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"Gonorrhea, syphilis, chlamydia, herpes,
HIV positive, genital warts..."

The most frequent agents of STD

1. Papillomaviruses
2. Chlamydiae
3. Yeasts

Other common agents of STD:

HBV

HCV

HIV

HSV 2

Mycoplasma & Ureaplasma

Gardnerella vaginalis

Klebsiella granulomatis

Trichomonas vaginalis

Sarcoptes scabiei

Phthirus pubis

Papillomaviruses

The **most frequent** agent of genital infections

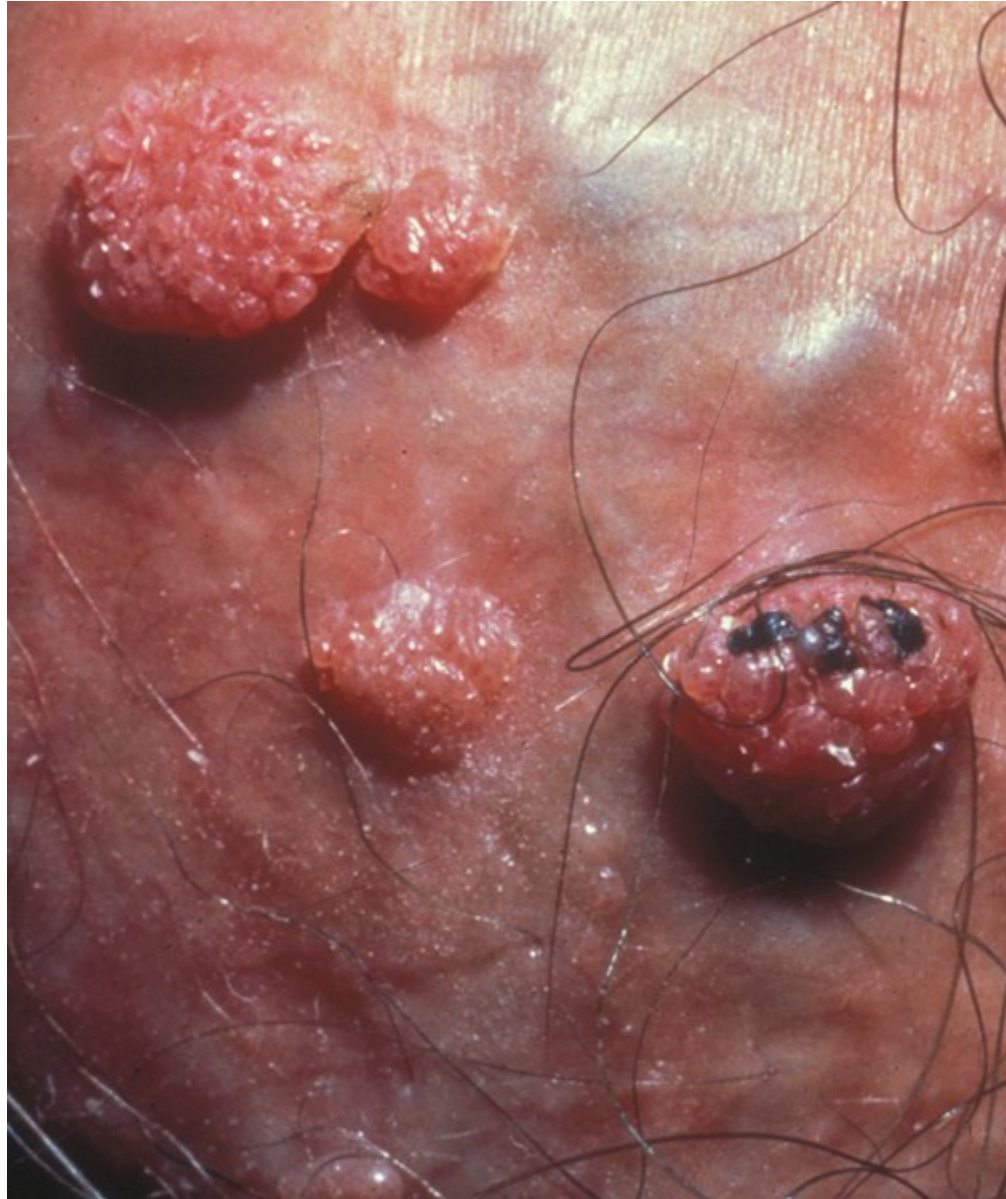
Genotypes 6, 11 and many other:
both ♂ & ♀: **anogenital warts**
(condylomata accuminata)

Genotypes 16, 18 and some other
♀: infection of **cervix** → Ca

Vaccination against carcinogenic types!

Culture impossible – diagnostics performed
using molecular methods

Anogenital warts (condylomata accuminata)



Chlamydiae

The second most frequent agent of genital inf.

