“At longer intervals HPV-based screening provides 60—70% greater protection against invasive cervical carcinomas compared with cytology” – Ronco et al, Lancet 2014

As shown in the figure below, an analysis of HPV testing (blue line) compared to cytology (red line) from four European randomised controlled trials in 176,000 women demonstrated that HPV testing prevents more cervical cancer than cytology based screening.

As can be seen at point A, two years after their negative Pap test, women have a cumulative incidence of CIN3+ of 4 per 1000 women. Notably the rate in women who were HPV negative at 2 years (red line) is only 1 per 1000 women (Point C). By 5 years (point B) the initially HPV negative women have a cumulative CIN3+ rate of 2.5 per 1000 women which is still substantially lower than the rate at two years in the Pap test group. These data thus clearly demonstrate that women are safer 5 years after a negative HPV test than they are two years after a negative Pap test. Shorter HPV testing intervals are not necessary or recommended because recently acquired HPV infections are mostly transient, so more frequent testing would result in an unnecessary increase in referral to colposcopy.

Co-testing strategies demonstrate very minimal additional sensitivity compared with HPV testing alone as seen Figure 2 (green line compared to red line). This very small gain in protection against the development of pre-cancerous lesions after a single screening test, does not result in significantly improved cervical cancer prevention but co-testing would result in many more women being referral for colposcopy, and additional treatment, in the absence of pre-cancerous changes.
HPV tests are more sensitive for the detection of pre-cancerous change (CIN2+/AIS) than Pap tests. HPV infection is necessary but not sufficient for the development of almost all cervical cancer and occurs before the development of pre-cancerous changes [see Figure 3]. HPV tests used for screening are calibrated to detect the presence of oncogenic HPV at levels associated with high grade lesions. Randomised controlled trial results show that HPV based screening detects persistent high grade CIN before cytology, thus increasing the probability of treatment before invasion.\textsuperscript{1} This is the explanation for HPV testing showing greater prevention of cervical cancer and a lower risk of high grade CIN/cancer after a negative test over time.

![FIGURE 3: HPV to cervical cancer](image)

**REFERENCES**


The 2016 Guidelines recommend that ‘Women at any age who have signs or symptoms suggestive of cervical cancer should have a co-test, and referral for appropriate investigation to exclude genital tract malignancy should be considered.’

**CONCLUSION:**

The renewed NCSP will be more effective than the current highly successful program and reductions in cervical cancer incidence and mortality of 20 to 30% are predicted with Australian specific modelling.