Human Papilloma virus

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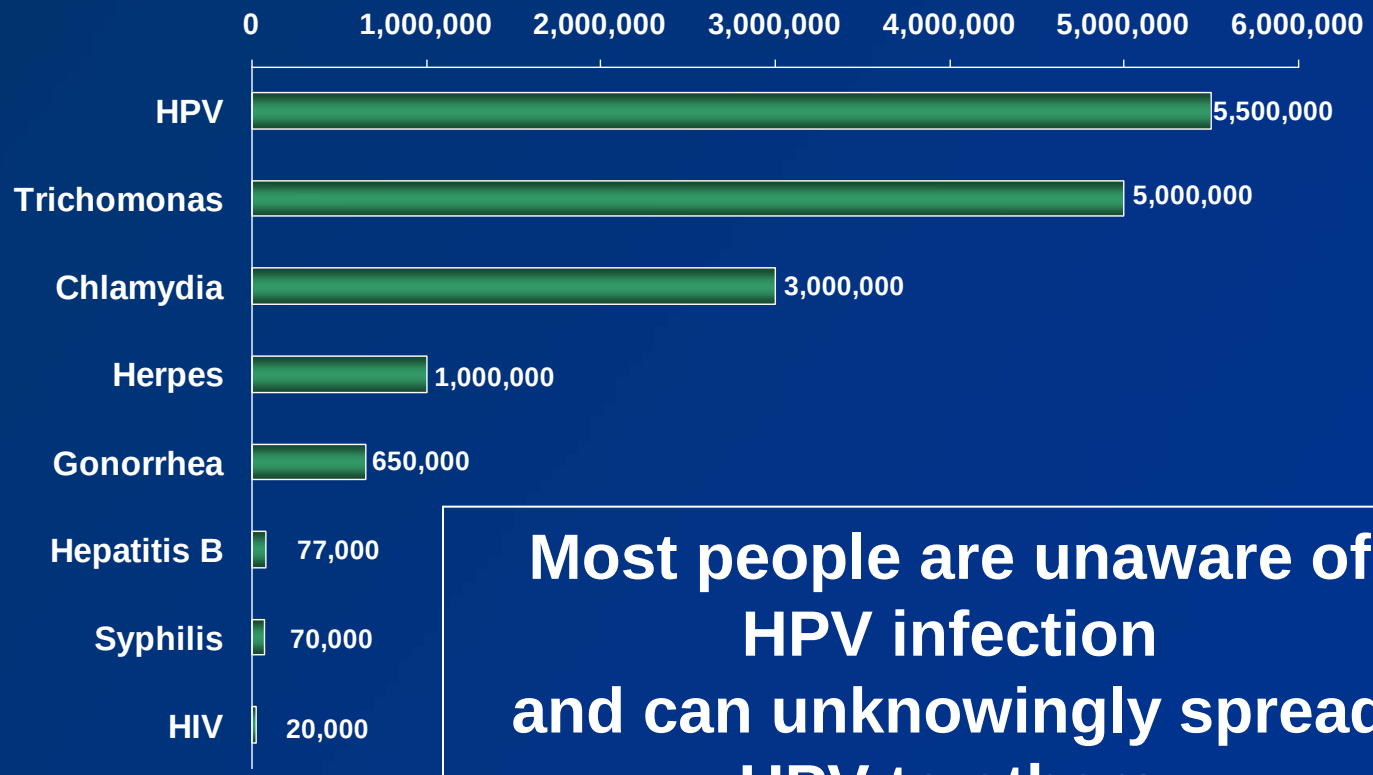
HPV is the Most Common Sexually Transmitted Infection in the U.S. (Estimated Annual New Cases)



Most people are unaware of HPV infection and can unknowingly spread HPV to others

Age Specific HPV Prevalence Among Women With Normal Cytology

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Original Article

Prevalence of HPV Infection and Its Association with Cytological Abnormalities of Pap Smears in Tehran

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Abstract

Background: Human papillomavirus infection is one of the most common genital infections. More than 100 types of this virus have been identified, and most of them are capable of infecting the genital mucosa. Human papillomavirus is in association with cancerous and precancerous lesions of the cervix; some types like HPV 16 and 18 are highly carcinogenic, some types like HPV 31 and 33 are moderately and some types like HPV 6 and 11 are mildly carcinogenic. In this research, the relationship between cytological changes of the squamous epithelial cells and the presence of HPV infections in our cases has been assessed.

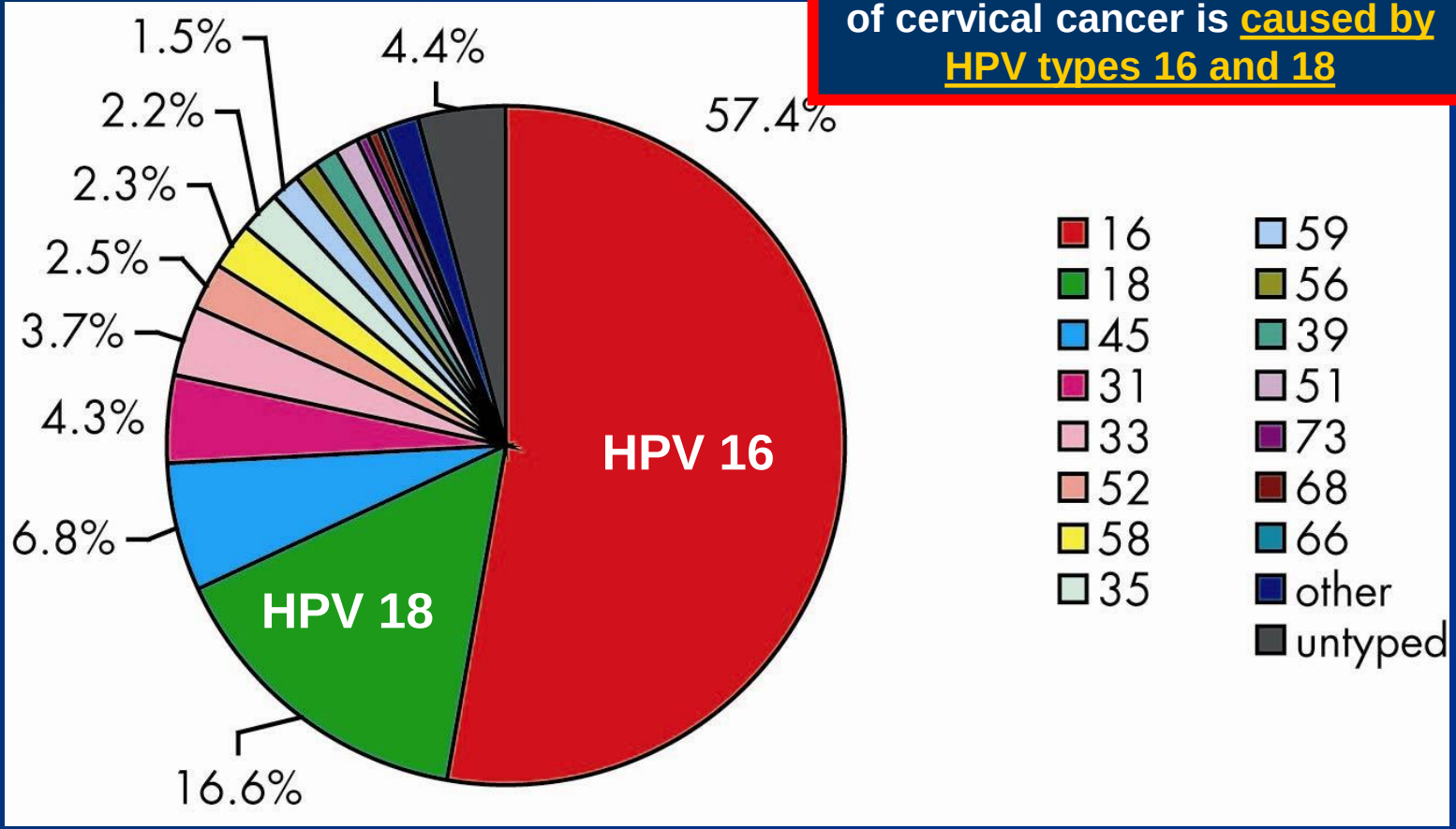
Methods: In this prospective study, we collected 681 samples from women admitted to different hospitals and private gynecological clinics in Tehran, during the years 2003-2005. Two specimens were collected from each patient; one for a Pap smear study and the other for PCR assay in order to detect HPV.