***Chlamydia trachomatis* serotypes D to K**

**♂: nongonococcal & postgonococcal
urethritis**

♀: cervicitis → blenorrhoea neonatorum

Therapy: macrolides and tetracyclines

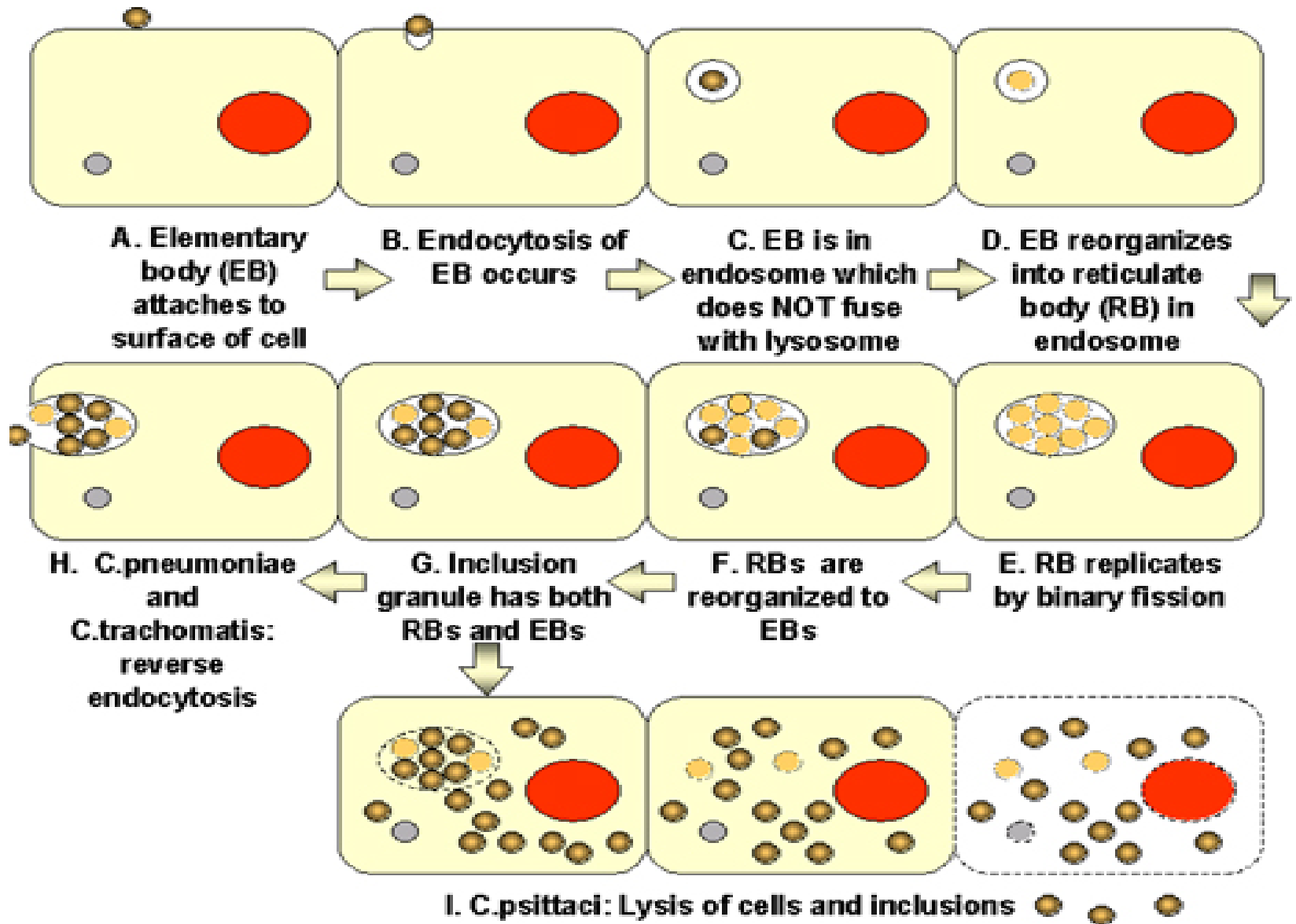
Lab. dg: direct: detection of antigen

detection of DNA

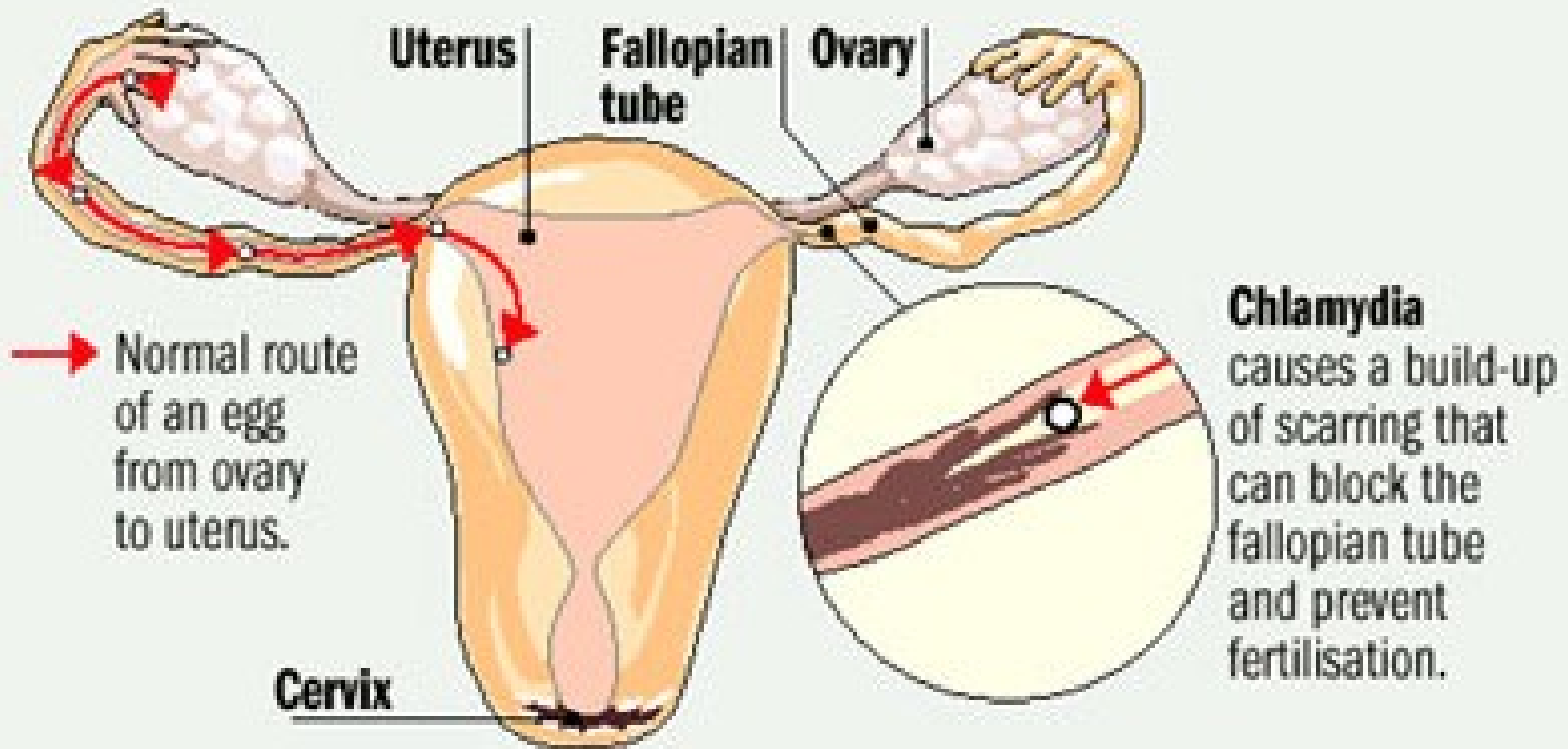
