



European  
AIDS Treatment  
Group



Cervical/anal screening  
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# Disclosures

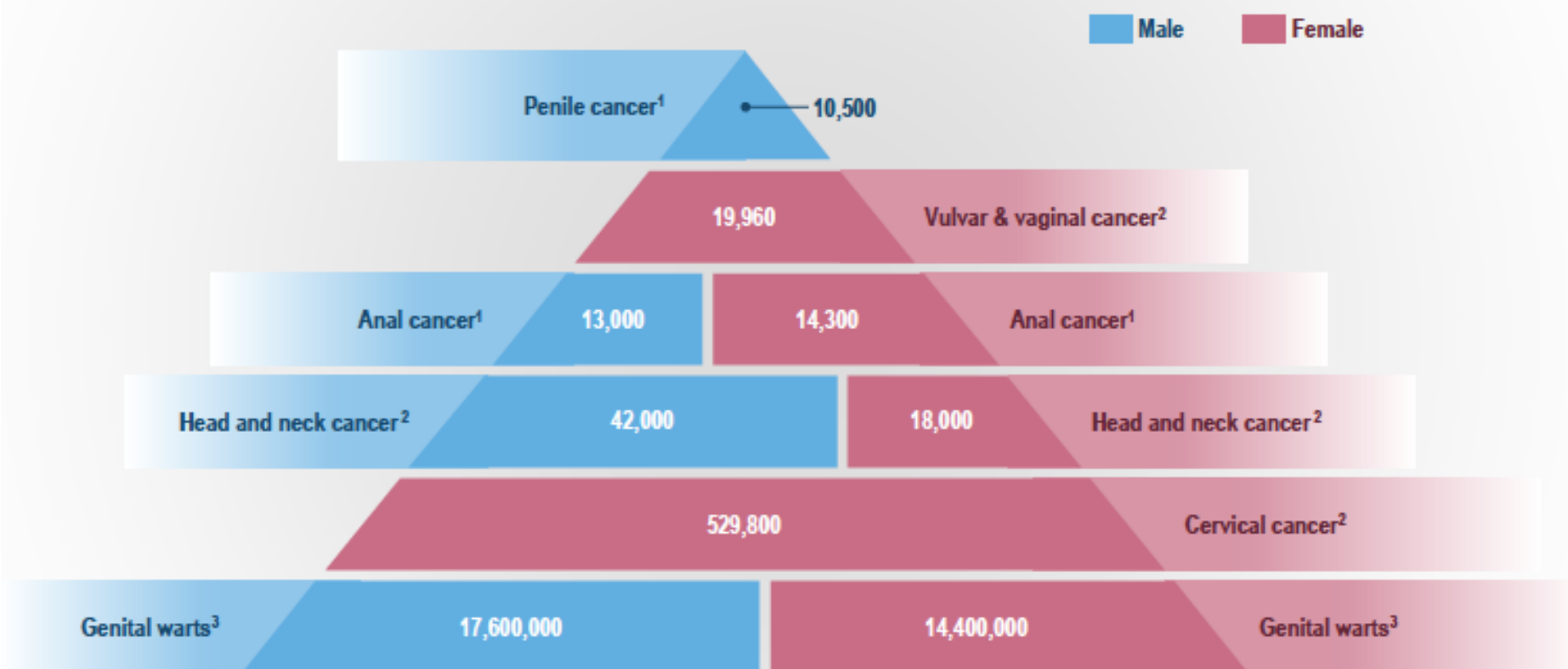
- Merck and Co- research and travel support
- Antiva Biosciences- consultant and research support
- Agenovir- consultant, stock options
- Ubiome- stock options
- Janssen- invited speaker
- Novan- consultant

# Outline

- Scope of the problem/trends in incidence
- Primary prevention- HPV vaccination to prevent initial HPV infection
  - 9 through 26 years
  - It is safe and it works!
- Secondary prevention= screening for those too old for vaccination

# There Is a High HPV Disease Burden Among Males and Females Globally

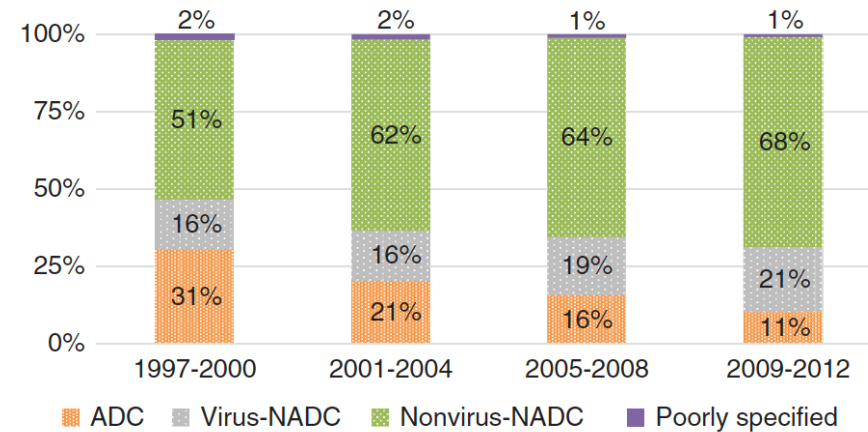
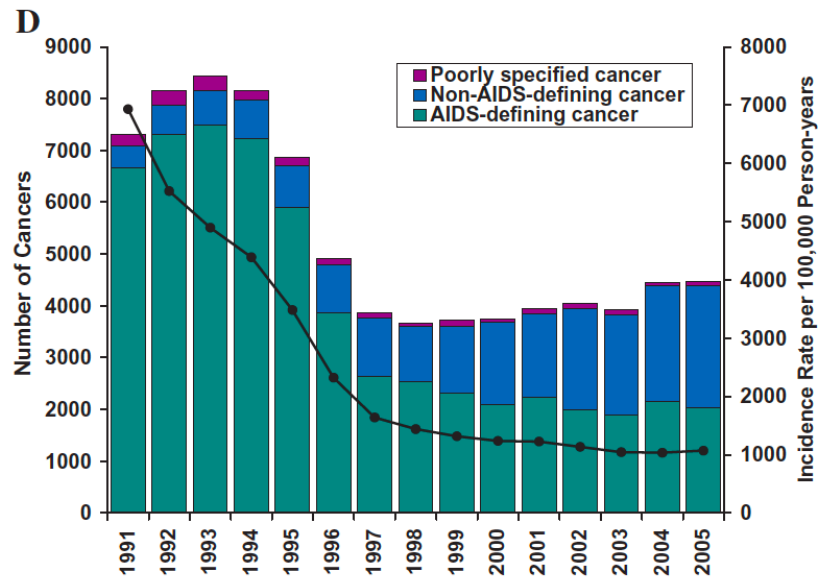
Estimated annual new HPV-related disease cases in males and females globally



Published HPV prevalence rates were applied as follows: Parkin D et al. *Vaccine*. 2006 (penile, vulvar, anal, cervical cancers); WHO/ICO 2010 (head and neck cancer); De Vuyst H et al. *Int J Cancer*. 2009 (vaginal cancer); Greer CE et al. *J Clin Microbiol*. 1995 (genital warts).