Results: Out of our 681 samples, 600 specimens were suitable for PCR assay, and 34 cases were HPV positive in PCR assay. This means that 5.7 percent of our patients were infected with HPV.

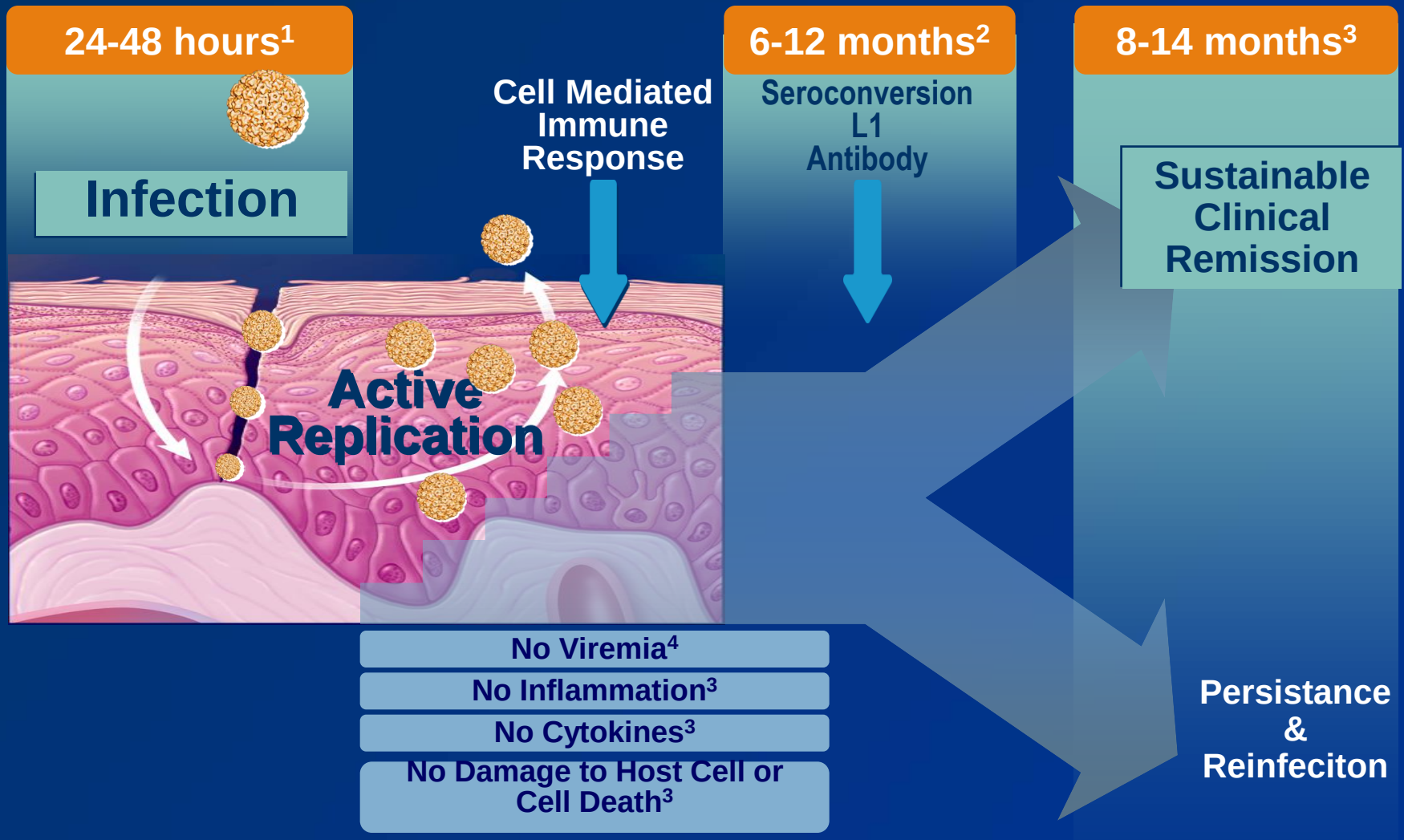
Conclusion: HPV infection is common in Iran and is nearly identical to European countries such as Germany, and Spain. Also, we found that using PCR assay in order to detect the presence of HPV viruses in vaginal discharges can be very helpful.