culture (special cell culture)

indirect (serology): not very useful

The developmental cycle of Chlamydia

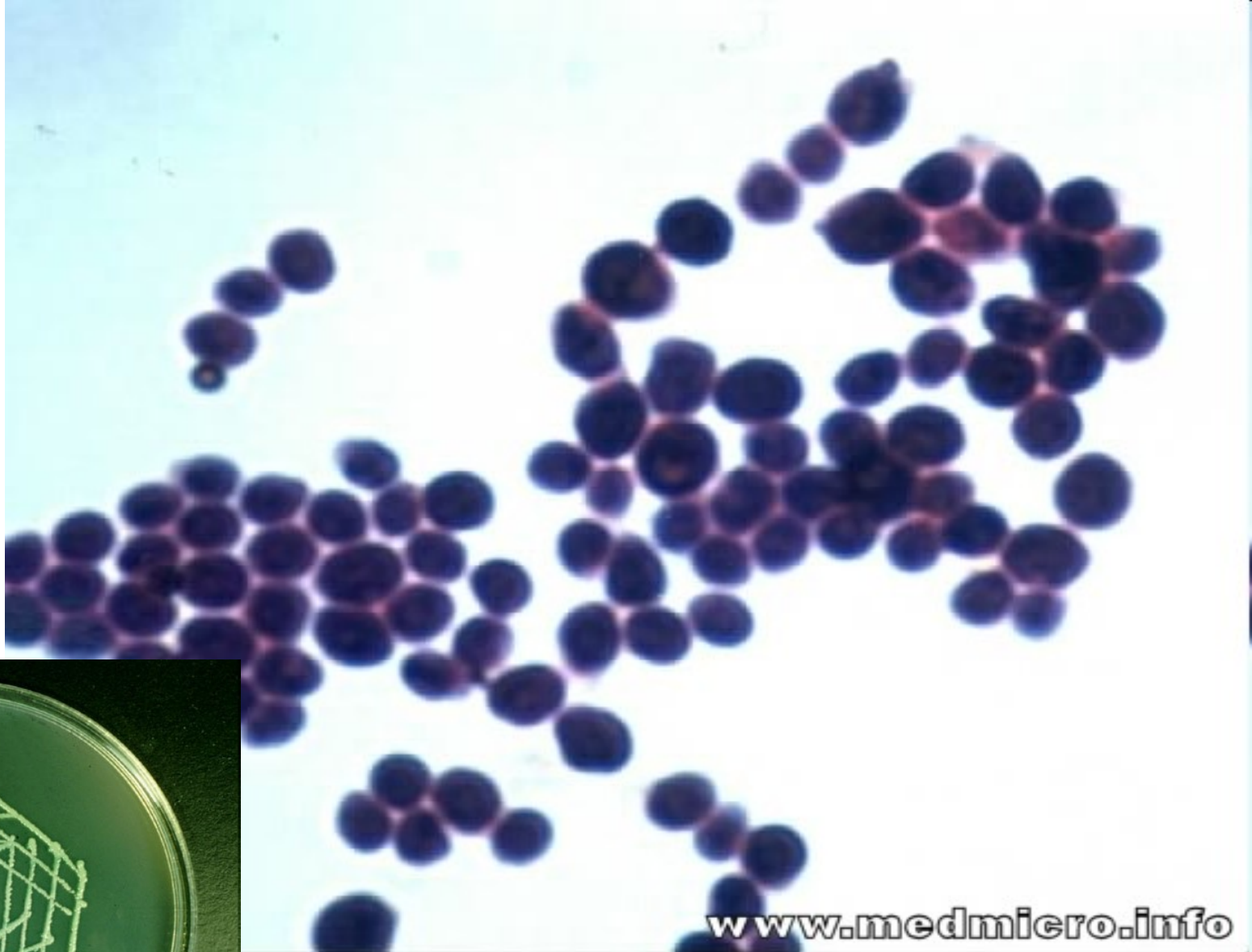


CHLAMYDIA THE EFFECTS



Adult Chlamydial Conjunctivitis





www.medmicro.info



www.medmicro.info

Yeasts

Candida albicans (rarely other candidae)

