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HPV DNA Testing and its place in Screening for Cervical Cancer

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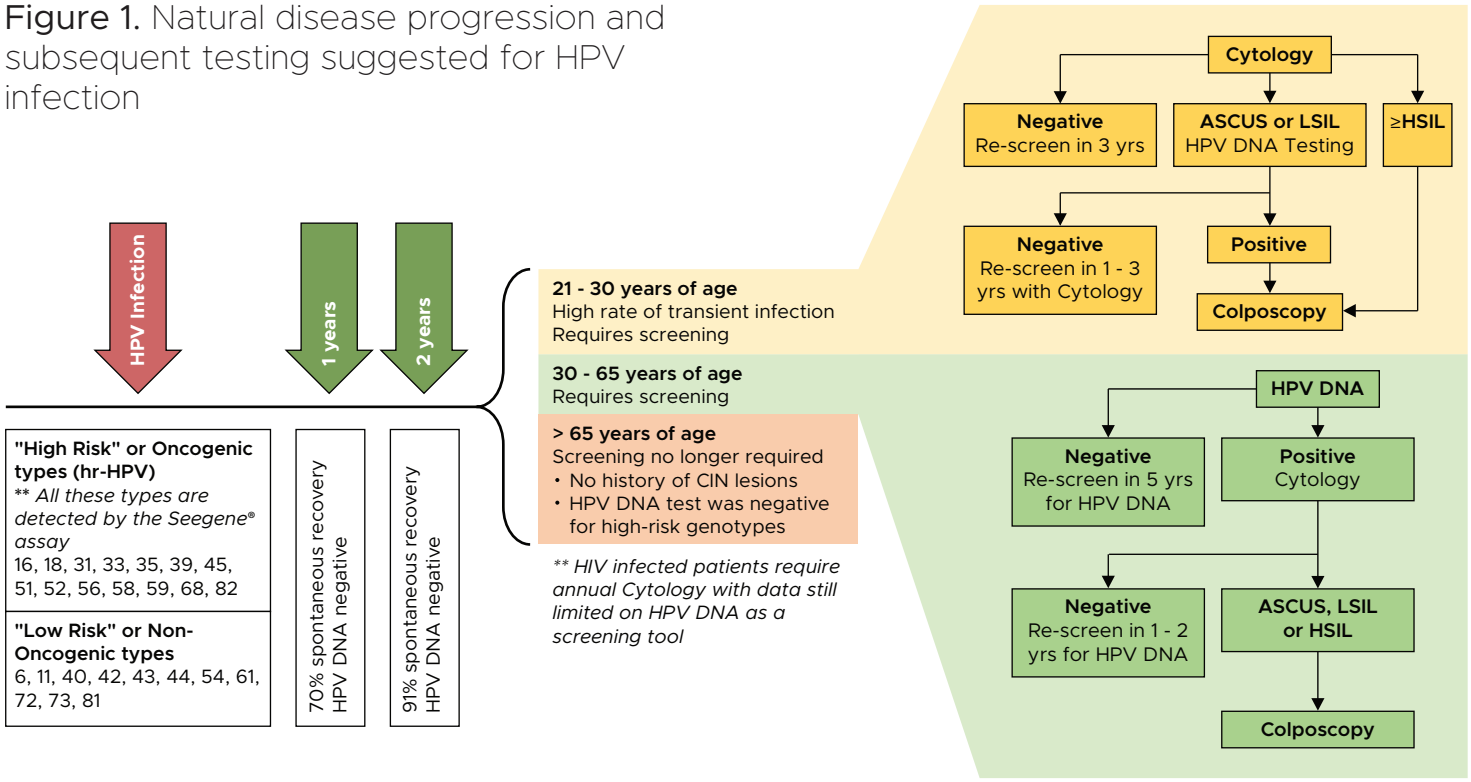
Human Papillomavirus (HPV) is a sexually transmitted disease, and persistent infection, may lead to various genitourinary cancers.

The management of the presence of HPV is complicated by the fact that:

1. There is variable risk to progression based on the specific genotype of infection.
2. Progression of disease is uncertain ranging from asymptomatic transience to persistence to malignancy.

Figure 1. Natural disease progression and subsequent testing suggested for HPV infection



Specific context and screening algorithms for HPV. The algorithms are based on current South African Guidelines for HIV care as well as a combination of the seven testing algorithms advocated by the WHO.

Screening Approach

The mainstay of screening for cervical cancer has always been based on Cytological examination following a 'Pap-smear'.

The presence of pathological changes on this platform confirms the presence of persistence, however, occurs late in the disease progression.

The novel HPV DNA screening assays promise earlier detection of the virus, as well as determination of the genotype in question.

It is therefore a very promising screening platform; however, it should be applied in the correct context to ensure appropriate patient management and reduce patient anxiety during the screening process as some patients may test positive for "high risk" genotypes with no apparent cytological changes, which may in fact be transient in nature.

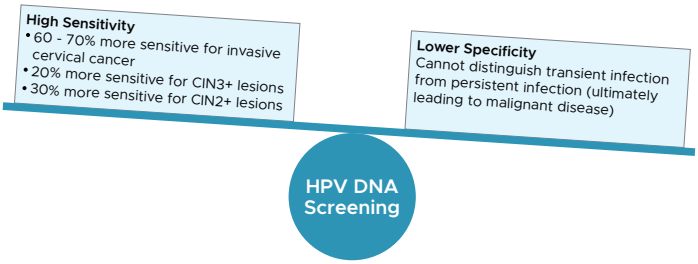
For this reason, testing should be targeted for specific population groups (figure 1).

HPV DNA Analysis and Considerations

It should be emphasized that the presence of Cytological abnormalities is diagnostic for progression of an HPV infection. The presence of HPV DNA in the absence of cytological changes, does not equate to premalignant disease, as the infection may simply be transient.

The presence HPV DNA should be seen within the context of the tests strong-points and limitations as evidenced by its sensitivity and specificity, as well as the implications thereof (figure 2).

Figure 2. Advantages and disadvantages of utilizing molecular screening for HPV



HPV DNA testing has a high sensitivity and low specificity which has specific clinical implications in various population groups.

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