Worldwide Prevalence of HPV Types in Cervical Cancer

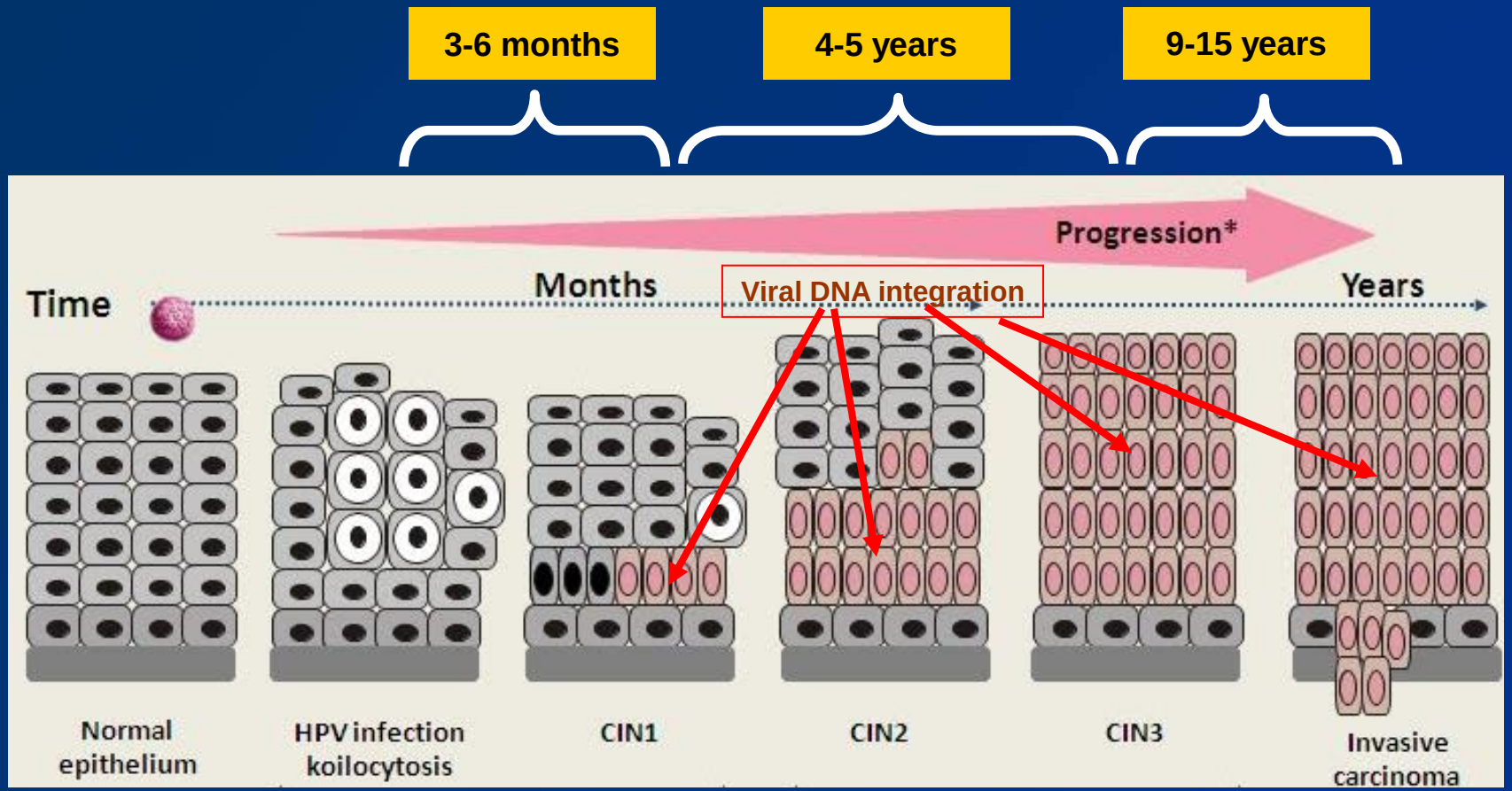
Evidence of HPV documented in 99.7% of cervical cancers worldwide. Approximately 70% of cervical cancer is caused by HPV types 16 and 18