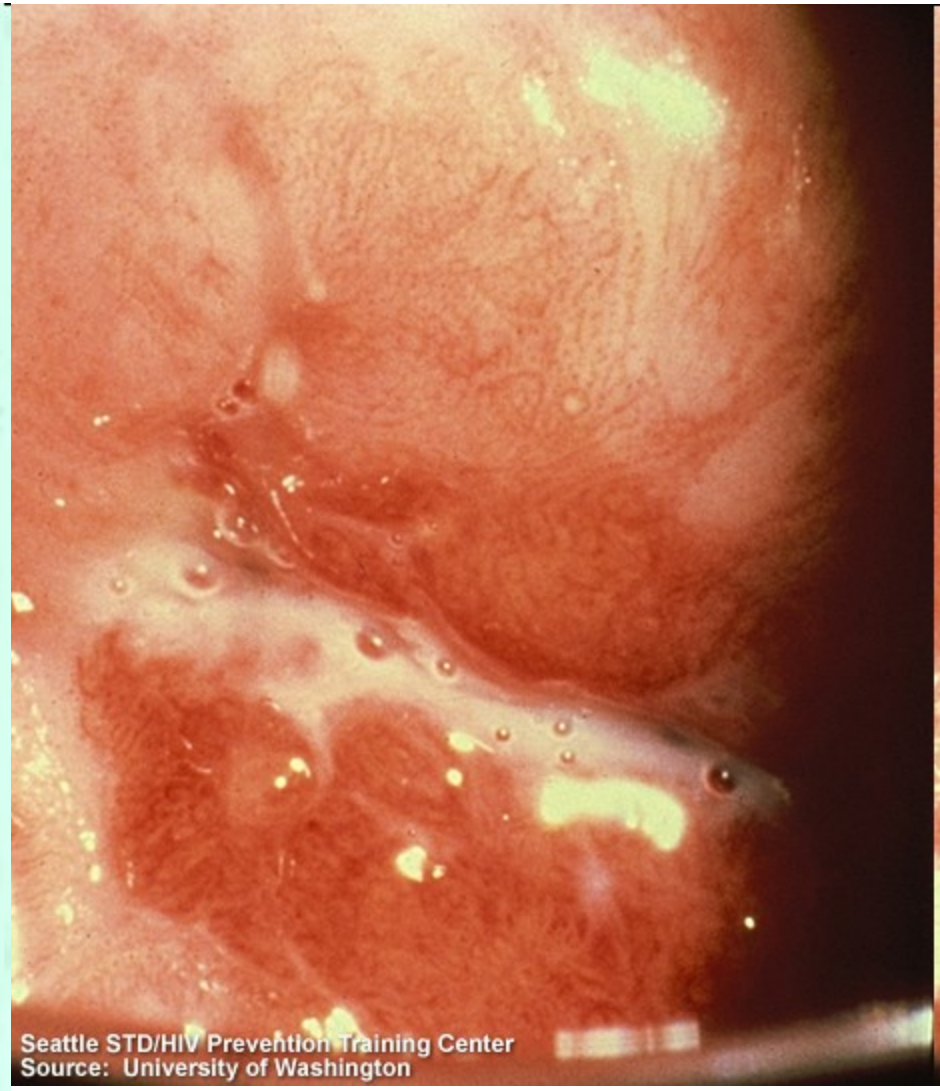
♂: balanoposthitis

♀: **vaginal mycosis** (candidosis,
vulvovaginitis)

Therapy: topical imidazoles (clotrimazole)
systemic triazoles (fluconazole)

Lab. dg: microscopy
culture (Sabouraud agar)

Trichomonas vaginalis



© CDC

Seattle STD/HIV Prevention Training Center
Source: University of Washington

<http://depts.washington.edu>

Trichomonads

Trichomonas vaginalis (a flagellate)

♂: 0 (rarely urethritis, usually asymptomatic carriers)

♀: **vaginitis**, cervicitis, urethritis

Therapy: metronidazole (both partners must be treated)