1. Parkin DM et al. *Vaccine*. 2006;24(Suppl 3):S3/11–S3/25. 2. WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in World. Summary Report 2010. <http://www.who.int/hpvcentre/en/>. Accessed June 21, 2012. 3. World Health Organization (WHO). Executive summary: the state of world health. 1995. [http://www.who.int/whr/1995/media\\_centre/executive\\_summary1/en/index3.html#](http://www.who.int/whr/1995/media_centre/executive_summary1/en/index3.html#). Accessed June 7, 2012.

# Distribution of cancers over time



Shiels MS et al. J Natl Cancer Inst 2011;103:753–762

Park LS et al, AIDS 2016, 30:1795–1806

# HPV-related cancer in Ukraine

## Population

Women at risk for cervical cancer (Female population aged  $\geq 15$  years) 20.5 million

## Burden of cervical cancer and other HPV-related cancers

Annual number of cervical cancer cases 5,230

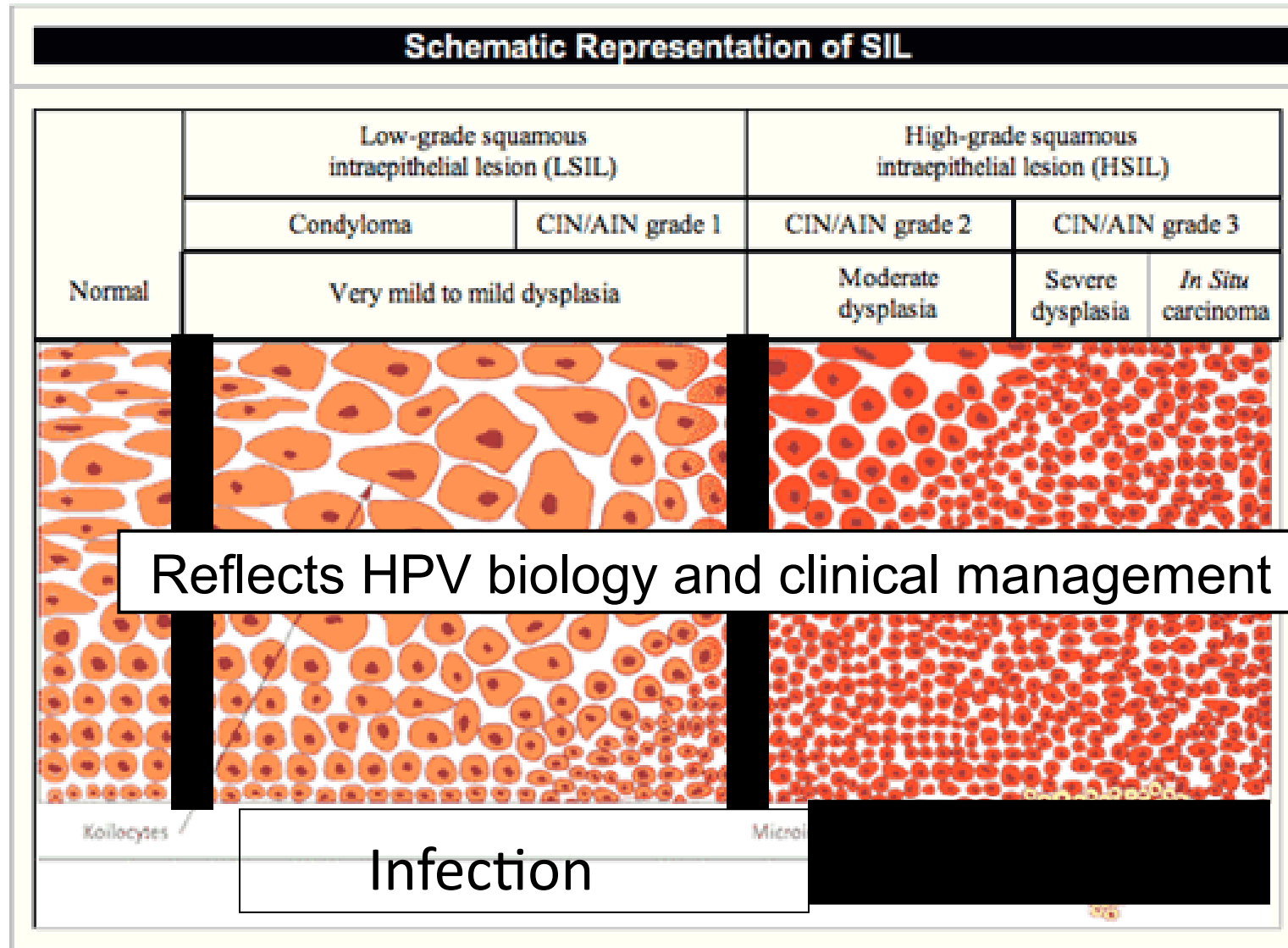
Annual number of cervical cancer deaths 2,271

