients were more likely than controls to have performed oral sex at the time of sexual debut (33% in patients vs 21% in controls,  $p = 0.004$ ) OR 1.8 [95% CI, 1.2-2.8]

## Conclusion

Oral sex debut before sexual intercourse debut was quite uncommon in our two Australian cohorts. However, the timing of sexual debuts may further add to the risks of persistent oral HPV infections and OPC.

Publication: Antonsson *et al*, Int J Cancer. 2022;151(5):764-769

**Table 1. Timing of oral sex/sexual intercourse debut.** A case-case cohort from a large Australian head and neck cancer clinic (recruited 2013-16)

		No SCC (other diagnosis) n (%)	Oropharyngeal SCC n (%)	OR* (95% CI)
Timing of oral sex/sexual intercourse debut	never had oral sex	55 (34.6)	8 (8.2)	1.00 (ref)
	oral sex before intercourse or at the same age/time	26 (16.3)	29 (29.9)	<b>6.45 (2.32-17.98)</b>
	intercourse before oral sex (1 year or more)	78 (49.1)	60 (61.9)	<b>3.96 (1.65-9.53)</b>

## Sample of the general population analysis

Dataset from Antonsson *et al*, Int J Cancer. 2021;148(8):1964-1972

Participants in the Brisbane cohort who

- had their sexual intercourse debut before the age of 18 were more likely to be oral HPV positive (OR 2.69 [95% CI, 1.50-4.83])

**Table 2. Timing of oral sex/sexual intercourse debut.** The Oral Health Study with oral HPV status at baseline (recruited 2014-2016; baseline samples)

		HPV-negative n (%)	HPV-positive n (%)	OR* (95% CI)
Timing of oral sex/sexual intercourse debut	never had oral sex	73 (14.3)	4 (6.1)	1.00 (ref)
	oral sex before intercourse or at the same age/time	278 (54.6)	36 (55.4)	2.15 (0.72-6.73)
	intercourse before oral sex (1 year or more)	158 (31.1)	25 (38.5)	2.73 (0.88-8.40)