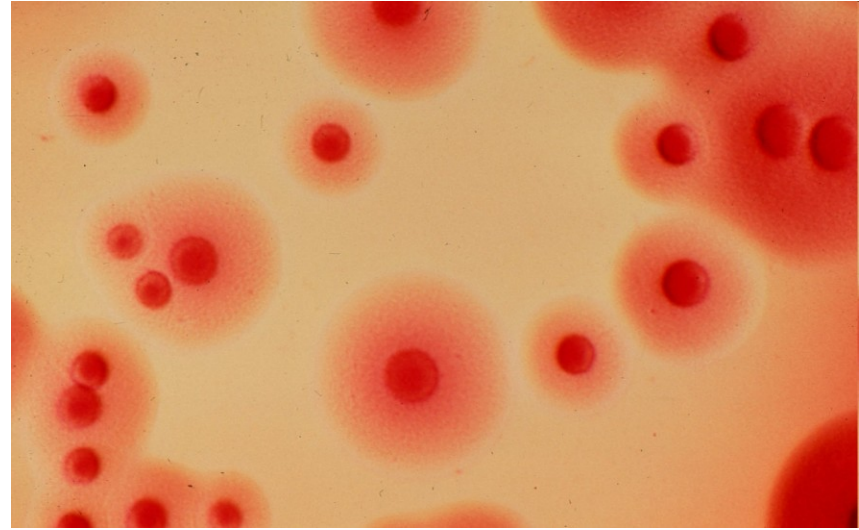
Lab. dg: direct only – **microscopy** (wet mount, Giemsa stained film) & **culture** on special media



Mycoplasmas

Mycoplasma hominis

Ureaplasma urealyticum



♂ & ♀: **urethritis**

♀: **postpartum fever, PID?**

Therapy: macrolides and tetracyclines

Lab. dg: direct only – culture on special media

M. fermentans: www.microbeworld.org

Gardnerellae

Gardnerella vaginalis

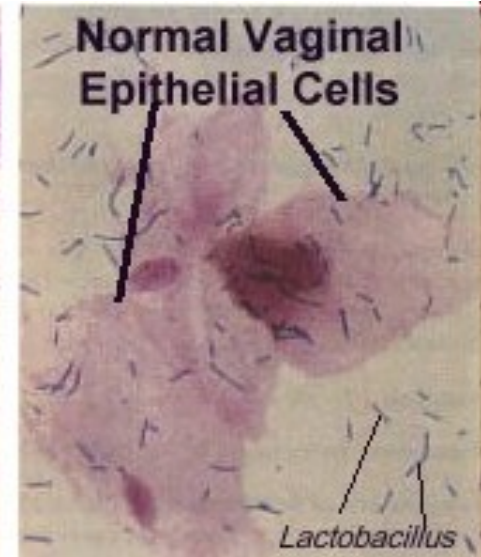
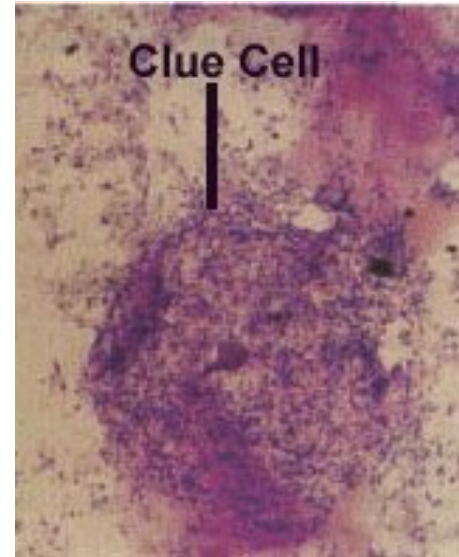
♂: 0

♀: bacterial vaginosis

Therapy: metronidazole

Lab. dg: direct only –

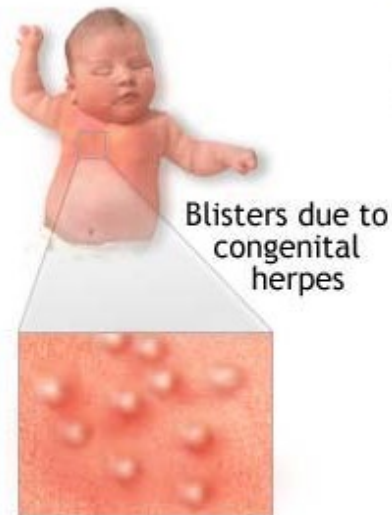
**fish odour test
microscopy (clue cells)
culture on special agar**



<http://www.atsu.edu>

Viral agents of STD – HSV 2

Mother with active herpes infection (although active infection may not be apparent)



ADAM.

Herpes simplex virus 2

♂ & ♀: **herpes genitalis**
primary
recurrent

Therapy: acyclovir

Lab. dg:

- isolation on a cell culture
- detection of DNA by PCR
- serology (useful in primary infection)