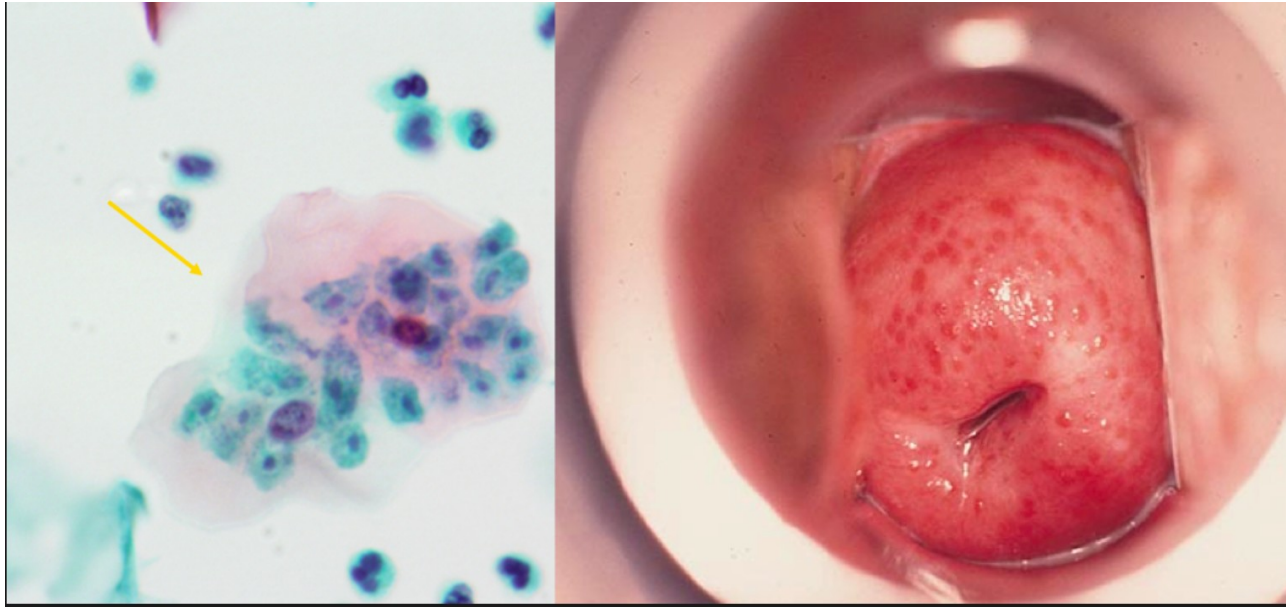
Crude incidence rates per 100,000 and year:

|  | Male | Female |
|--|------|--------|
| Cervical cancer                        | -    | 21.5   |
| Anal cancer ‡                          | 0.4  | 0.5    |
| Vulvar cancer ‡                        | -    | 2.6    |
| Vaginal cancer ‡                       | -    | 0.6    |
| Penile cancer ‡                        | 0.9  | -      |
| Pharynx cancer (excluding nasopharynx) | 7.3  | 0.6    |

<http://www.hpvcentre.net/statistics/reports/UKR.pdf>, accessed April 30. 2018

# 2-tiered system: LSIL & HSIL





# Cervical Pap Tests

## ✓ RECOMMENDATIONS

- Clinicians should perform a cervical Pap test for all individuals who have HIV infection at the following time intervals:
  - Within 2 years of the onset of sexual activity or by age 21 years. (All)
  - Annually until 2 tests in a row screen negative, then every 3 years. (All)
  - At 6 months after treatment for an abnormal result, then annually until 2 tests in a row screen negative, then every 3 years. (All)