Natural History of HPV Infection



Natural History of Cervical Cancer



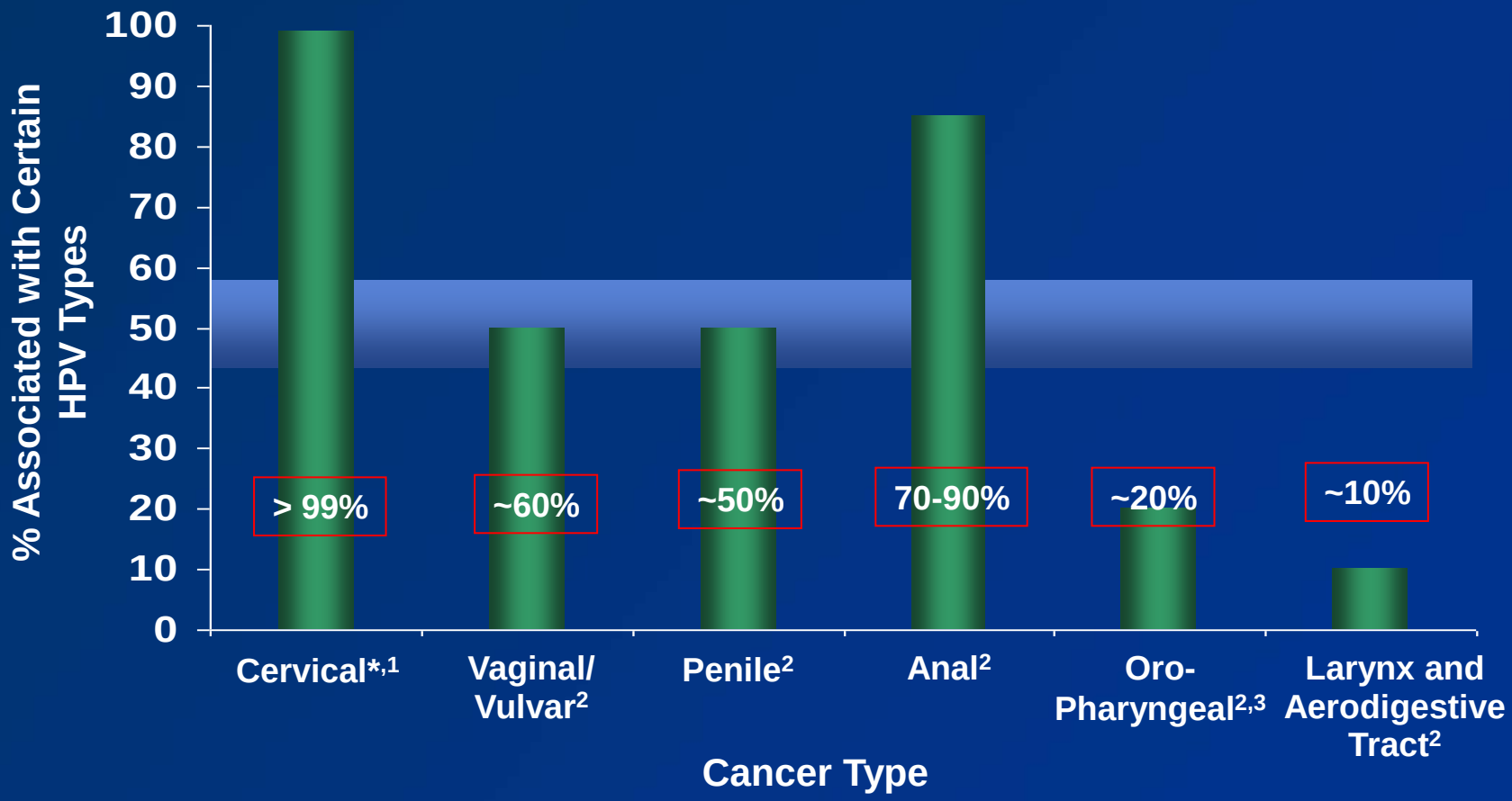
Prevalence Age ~ 17-22 yrs

Prevalence Age ~ 28 yrs

Prevalence Age ~ 42 yrs

Prevalence Age ~ 50 yrs

HPV and Cancer: A Broader Picture



Genital Warts – HPV 6, 11

Mild/ Inconspicuous

Moderate to Severe

- HPV 6 & 11 are responsible for >**90%** of anogenital warts[1]
- Infectivity is greater than **75%**[2]
- Incubation 3-6 months (6 weeks to 2 years)
- **In 2/3 pats with GW – also internal lesions (CIN)**
- **Recurrence rate is high >25% over 3 months**
- **Treatment painful and embarrassing[4] and can be expensive[3]**

WHO: Comprehensive Cervical Cancer Control

Primary Prevention
Education, behavior modification, and HPV vaccination.[1]

Secondary Prevention/ Screening
Cervical cancer screening is important for detection of cervical disease and appropriate disease management.[1]

Treatment
Women with cervical pre-cancers can be treated with relatively simple procedures to prevent cancer; women with invasive cancer often require surgery, radiation, or chemotherapy.[1]

Palliative Care
Women with advanced cervical cancer suffer from pain and other morbidity; palliative care can reduce suffering by providing symptomatic relief and compassionate support.[1]

Improving awareness and education about HPV infection and cervical cancer can reduce high-risk sexual behaviors. Implementation of local strategies can change behavior and decrease risk.[1]

WHO POSITION PAPER

2009, 84, 117–132 No. 15

World Health Organization

Organisation mondiale de la Santé

Weekly epidemiological record
Relevé épidémiologique hebdomadaire

10 APRIL 2009, 84th YEAR / 10 AVRIL 2009, 84e ANNÉ
No. 15, 2009, 84, 117–132
http://www.who.int/wer

Human papillomavirus vaccines
WHO position paper

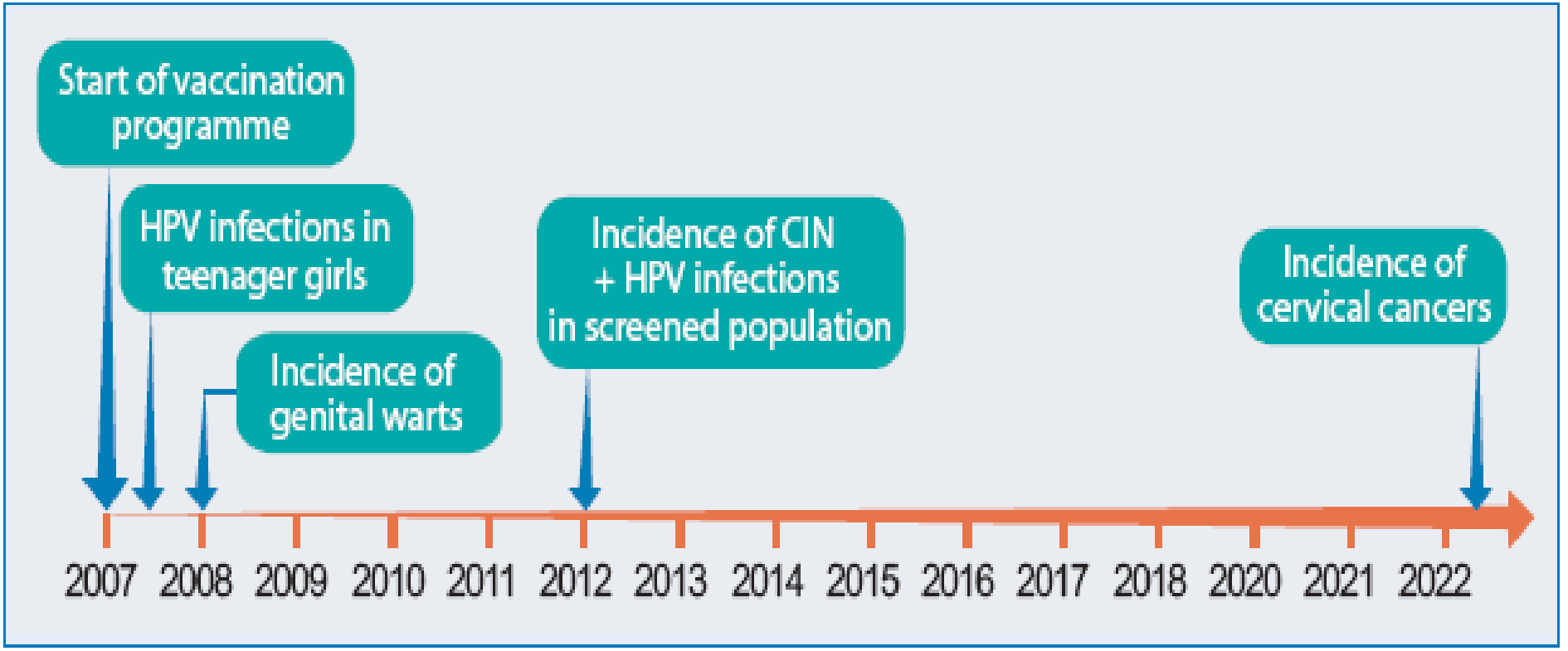
HPV vaccines are most efficacious in females who are naive to vaccine-related HPV types; therefore, the primary target population should be selected based on data on the age of initiation of sexual activity and the feasibility of reaching young adolescent girls through schools, health-care facilities or community-based settings. The primary target population is likely to be girls within the age range of 9 or 10 years through to 13 years.[30, 31]

ORIGINAL ARTICLE

The near disappearance of genital warts in young women 4 years after commencing a national human papillomavirus (HPV) vaccination programme

Tim R H Read,[1] Jane S Hocking,[2] Marcus Y Chen,[1] Basil Donovan,[3] Catriona S Bradshaw,[4] Christopher K Fairley[1]

Timelines for Expected Benefits After Introduction of HPV Vaccination



- Three human papillomavirus (HPV) vaccines have been clinically developed, although not all are available in all locations:
    - Quadrivalent vaccine (Gardasil) targets HPV types 6, 11, 16, and 18.
    - 9-valent vaccine (Gardasil 9) targets HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58.
    - Bivalent vaccine (Cervarix) targets HPV types 16 and 18.

