

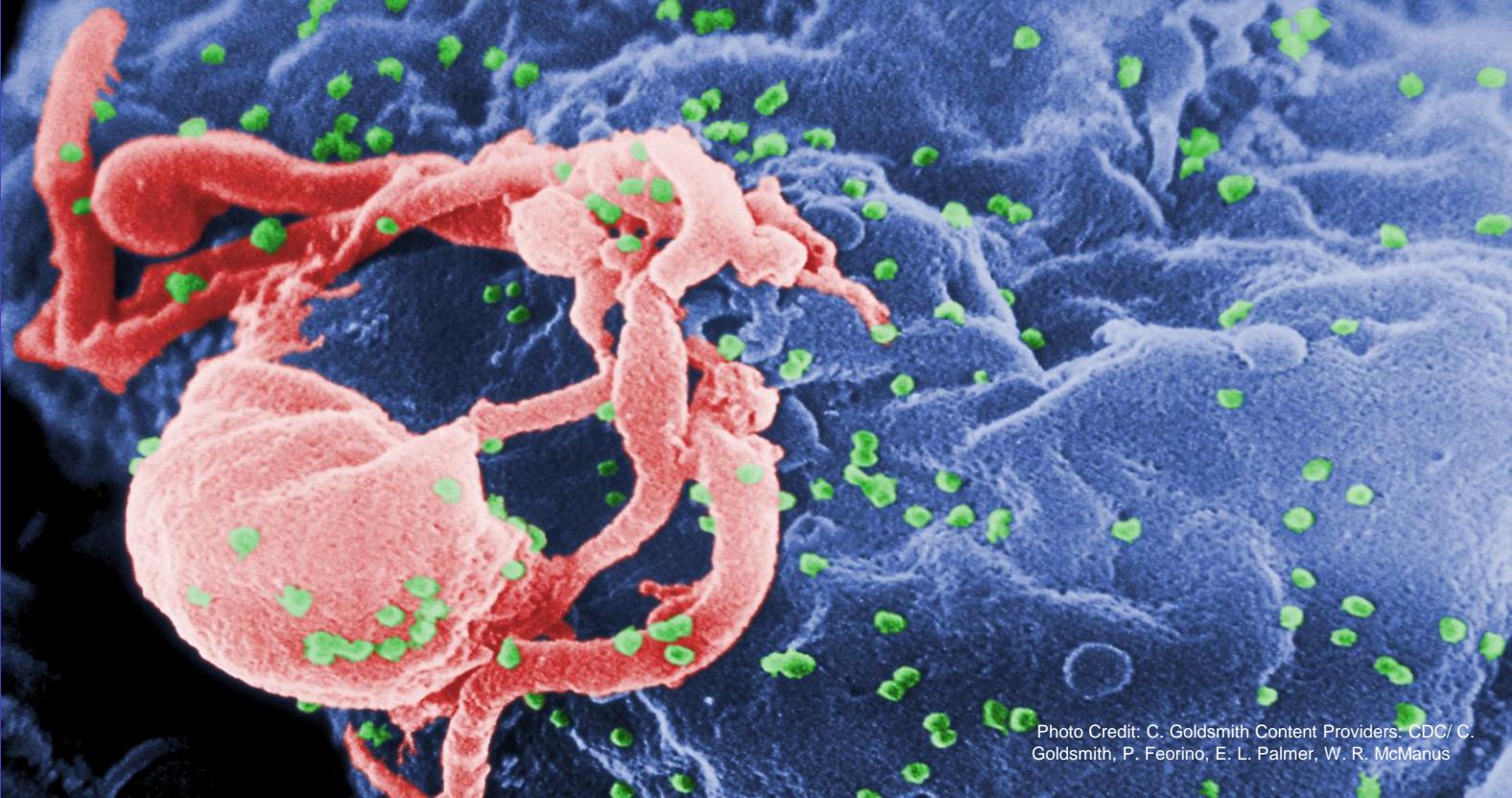
# Ρευματικές εκδηλώσεις ασθενών με HIV λοίμωξη και αντιμετώπιση



<https://prepdaily.org/what-is-the-difference-between-hiv-and-aids/>

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# Δήλωση συμφερόντων



Καμία.



# HIV infection: greek experience

50 nm

HTV5

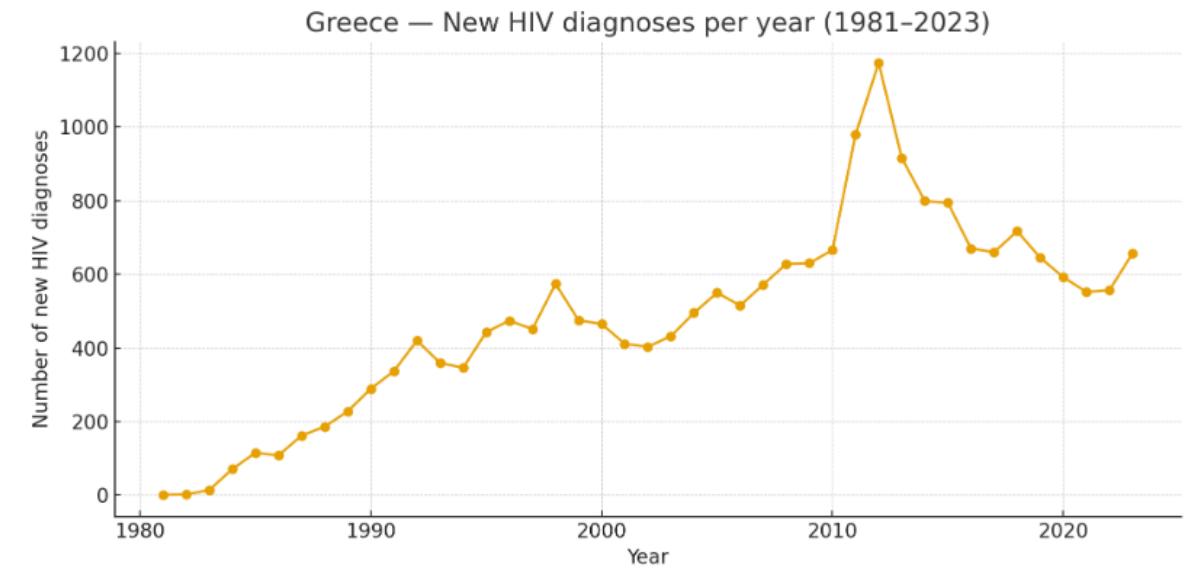
<https://www.nisenet.org/catalog/scientific-image-hiv-infected-cells>

1770 REMF

# HIV infection in Greece: how common is it?

Cumulative reported HIV cases (to Oct 2024): ~21,200.