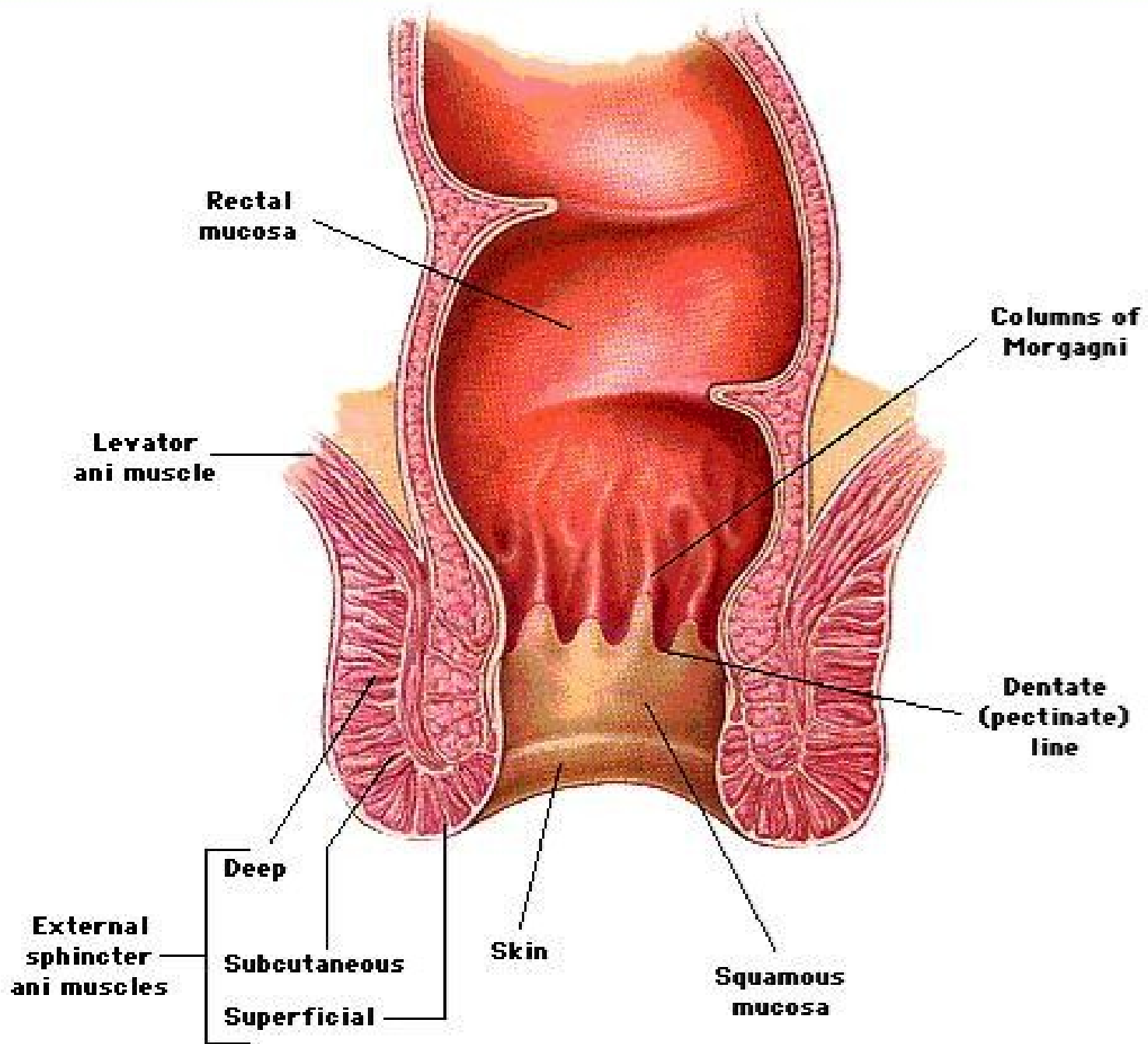


# Follow-Up of Abnormal Pap Test Results in All Patients



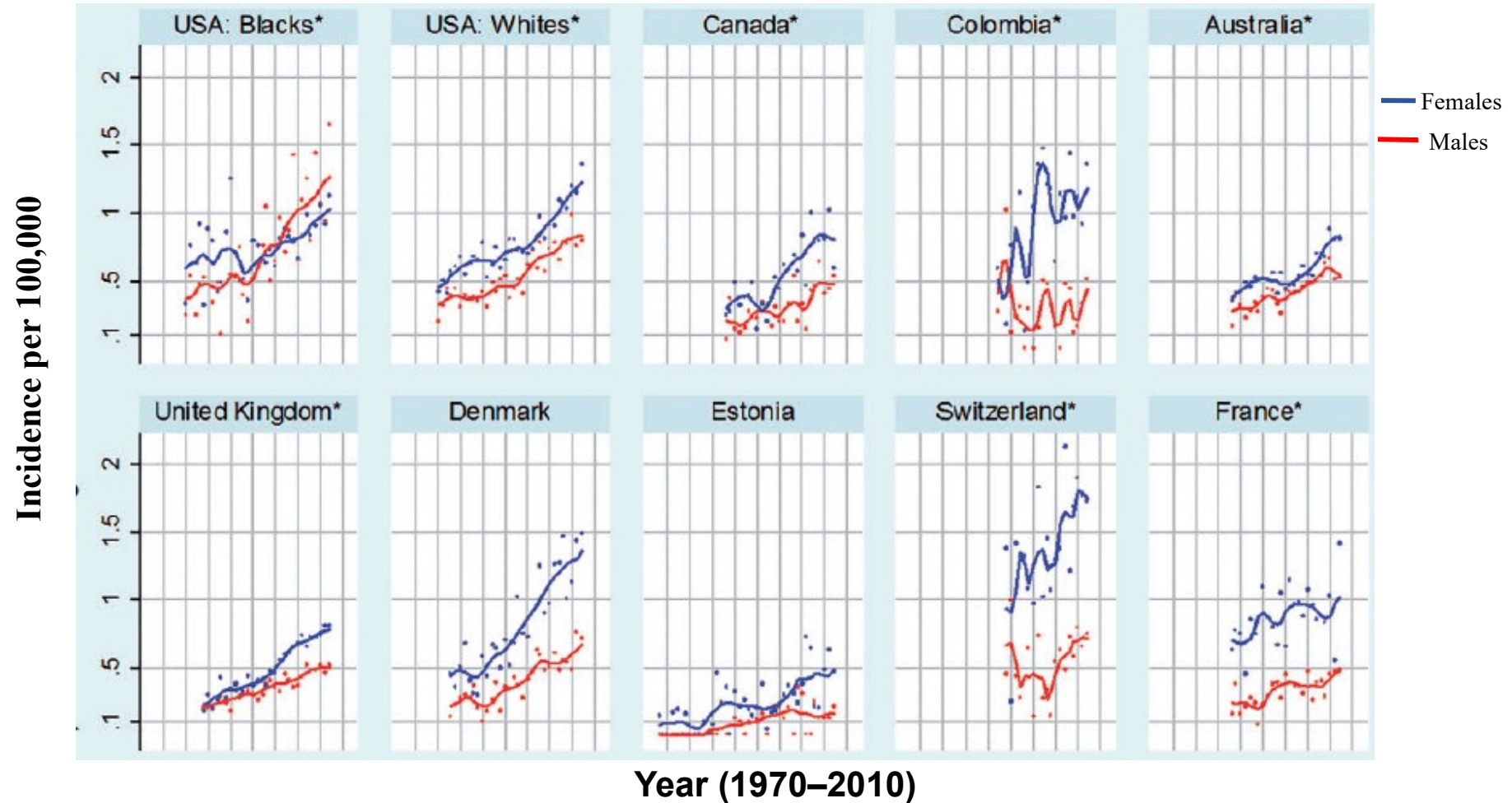
## ✓ RECOMMENDATIONS

- For individuals of all ages, clinicians should refer for or perform colposcopy in response to the following Pap test results:
  - Atypical squamous cells, HSIL cannot be excluded (ASC-H). (AI)
  - Low-grade squamous intraepithelial lesion (LSIL). (AI)
  - High-grade squamous intraepithelial lesion (HSIL). (AI)
  - Any result of atypical glandular cells (AGC). (AI)
- Colposcopy is not indicated as an initial screening test. Clinicians should limit colposcopy for use as a follow-up to abnormal screening on either Pap test or high-risk HPV test. (AII)
- After a patient has completed treatment for an abnormal cervical biopsy test, clinicians should repeat cytologic tests at 6 months, then annually until 2 tests in a row screen negative, then every 3 years. (AIII)