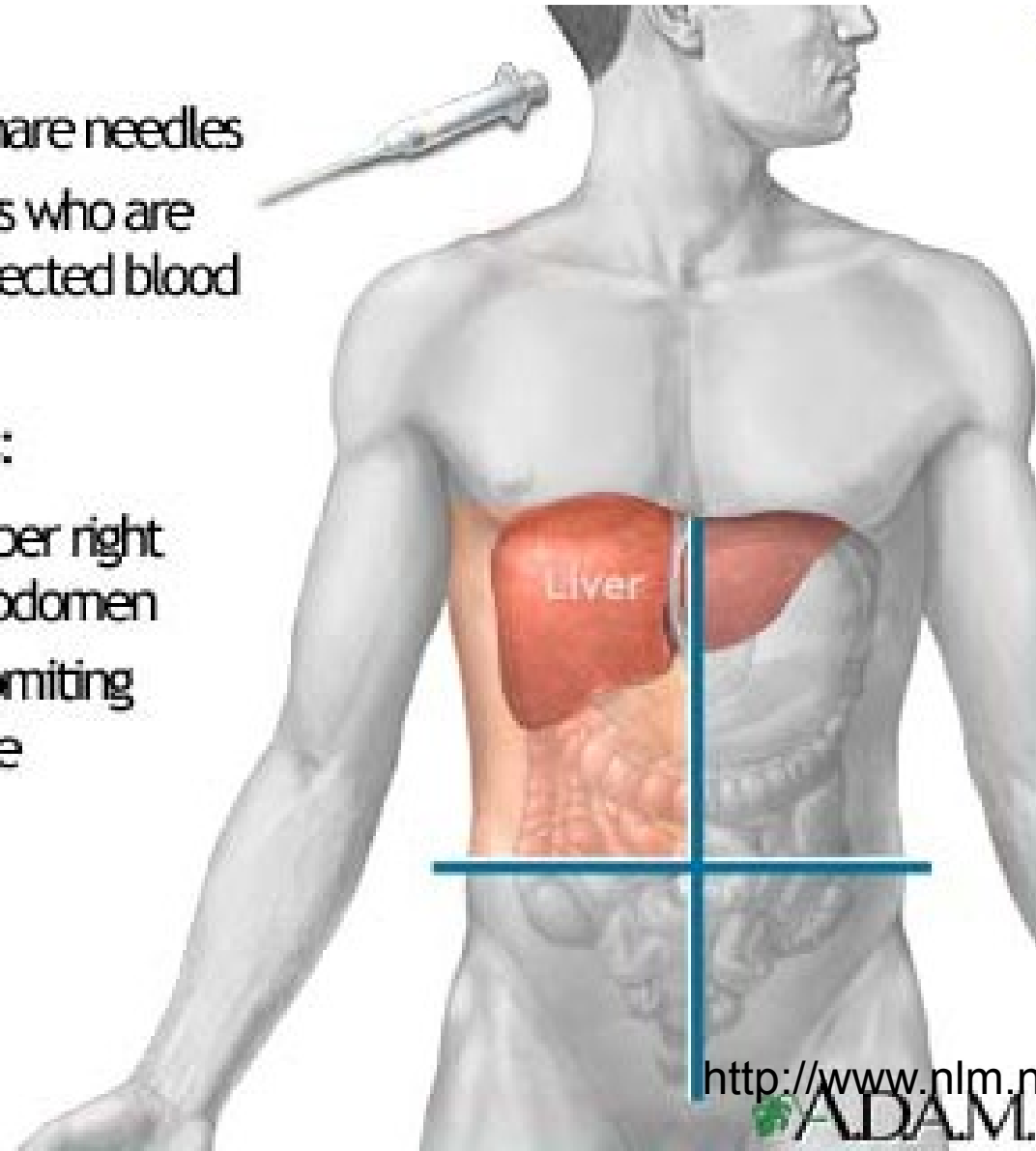
Hepatitis B, C (VHB, VHC)

Risk factors:

- people who share needles
- health workers who are exposed to infected blood

Possible symptoms:

- pain in the upper right quadrant of abdomen
- nausea and vomiting
- loss of appetite
- jaundice
- fatigue
- itching



Hepatitis C virus

(sexual transmission not excluded)

♂ & ♀: **viral hepatitis C**, acute and **chronic**

Therapy:

interferon + ribavirin

Lab. dg:

- detection of viral RNA
- detection of **antibodies** (anti-HCV)

Hepatitis B virus

♂ & ♀: **viral hepatitis B**, acute and chronic

A recombinant vaccine (HBsAg)

Therapy: acute VHB: no medication, rest & diet
chronic VHB: interferon

Lab. dg: detection of laboratory markers

HBsAg, anti-HBs

HBeAg, anti-HBe

anti-HBc

HBV DNA

Viral agents of STD – HIV

Human immunodeficiency virus (HIV-1 and HIV-2)

♂ & ♀: **AIDS** (acquired immunodeficiency syndrome)

Therapy: combination of antiretrovirals
(HAART = highly active antiretroviral treatment)

Lab. dg: detection of **antibodies** (& confirmation of positive findings)