Adult population in Greece ≈ 8 million → prevalence ~0.26%.



Source: Chat

# HIV infection in Greece: how common is it?

Cumulative reported HIV cases (to Oct 2024): ~21,200.

Adult population in Greece  $\approx$  8 million  $\rightarrow$  prevalence  $\sim$ 0.26%.

RA prevalence in Greece  $\approx$  0.5–0.57% of adults.

Estimated 40,000–45,000 RA patients.  
Prevalence roughly double that of HIV

# Living with HIV HIV IN GREECE



Of HIV infected individuals receive  
HAART in Greece



Of HIV infected individuals  
receive HAART in the EU



Of HIV infected individuals  
receive HAART globally

# HIV in Greece



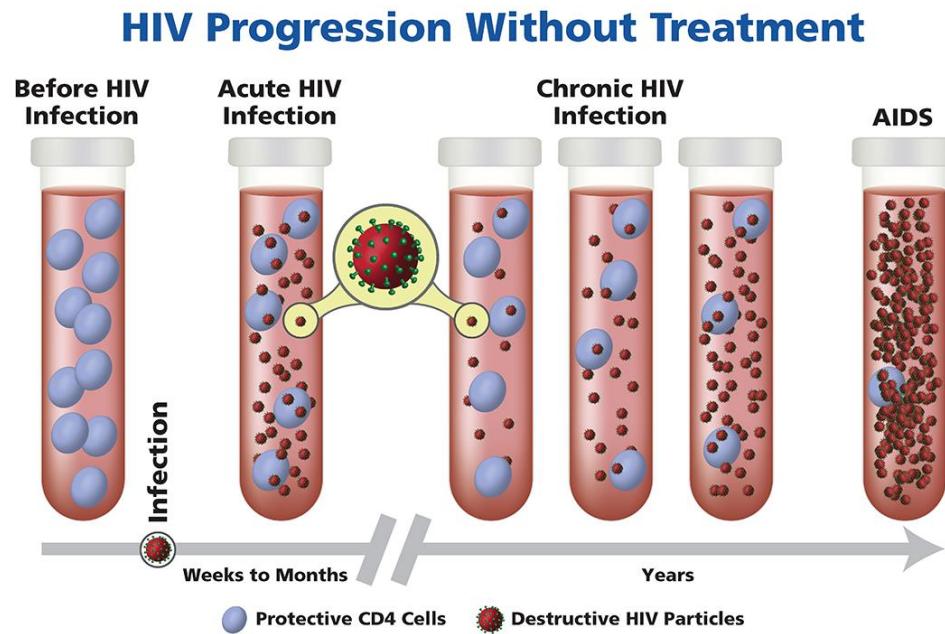
**% of HIV-infected  
individuals  
achieving negative viral  
load**

**30%**

A close-up photograph of a person's hand holding a single red ribbon. The hand is positioned in the lower right foreground, with the fingers wrapped around the ribbon. The background is a soft-focus image of numerous red ribbons, creating a sense of depth and repetition. The lighting is warm and focused on the hand and the ribbon.

# HIV: pathophysiology and natural history

# Stages of HIV infection



For more information, visit [HIVinfo.NIH.gov](http://HIVinfo.NIH.gov).