# Anal Cancer Incidence Is Increasing In Males and Females in Many Countries

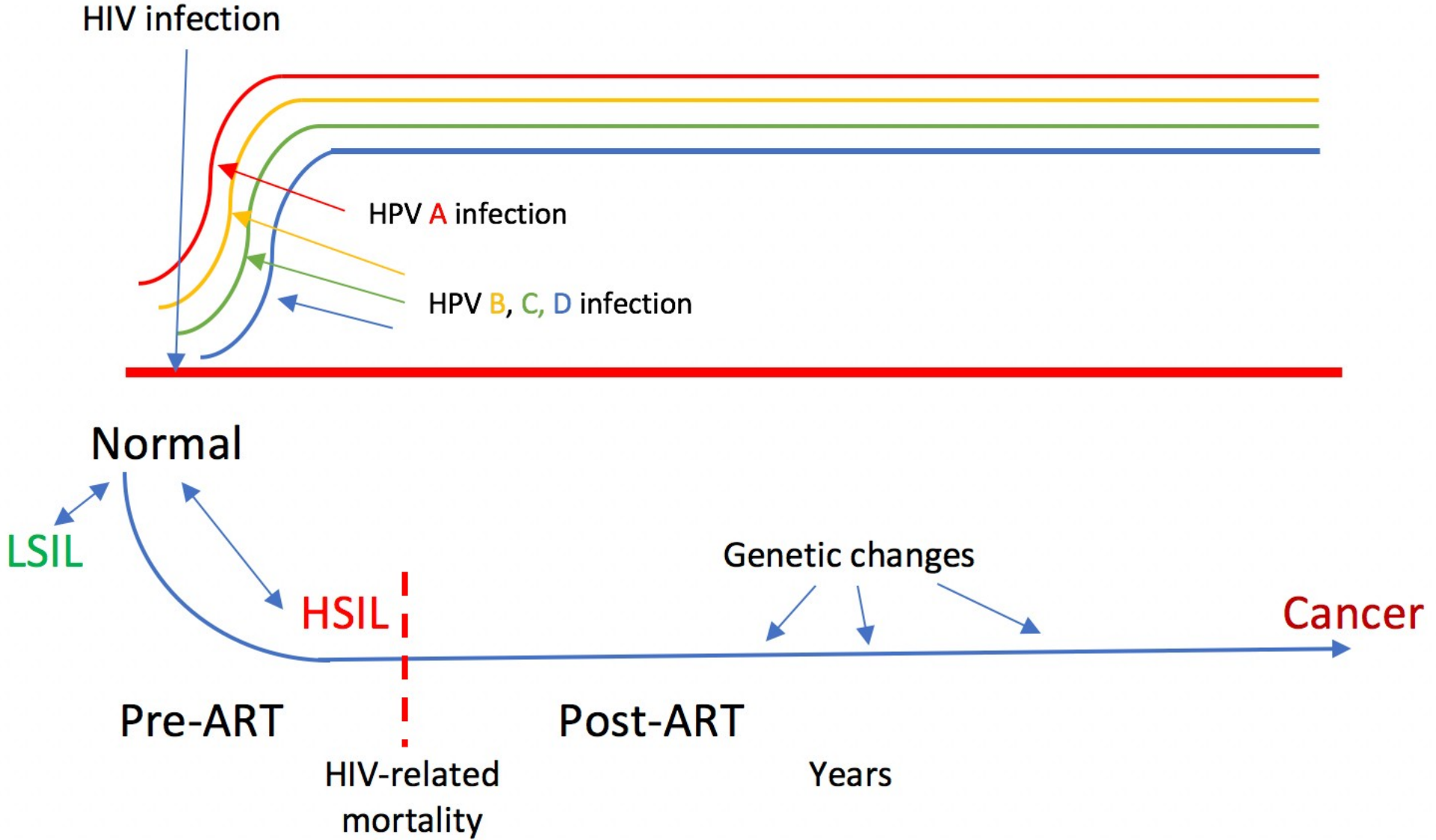
Age-standardized incidence rates of anal squamous cell carcinoma by sex



Based on data from the International Agency for Research on Cancer's Cancer Incidence in Five Continents series.

1. Islami F, et al. *Int J Epidemiol*. 2016 Oct 27. pii: dyw276. [Epub ahead of print].

# HPV-related cancer pre and post-ART



Anal cancer rates in North American AIDS Cohort  
Collaboration on Research and Design) (NA-ACCORD)  
1996-2007

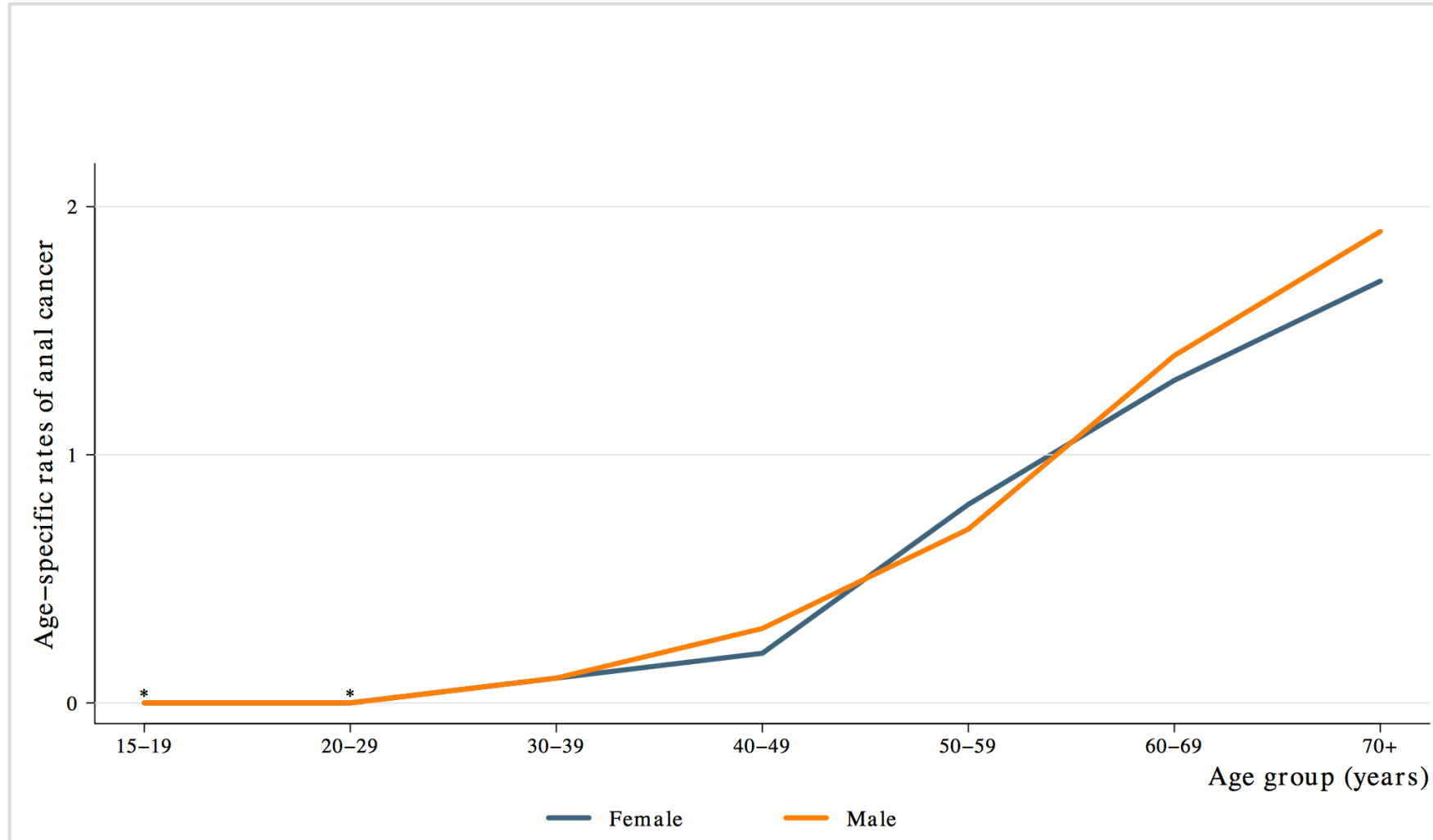
Incidence/100,000 (85% CI)