special tests: detection of antigens

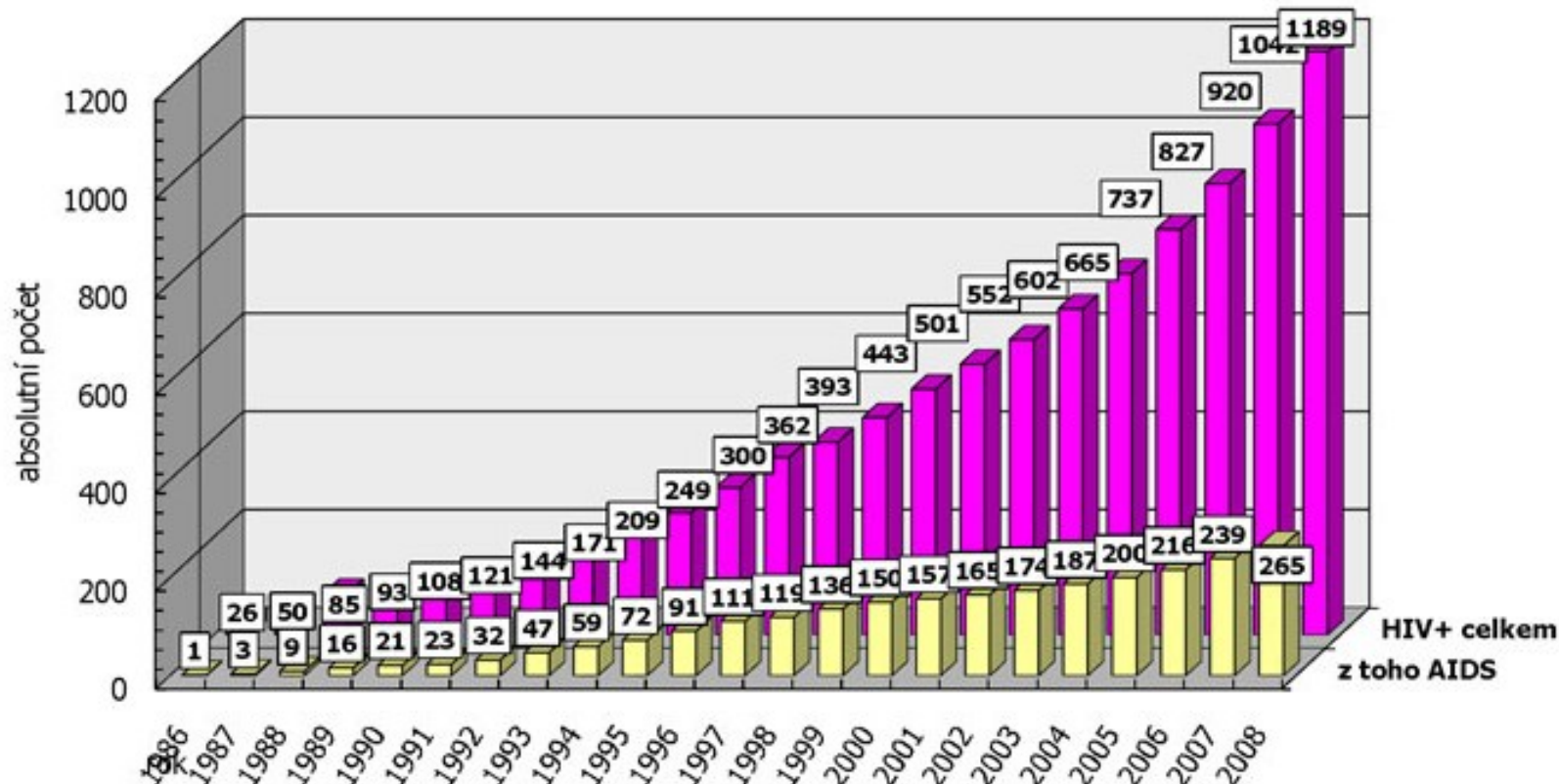
determination of viral load

HIV / AIDS V ČESKÉ REPUBLICE

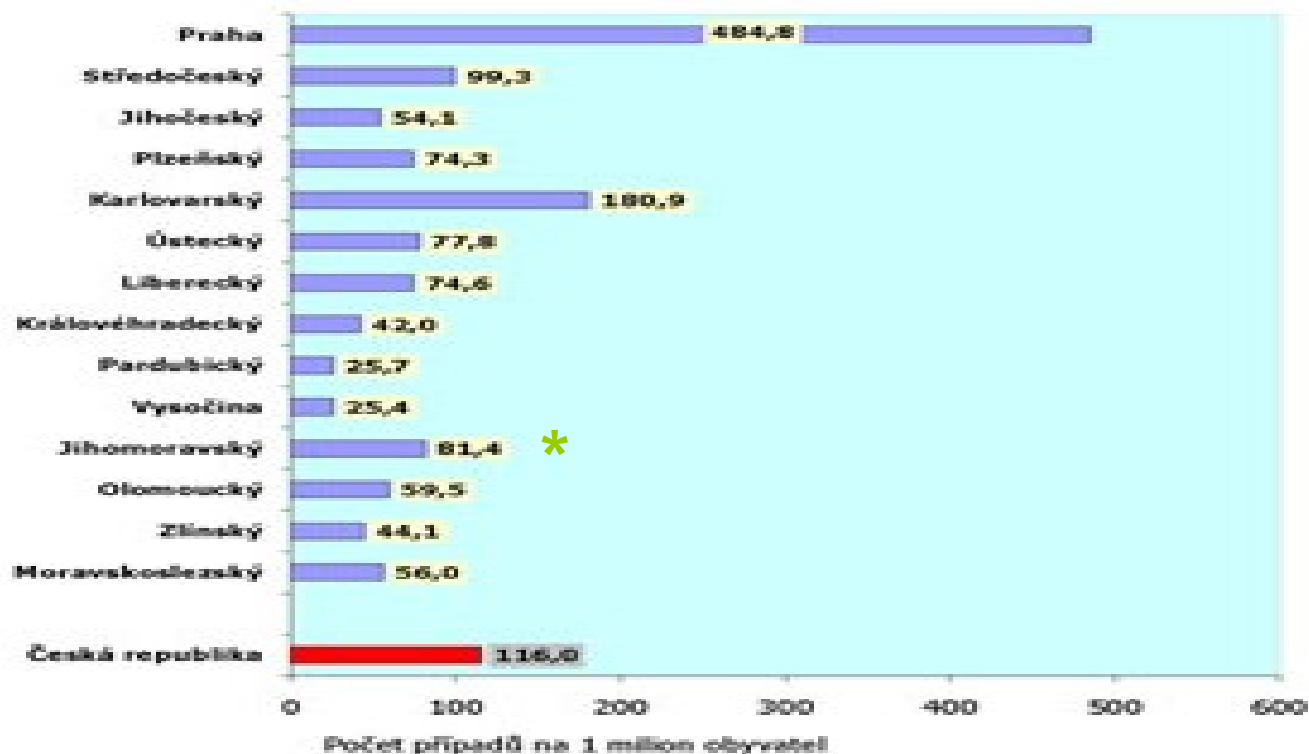
(jen občané ČR a cizinci s trvalým pobytem)