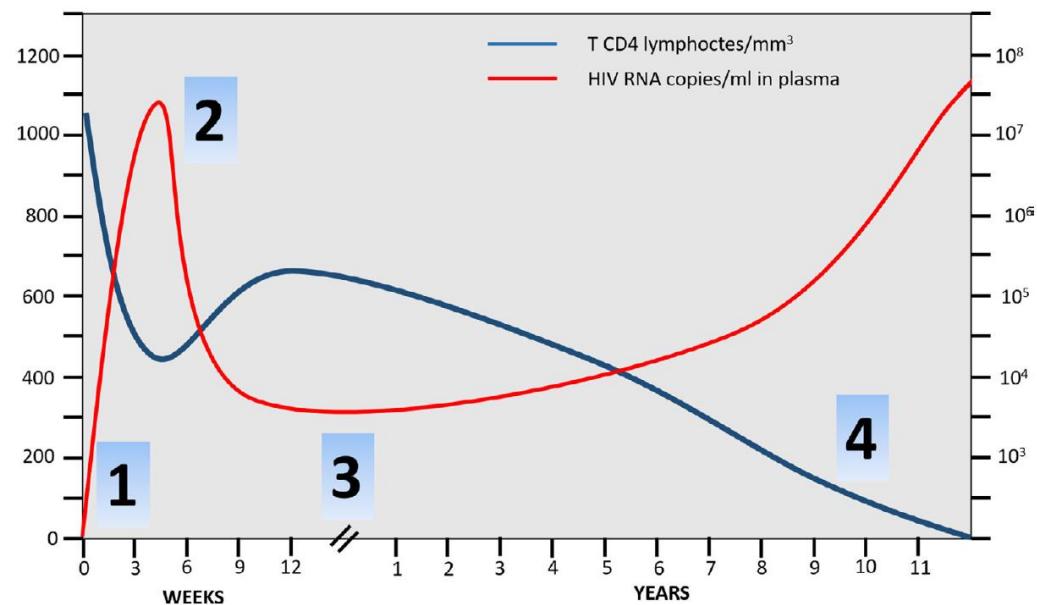
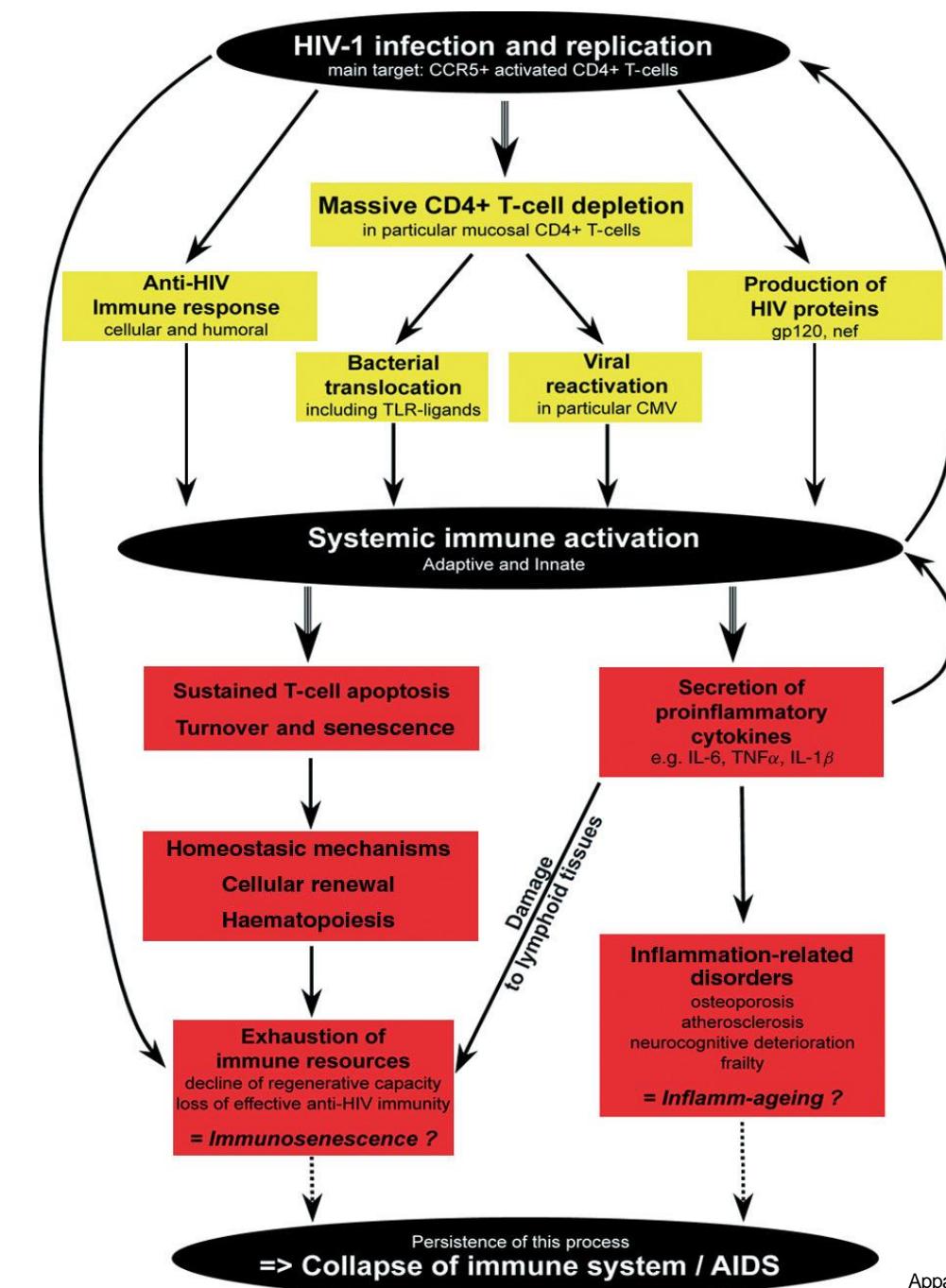
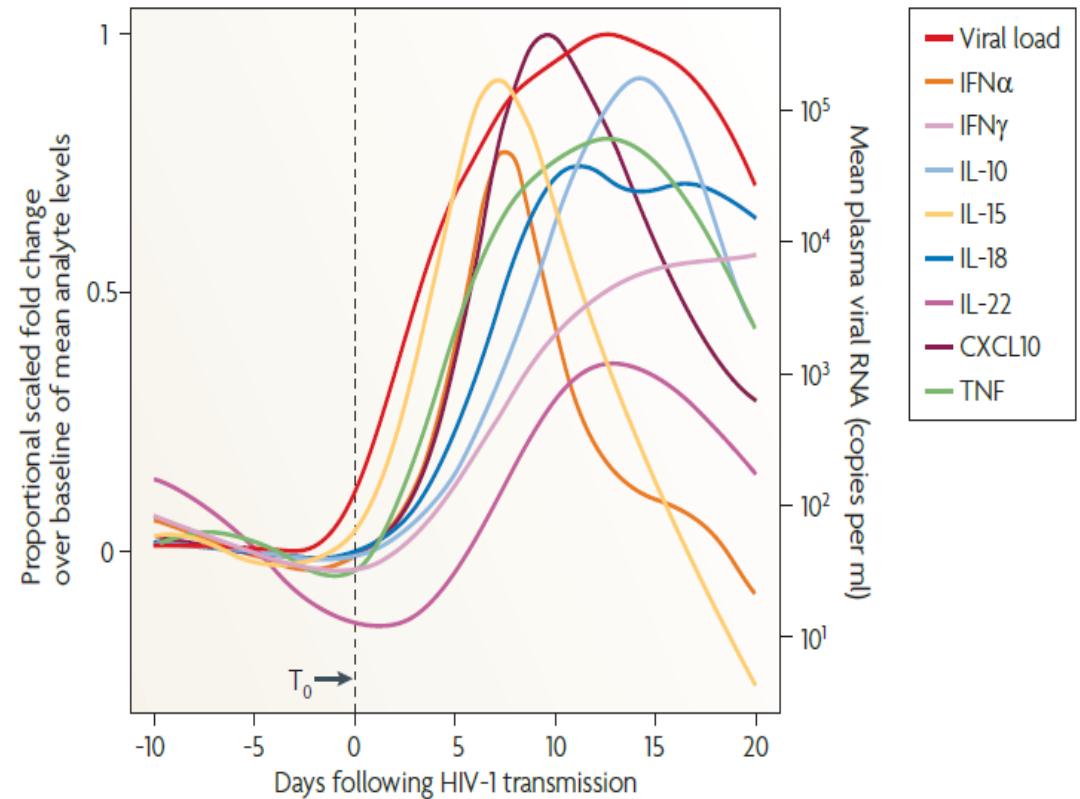


FIG. 2 The natural history of HIV infection.