• HIV-infected

- MSM 131 (109-157)
- MSW 46 (25-77)
- Women 30 (17-50)

# Anal cancer incidence by age-women

Figure 20: Anal cancer incidence rates by age group in Ukraine (cancer registry data)



\*No cases were registered for this age group.

# People living with HIV/AIDS are living into older ages

- In 2015 it was estimated that over half of people living with HIV/AIDS (PLWHA) in the U.S. were over the age of 50 years
- The 2011 CDC HIV Surveillance report estimates that over 311,000 PLWHA were over 50 years old in 2012

# PLWHA may be aging prematurely

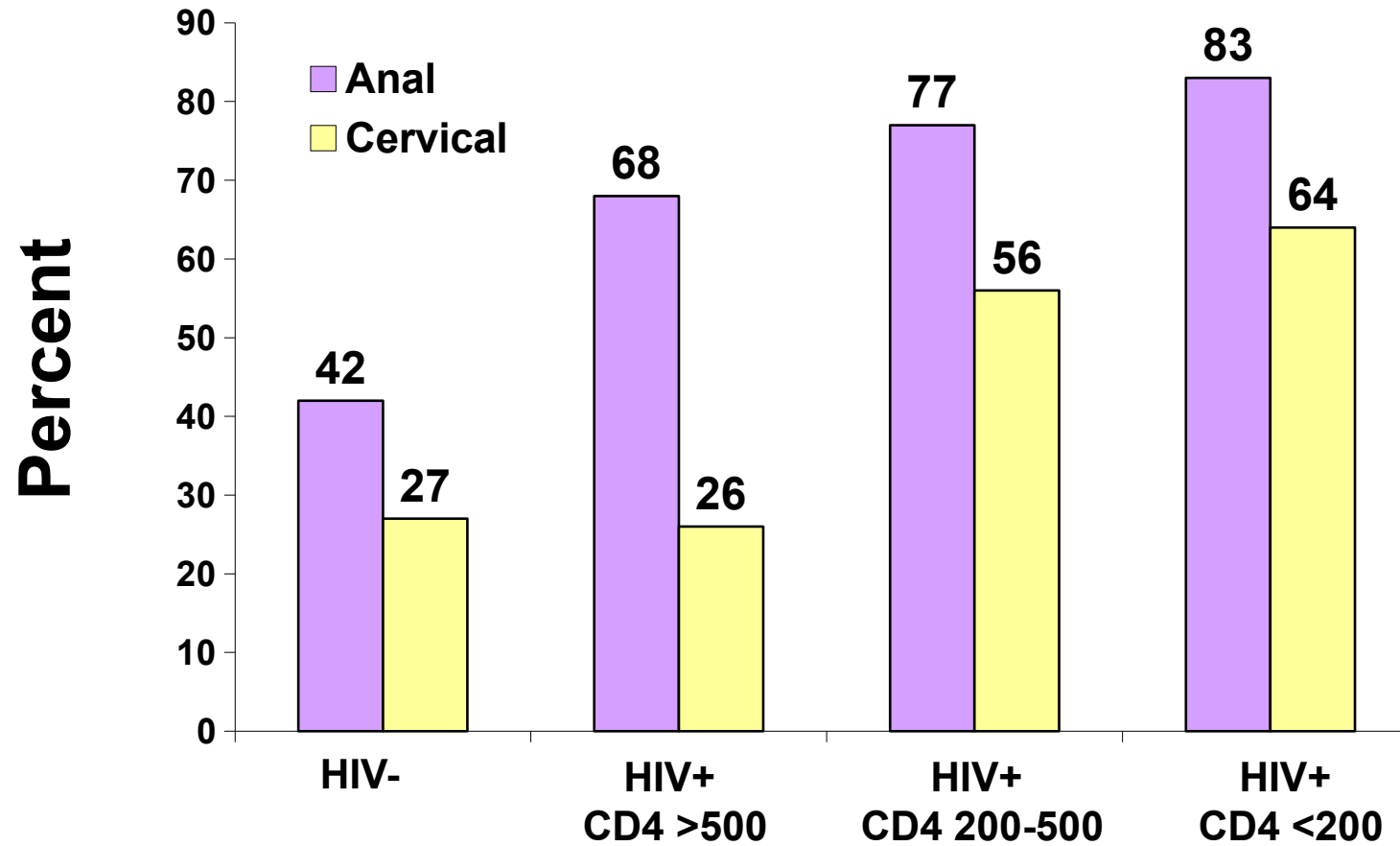
- Several illnesses associated with advanced age are now common among HIV-infected individuals receiving ART
- cardiovascular disease (CVD), liver disease, renal disease, diabetes
- neurocognitive decline and a number of cancers