Kumulativní údaje ke dni

31.12.2008



ROZDĚLENÍ HIV POZITIVNÍCH PŘÍPADŮ V ČR PODLE KRAJE BYDLIŠTĚ V DOBĚ PRVNÍ DIAGNÓZY HIV (jen občané ČR a cizinci s trvalým pobytem) Kumulativní údaje ke dni 31.12.2008



Parasitic agents of STD

Sarcoptes scabiei (itch mite)

♂ & ♀: **scabies** (mange)

Therapy: antiscabiotics
(permethrine, lindane)

Lab. dg: microscopy from skin

Phthirus pubis (pubic louse, crab louse)

♂ & ♀: **pediculosis pubis**
(phthiriasis)

Therapy: lindane

Lab. dg: demonstration of lice or eggs





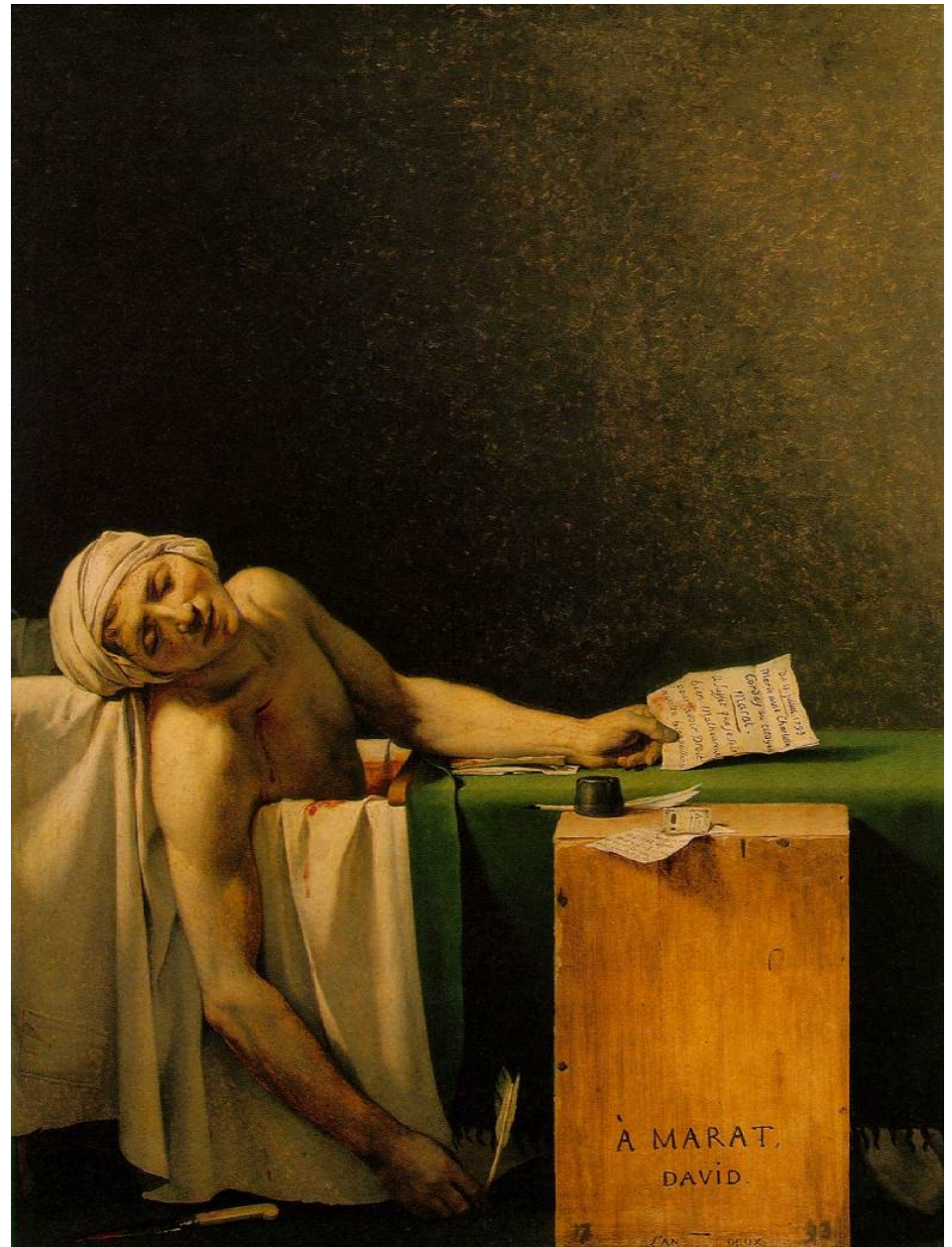
Sarcoptes scabiei

Homework 5 – solution

Jacques-Louis David
(1748-1825):
Death of Marat (1783)

What is the connection between this painting and medicine?

- **Jean Paul Marat**, murdered by Charlotte Corday in 1793, was initially a physician
- He was run through when taking a bath for treatment his skin disorder (probably dermatitis herpetiformis Dühring)



Homework 6

Who is the author of this painting and what is its name?