# HIV and immune activation

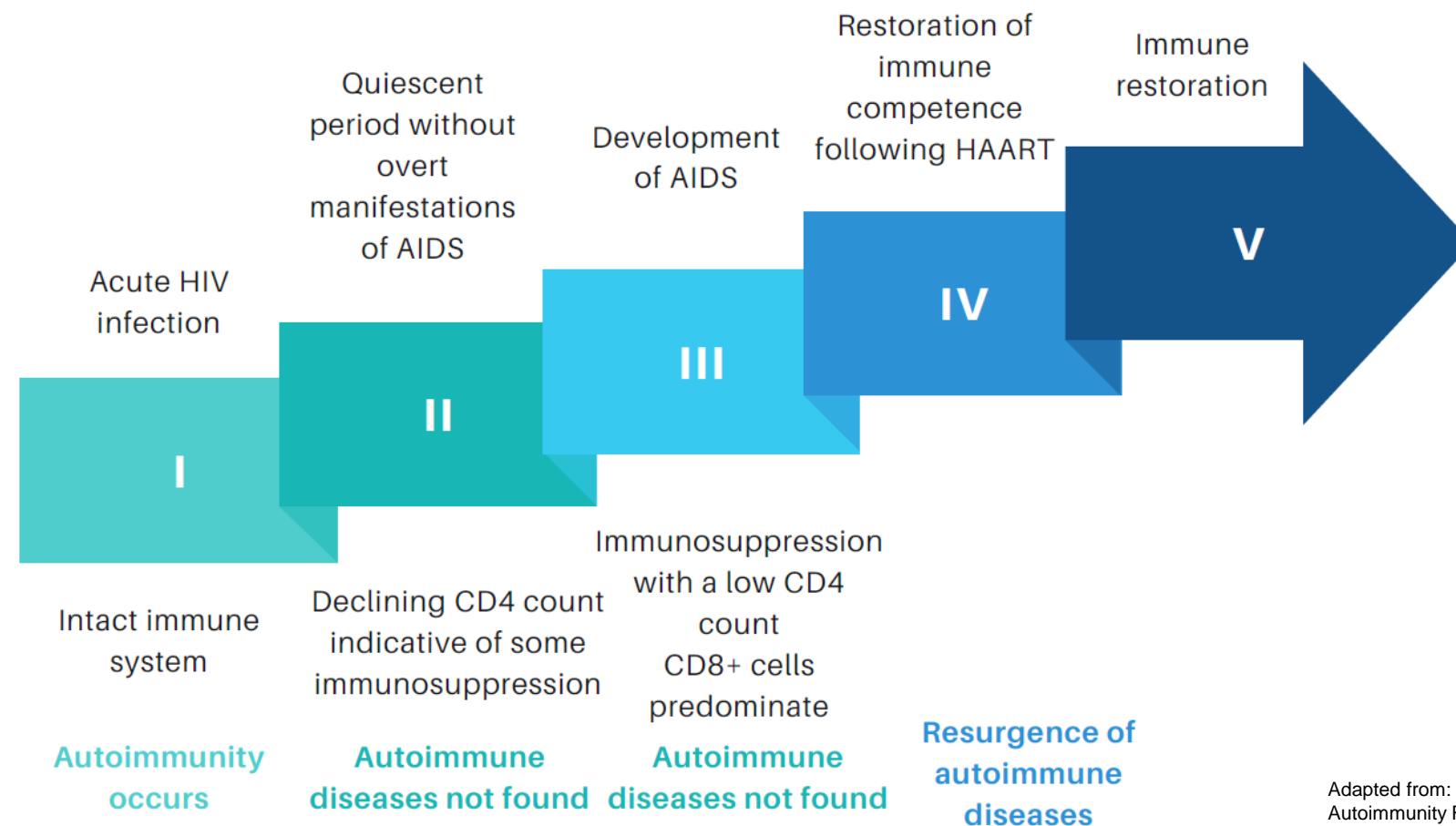


# HIV and immune activation



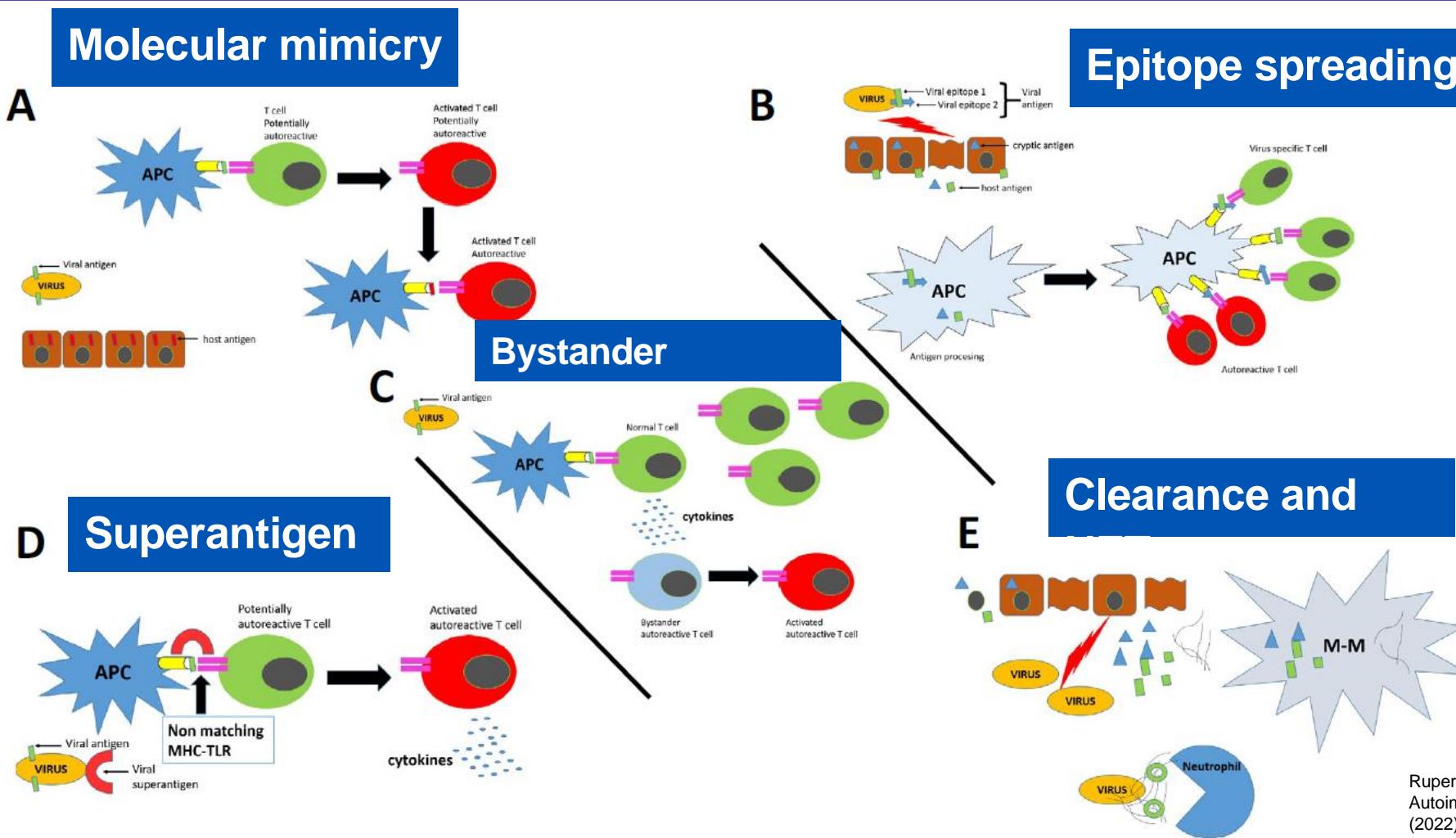
**Figure 3 | The cytokine storm in acute HIV-1 infection.** The relative kinetics of elevation of acute-phase proteins, cytokines and chemokines in the plasma during acute HIV-1 infection. There are two initial waves of cytokines: interleukin-15 (IL-15) and interferon- $\alpha$  (IFN $\alpha$ ), followed by tumour necrosis factor (TNF), IL-18 and IL-10. CXCL10, CXC-chemokine ligand 10. Figure is reproduced, with permission, from REF. 58 © (2009) American Society for Microbiology.

# HIV and autoimmunity



Adapted from: Zandman-Goddard and Schoenfeld,  
Autoimmunity Rev 2002

# HIV and autoimmunity: potential mechanisms



**HHART**

# HAART

## Antiretroviral Medications

### NRTI

Abacavir, ABC ([Ziagen®](#))  
Didanosine, ddI ([Videx®](#), [Videx EC®](#))  
Emtricitabine, FTC ([Emtriva®](#))  
Lamivudine, 3TC ([Epivir®](#))  
Stavudine, d4T ([Zerit®](#))  