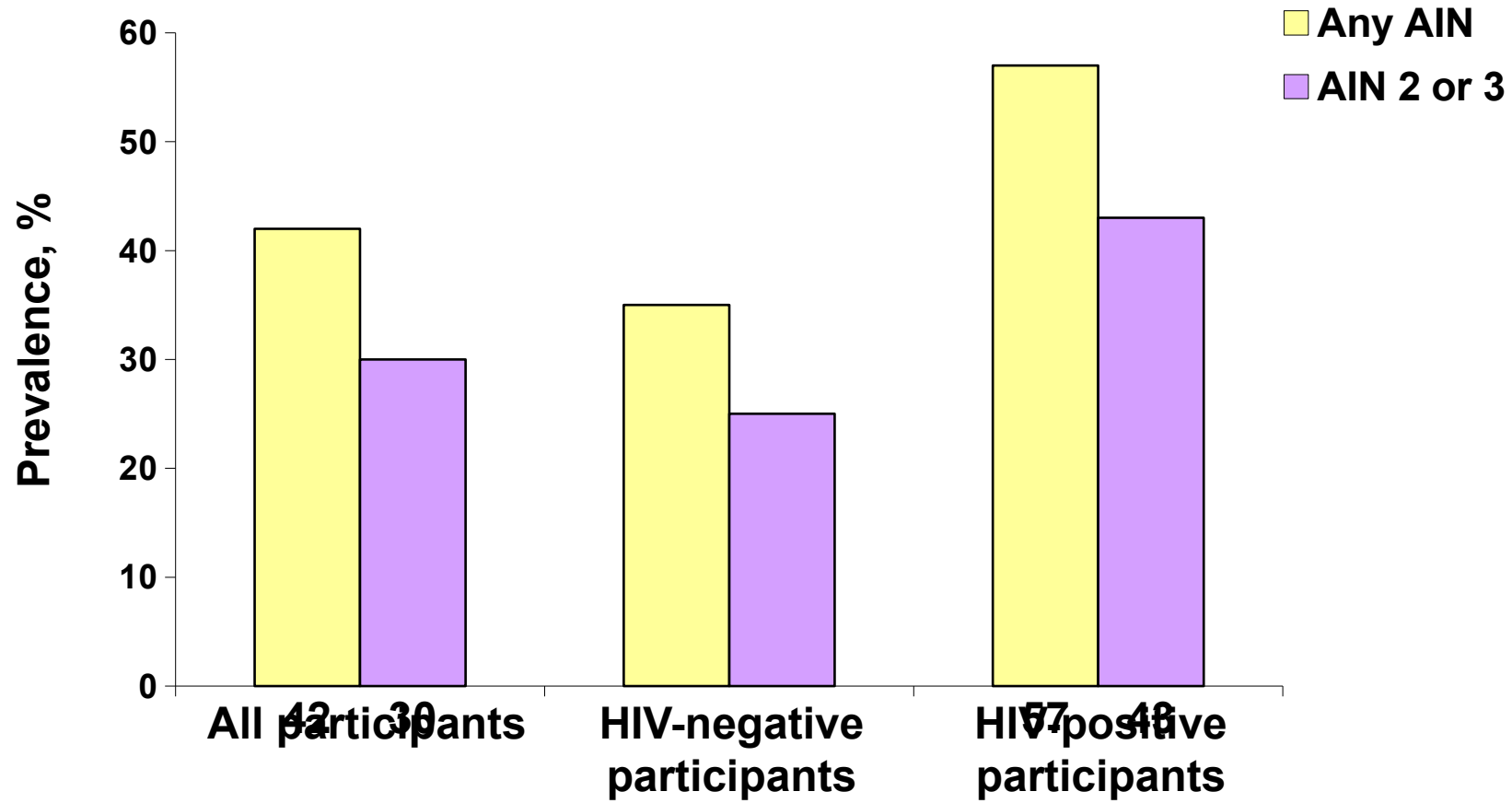
**Table 2. Anal Cytology and Anal Human Papillomavirus (HPV) Test Results by Participant Category for the 621 Participants in the SUN Study, 2004–2006**

| Diagnosis                    | All Participants | MSM      | Women    | MSW     |
|------------------------------|------------------|----------|----------|---------|
| <b>Anal cytology results</b> |                  |          |          |         |
| Negative                     | 336 (54)         | 165 (44) | 97 (65)  | 74 (80) |
| ASC-US                       | 79 (13)          | 52 (14)  | 20 (13)  | 7 (8)   |
| ASC-H                        | 17 (3)           | 12 (3)   | 3 (2)    | 2 (2)   |
| LSIL                         | 149 (24)         | 116 (31) | 25 (17)  | 8 (9)   |
| HSIL                         | 40 (6)           | 34 (9)   | 5 (3)    | 1 (1)   |
| <b>HPV types detected</b>    |                  |          |          |         |
| Any                          | 552 (89)         | 363 (96) | 135 (90) | 54 (59) |
| High-risk                    | 510 (82)         | 336 (89) | 126 (84) | 48 (52) |
| Low-risk                     | 471 (76)         | 324 (85) | 110 (73) | 37 (40) |
| 16 or 18                     | 255 (41)         | 192 (51) | 47 (31)  | 16 (17) |