Indications and Dosing

- **Girls and Women 9 through 26 (in some Countries adult women 26-45 y.o.) for prevention**
  - **Cervical**, **vulvar**, and **vaginal cancer** caused by HPV types 16 and 18
  - **Anal cancer and precancerous dysplastic lesions**
  - **Genital warts** (condyloma acuminata) caused by HPV types 6 and 11
  - **Precancerous or dysplastic lesions due to HPV types 6/11/16/18:**
    - Cervical intraepithelial neoplasia (**CIN**) grade **1/2/3** and cervical Adenocarcinoma *In Situ* (**AIS**)
    - Vulvar intraepithelial neoplasia (**VIN**) grade **2 & 3**
    - Vaginal intraepithelial neoplasia (**VaIN**) grade **2** & **3**
- **Boys and Men 9 through 26**
  - **Genital Warts** (condyloma acuminata) caused by HPV types 6 and 11
  - **Anal cancer and precancerous dysplastic lesions**
  - **Dosing of quadrivalent vaccine or placebo: at day 1, month 2, and month 6**

> 50 million doses distributed worldwide

Contraindications

- Hypersensitivity, including severe allergic reactions (a vaccine component), or after a previous dose

Adverse Reactions

- Common Injection site reactions
  - Pain
  - Swelling
  - Redness
- Common Systemic reactions (like to other vaccines)
  - Headache
  - Fever
- Syncope very rarely
  - sometimes resulting in falling with injury, observation for 15 minutes after administration is recommended. Syncope, sometimes associated with tonic-clonic movements and other seizure-like activity, has been reported following vaccination When syncope is associated with tonic-clonic movements, the activity is usually transient and typically responds to restoring cerebral perfusion by maintaining a supine or Trendelenburg position.

What Do We Know About Vaccine Efficacy

- Vaccine efficacy is 95-100%
  - In HPV naive women
  - Women with <5-6 lifetime sex partners
  - Women who get all 3 vaccines on schedule

HPV vaccine should be administered at 11 to 12 years. It can be administered starting at 9 years of age.

- For adolescents and adults aged 13 t o 26 years who have not been previously vaccinated or who have not completed the vaccine series, catch-up vaccination is recommended.

- the ACIP notes that the decision to vaccinate adults older than 26 years should be made on an individual basis. For previously unvaccinated adults aged 27 to 45 years who have a low likelihood of prior HPV exposure (eg, no prior sexual experience or a limited number of prior sexual partners) but have a future risk of HPV exposure (eg, new sexual partners), we suggest HPV vaccination .

- HPV vaccination during pregnancy is typically avoided because of limited information about safety
- For individuals starting any HPV vaccine series when they are younger than 15 years old, we suggest administering a two- rather than a three-dose vaccine series
- In such patients, the two doses are administered at least six months apart.
- For individuals starting any HPV vaccine series at 15 years and older, the HPV vaccine is administered in three doses at 0, at 1 to 2 months, and at 6 months.
- Immunocompromised patients should also receive a three-dose series

- Clinicians should be aware that HPV immunization is not effective in clearing HPV infection, genital warts, or anogenital intraepithelial neoplasia that is already present.

- HPV vaccination status does not impact cervical cancer screening recommendations

- HPV is transmitted through intimate skin-to-skin contact.

- having vaginal, anal, or oral sex with someone who has the virus. It is most commonly spread during vaginal or anal sex

- Common that nearly all men and women get it at some point in their lives.

- Can be passed even when an infected person has no signs or symptoms.

- Can develop symptoms years after being infected, making it hard to know when you first became infected

General Considerations

There is currently no specific antiviral therapy available to cure HPV infection.

Because of the benign and self-limited nature of warts, treatments that cause scarring should be avoided.

There is no evidence that aggressive treatment results in a better long-term outcome, and temporary interruption of therapy is an option.

Local Destructive Therapy

Application of TCA 70–90% solution is a commonly utilized office-applied therapy that results in local tissue destruction.

Repeat each week or every other week as needed. Excessive application causes scars. Take great care not to treat normal surrounding skin.

Repeated weekly application is required for four to six weeks

Cryotherapy is inexpensive, effective and does not require anesthesia; as a result, it is often used as a first-line therapy followed by patient-applied podophyllotoxin. Liquid nitrogen is applied with a cotton swab, spray gun or closed system cryoprobe .Two freeze–thaw cycles, the extent of which is visually controlled, lead to wart necrosis, and multiple treatments result in remission rates of 78% to 88%, with recurrences in 20–40% of patients.

Laser ablation

Preferred therapy for extensive or multifocal lesions.

Laser is also useful for treating vaginal warts when surgical excision is technically challenging or not feasible.

A major benefit of using laser rather than the surgical knife on the vulva is that the laser better maintains normal vulvar anatomy.

Additional destructive modalities include curettage or scissor excision (especially for filiform warts and other exophytic lesions), electrosurgery ,laser treatment (e.g. with CO2 or pulsed dye lasers) and photodynamic therapy.

PODOPHYLLUM RESIN

Podophyllum resin 10% to 25% in compound tincture of benzoin used to be the standard provider-administered therapy.

It is not recommended for cervical, vaginal, or intraurethral warts. The compound is applied with a cotton-tipped applicator .

We instruct the patient to wash the area one to four hours after application of the drug

The treatment is repeated weekly for four to six weeks, or until the lesions have cleared

Topical Immunomodifiers

Imiquimod is an imidazoquinoline compound with immunomodulatory activities that has been approved by the US Food and Drug Administration (FDA) for the topical treatment of condylomata acuminata.

Later studies confirmed the therapeutic effect of imiquimod for anogenital warts and documented that this treatment resulted in a reduction of viral load, presumably due to activation of cellular immune responses.

Aldara (5 percent imiquimod) and Zyclara (3.75 percent imiquimod), for treatment of external genital warts,

- Aldara is applied three days per week (eg, Monday-Wednesday-Friday) for up to 16 weeks
- Zyclara is applied daily for up to 8 weeks

Hand washing before and after cream application is recommended.