Tenofovir alafenamide, TAF  
Tenofovir disoproxil fumarate, TDF ([Viread®](#))  
Zidovudine, AZT/ZDV ([Retrovir®](#))

### NNRTI

Delavirdine, DLV ([Rescriptor®](#))  
Efavirenz, EFV ([Sustiva®](#))  
Etravirine, ETR ([Intelence®](#))  
Nevirapine, NVP ([Viramune®](#), [Viramune XR®](#))  
Rilpivirine, RPV ([Edurant®](#))  
Doravirine, DOR ([Pifeltro®](#))

### PIs

Atazanavir, ATV ([Reyataz®](#))  
Darunavir, DRV ([Prezista®](#))  
Fosamprenavir, FPV ([Lexiva®](#))  
Indinavir, IDV ([Crixivan®](#))  
Nelfinavir, NFV ([Viracept®](#))  
Ritonavir, RTV/r\*\*([Norvir®](#))  
Saquinavir, SQV ([Invirase®](#))  
Tipranavir, TPV ([Aptivus®](#))

### INSTIs

Bictegravir, BIC ([Bictarvy®](#))  
Dolutegravir, DTG ([Tivicay®](#))  
Elvitegravir, EVG ([Vitekta®](#))  
Raltegravir, RAL ([Isentress™](#))

### Fusion Inhibitor

Enfuvirtide, ENF/T-20 ([Fuzeon®](#))

### Entry Inhibitor

Maraviroc, MVC ([Selzentry®](#))  
Ibalizumab ([Trogarzo®](#))

### PK Enhancer

Cobicistat, COBI/c ([Tybost®](#))  
Ritonavir, RTV/r ([Norvir®](#))