# Anal and cervical HPV infection in HIV-positive women and HIV-negative women at high risk of HIV infection



# Prevalence of AIN among MSM Population-based data

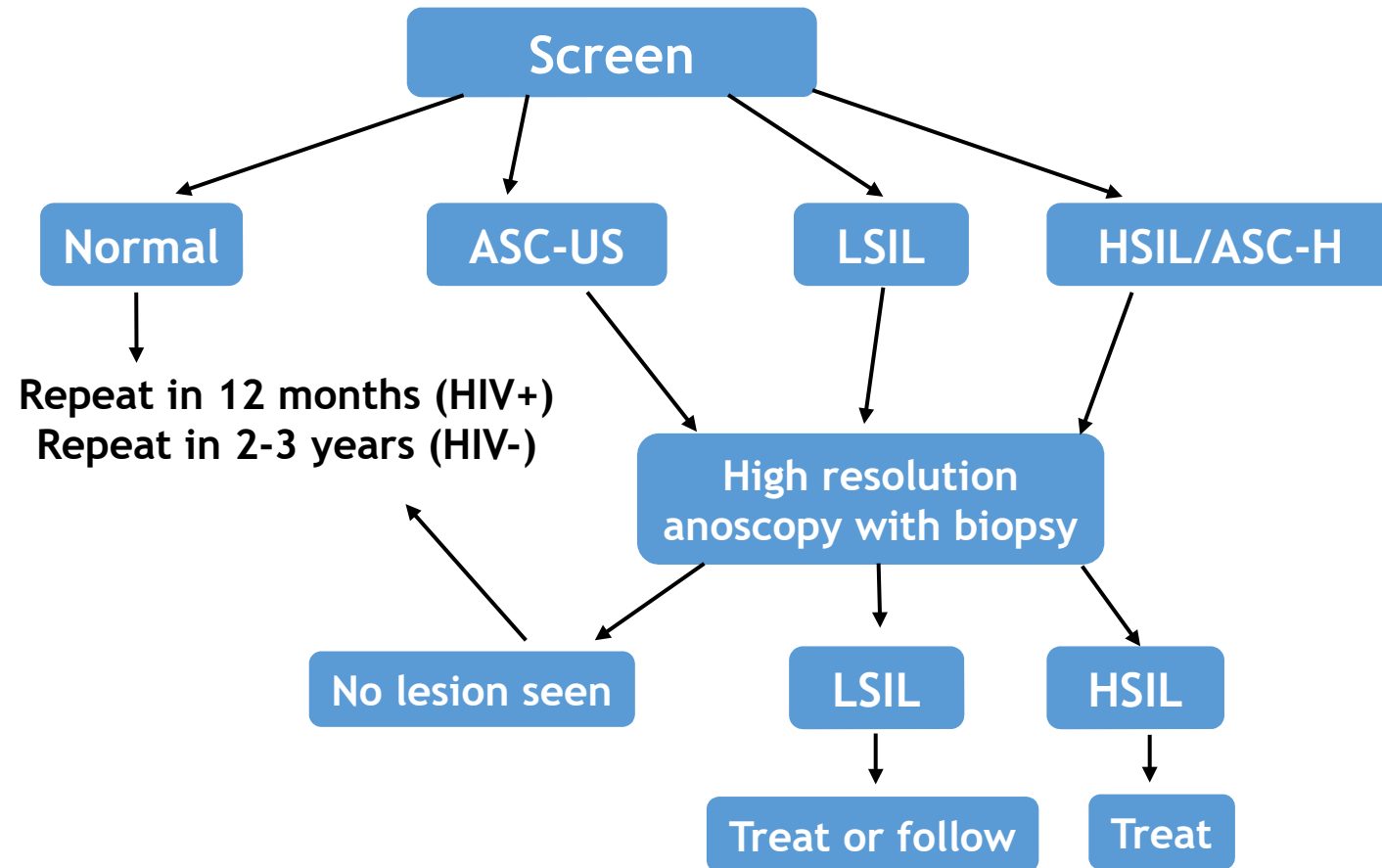


# High prevalence of anal HSIL in HIV+ women

- AMC-084- nearly 30% of HIV+ women

Stier EA et al. Presented at International Anal Neoplasia Society (IANS) Scientific Meeting., San Francisco, CA. November 11-13, 2016.

# Anal cytology screening for ASIL



# Who should be screened for anal cancer and pre-cancer?

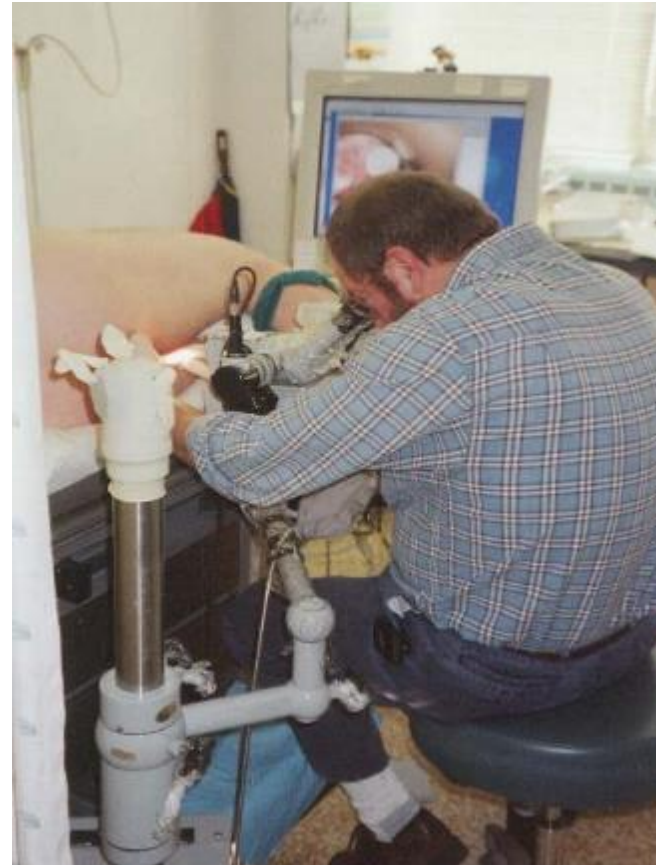
- All HIV-positive men regardless of sexual orientation
- All HIV-negative MSM
- Women with high-grade cervical or vulvar lesions or cancer
- All HIV+ women
- All men and women with perianal condyloma
- Solid organ transplant recipients
- Over 25 years if immunosuppressed, inc. HIV
- Over 40 years if immunocompetent

# Digital anorectal exam (DARE!)



# High resolution anoscopy (HRA)

HRA is an *office-based* procedure examining the anus, anal canal and perianus using a colposcope or operating microscope with 5% acetic acid and Lugol's solution







my ass hurts

what?



**the**  
**ANCHOR**  
**study.org**

AMC-A01: Funded by NCI and OAR: U01 CA 121947

# Summary

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- HPV-related disease is going to remain a serious problem among HIV-infected men and women for the foreseeable future
- HPV vaccination up to age 26 years!!
- Screen women for cervical disease at 21 years of age with cervical Pap smear or within 1-2 years of onset of sexual activity
- Perform digital anorectal exam annually on all HIV-infected people
- Screen high risk men and women with anal cytology where high resolution anoscopy is available