The patient applies imiquimod cream directly to the clean dry warty tissue at bedtime, rubbing it in until the cream is no longer visible

this area is washed with mild soap and water 6 to 10 hours later.

Sexual contact should be avoided while the cream is on the skin.

Side effects of imiquimod include application site reactions (inflammation, erosion) that may require treatment-free periods. Imiquimod therapy is often more costly than other treatment options.

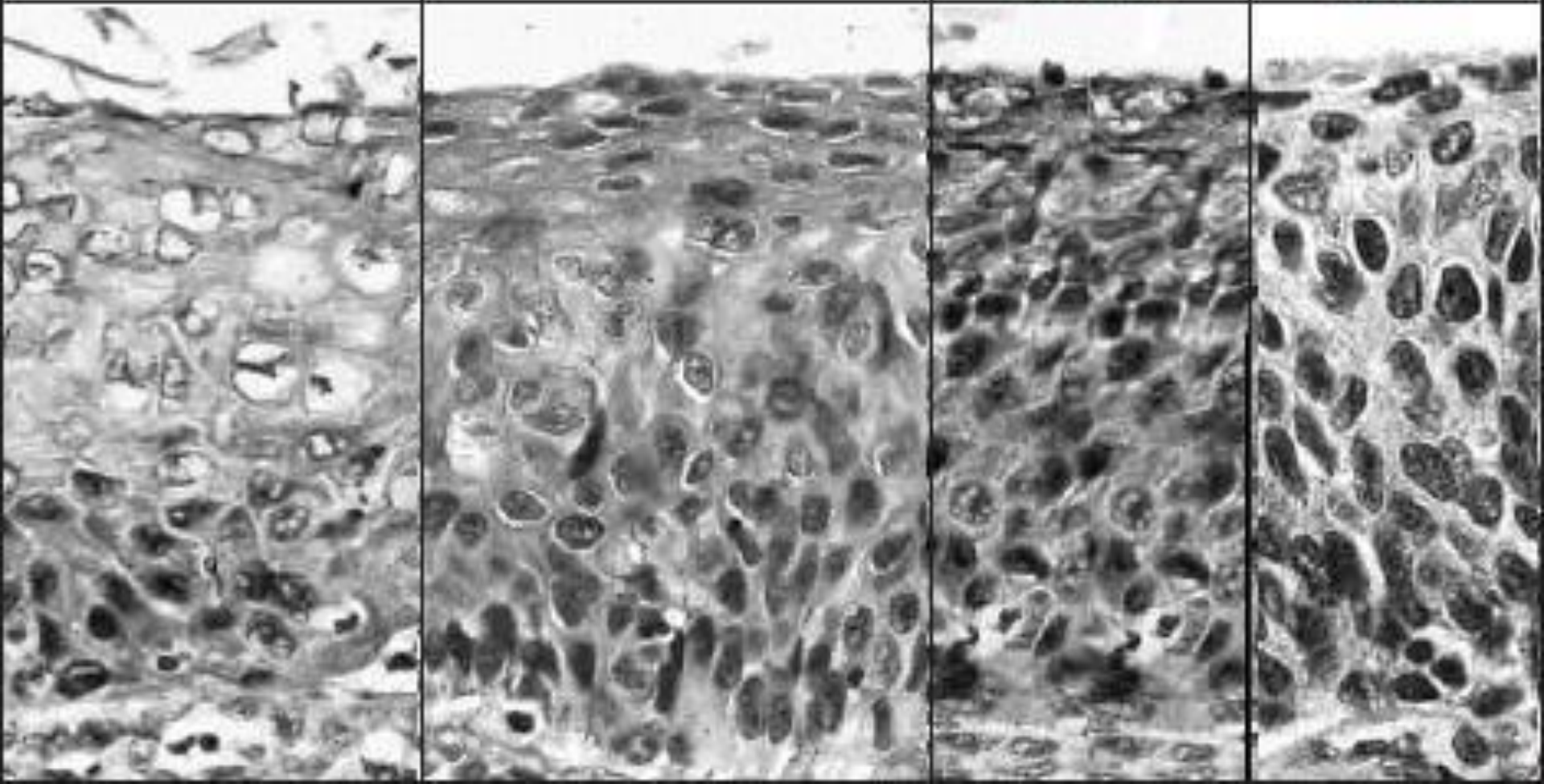
Sinecatechins

- A 0.5 cm strand of ointment is placed on each wart and a finger is used to cover the wart with a thin layer of the ointment 3 times each day for up to 16 weeks

DYSPLASIA

- DYSPLASIA mild:CIN1
- DYSPLASIA moderate: CIN2
- DYSPLASIA Sever :CIN3

LGSIL	HGSIL		
CIN I	CIN II	CIN III	
Mild dysplasia	Moderate dysplasia	Severe dysplasia	Carcinoma in-situ



CIN1

- Observation(12m)