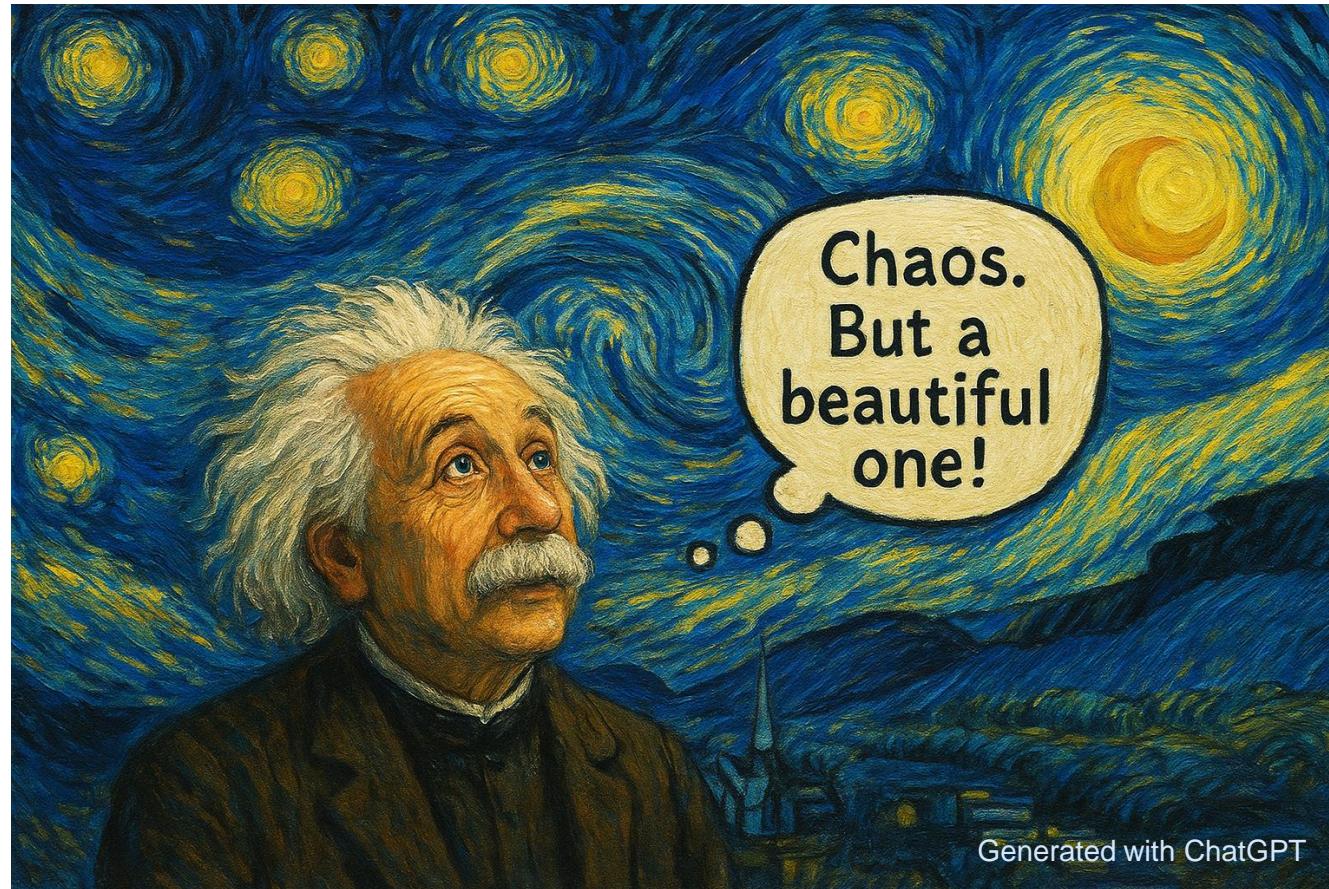
**Plus at least 22 FDA approved**

# HAART...

Side effects

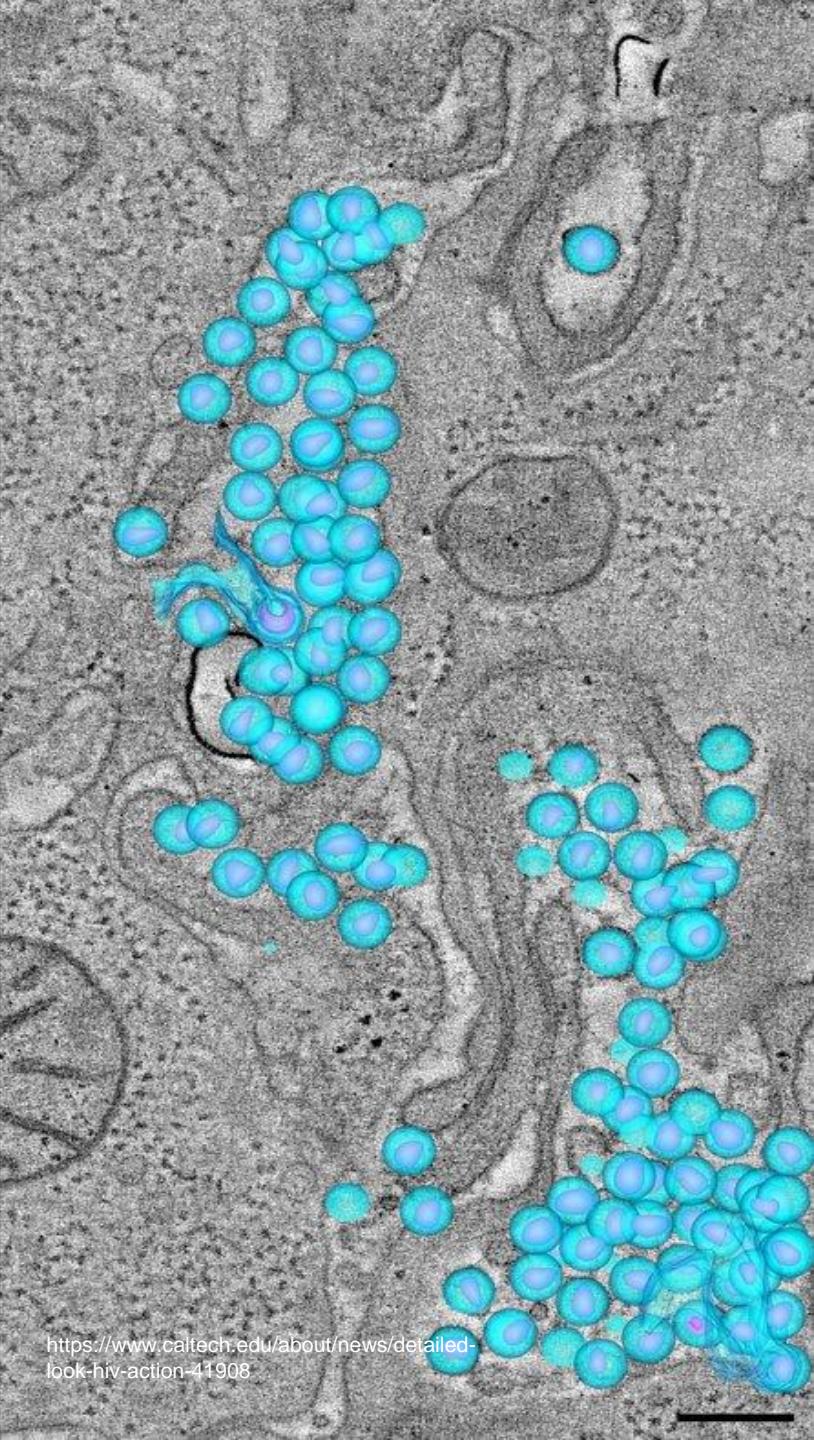
Immune  
reconstitution

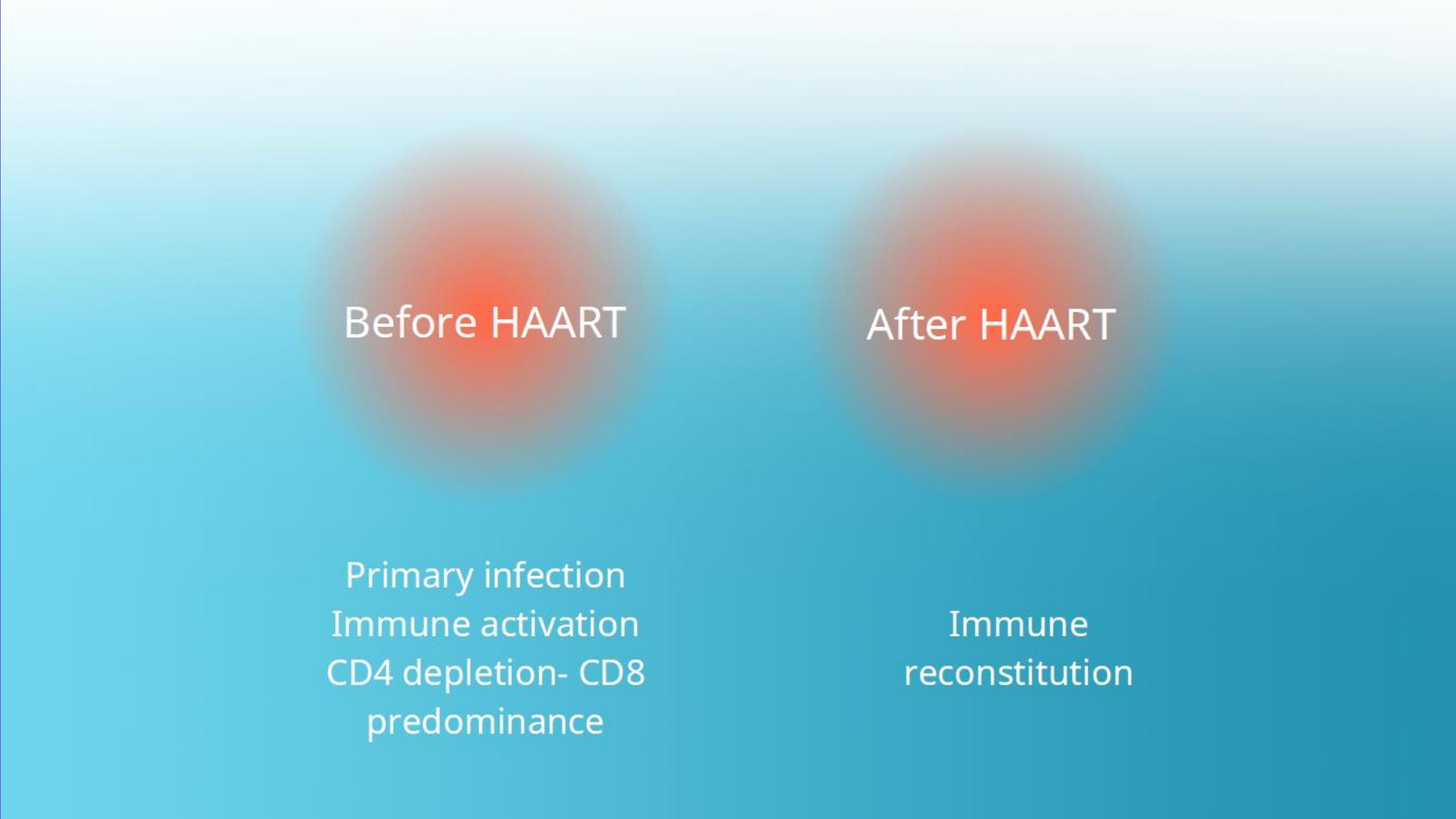
# HAART...