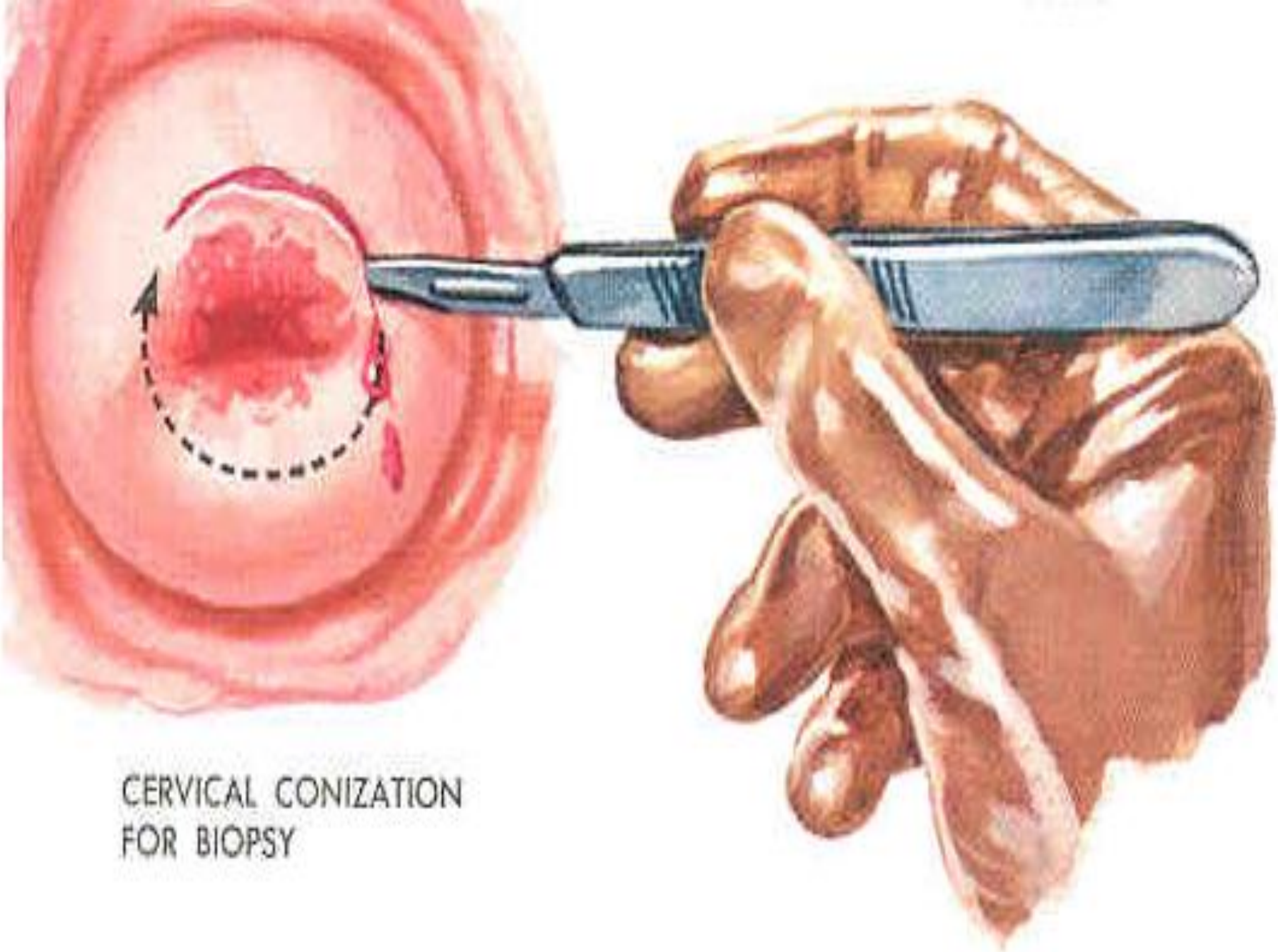
Pap smear & Hpv 12 months

progress or persist(24m):Laser,cryo,leep

CIN 2,3 در بیوپسی

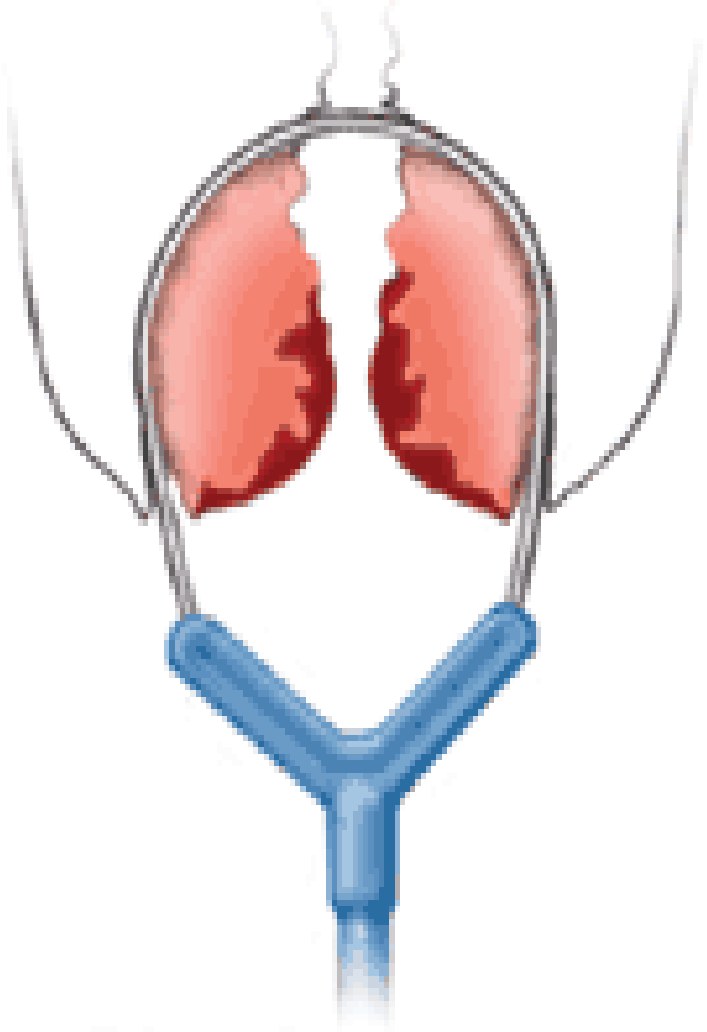
- در صورتی که کلپوسکوپی ناکافیست ویا CIN2,3عودکننده میباشد ویا در نمونه اندوسرویکال CIN2,3دیده شده ،پروسیجر اکسیژنال تشخیصی توصیه میشود.

- در صورتیکه کلپوسکوپی کافی باشد، پروسیجر اکسیژنال تشخیصی ویا ablation Tzone توصیه میشود.

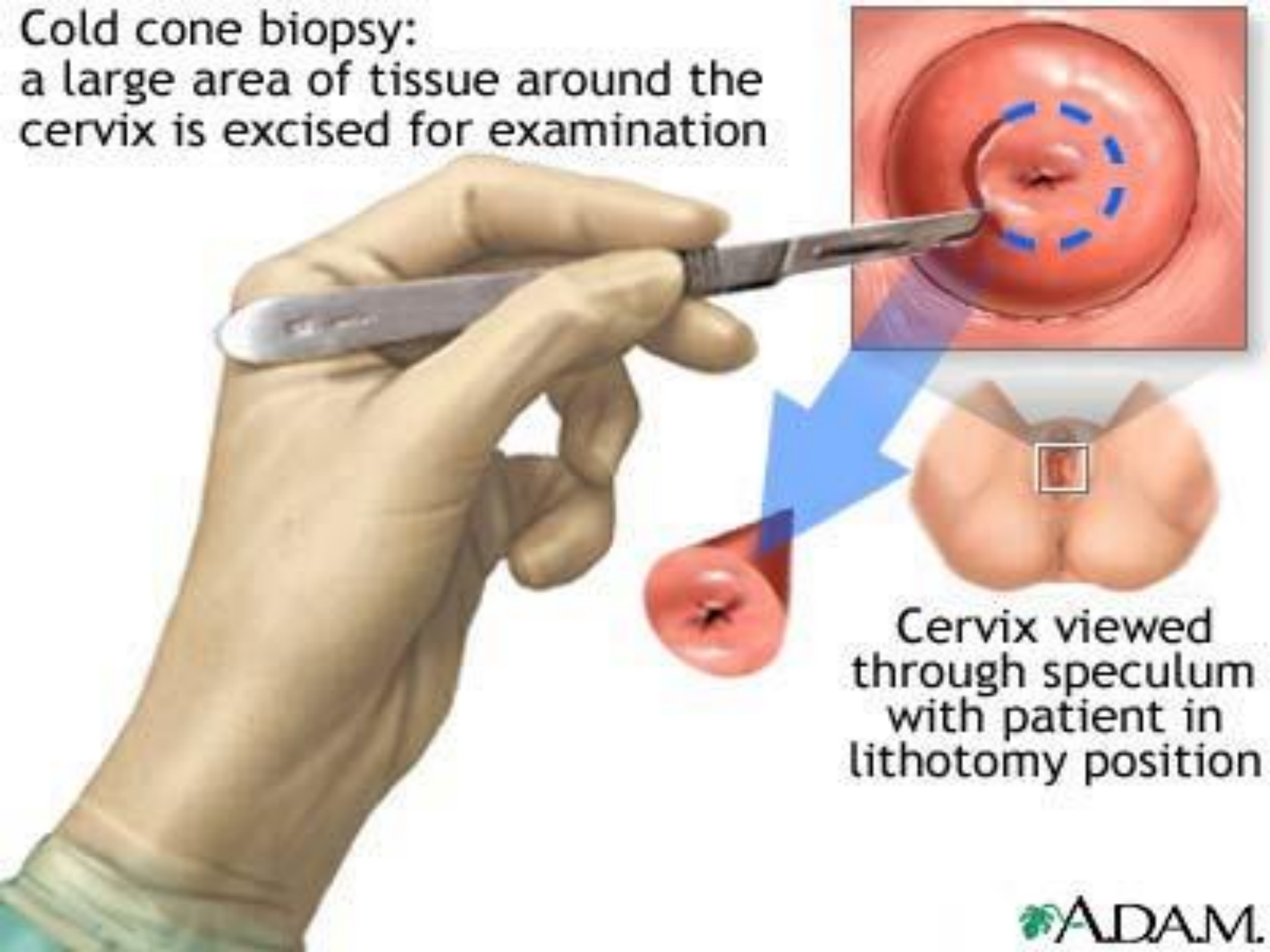


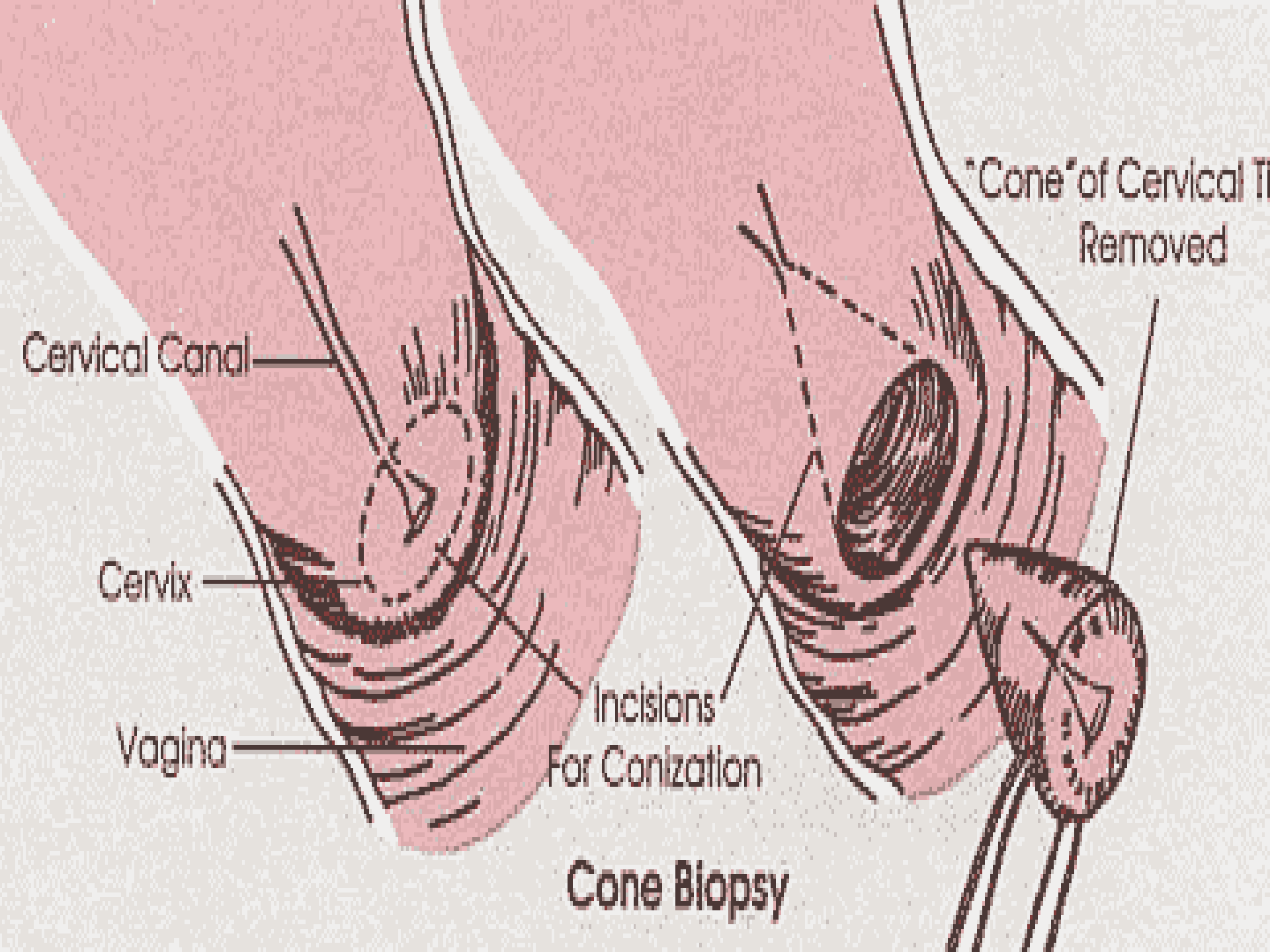
CERVICAL CONIZATION
FOR BIOPSY

LEEP



Ectocervical


Cold cone biopsy:
a large area of tissue around the cervix is excised for examination
Cervix viewed through speculum with patient in lithotomy position
A.D.A.M.


"Cone" of Cervical Ti
Removed
Cervical Canal
Cervix
Vagina
Incisions
For Conization

Cone Biopsy

Thank you!