Generated with ChatGPT

# Rheumatic diseases in HIV- infected individuals





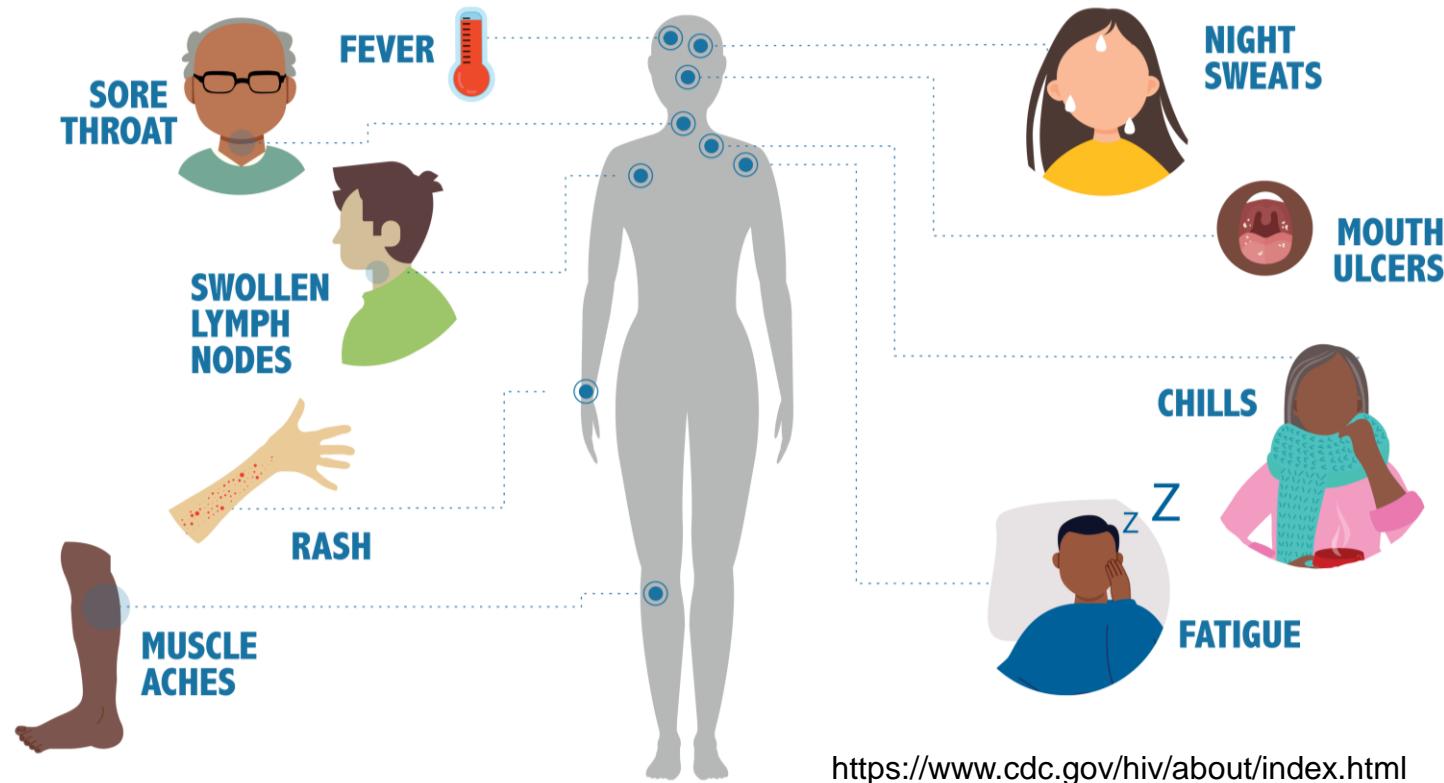
Before HAART

Primary infection  
Immune activation  
CD4 depletion- CD8  
predominance

After HAART

Immune  
reconstitution

# HIV infection: Symptoms



# HIV-associated arthritis

Symmetric polyarthritis resembling seronegative RA

Always self-limiting

Asymmetric oligoarthritis (transient, more common form, knees, ankles)

Non deforming

Monoarthritis

Inflammatory

ANA-, RF-, HLA B27-

A kind of reactive arthritis?

# Painful articular syndrome

Common (10%)

Late stages of infection

Transient (2-24h)

Extremely painful

Large joints (knees, shoulders, elbows)-  
small joints less common

No signs of inflammation

# DILS (diffuse infiltrative lymphocytosis syndrome)

Resembles **Sjogren's** syndrome

Salivary gland swelling

Chronic sicca symptoms

Extraglandular manifestations: lymphocytic interstitial pneumonitis (LIP)

**But:**

Negative for anti-Ro/SSA and anti-La/SSB

CD8+ infiltration of glandular tissue.

Pre-HAART era manifestation

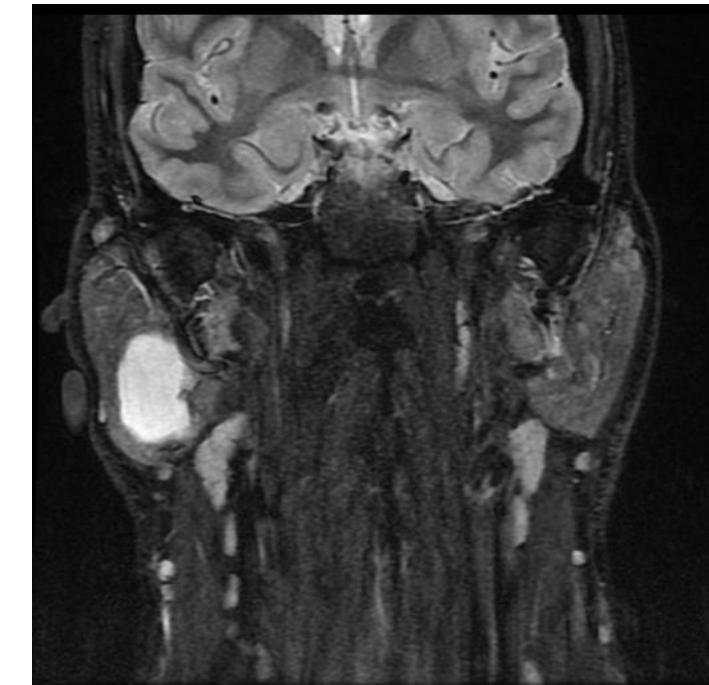
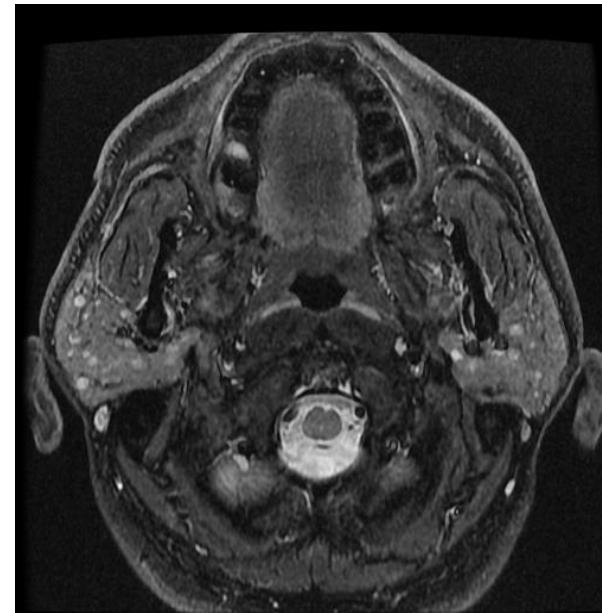
Effective HAART often improves symptoms, but DILS may relapse even with adequate therapy

# DILS

a



b



# IRIS: Immune reconstitution inflammation syndrome

An overwhelming inflammatory response linked to rapidly recovering immune system

Up to 30% of HIV-infected patients initiating HAART

Clinical deterioration following HAART initiation, despite lowering HIV-RNA levels and increasing CD4 T-cells, in the absence of new opportunistic infection or drug toxicity

Uncoupling of innate and adaptive immune responses during microbial infection in the absence of CD4+ T cells

Hyperactivation of innate immune cells when antigen-specific CD4+ T cell numbers are later restored following HAART

# IRIS: Immune reconstitution inflammation syndrome

Deterioration of pre-existing inflammatory or autoimmune disease

Usually self-limiting

Rarely can be severe or life-threatening

# Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

# Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

**Seronegative peripheral oligo arthritis**

**Predominantly involving the lower extremities**

**Usually accompanied by enthesitis**

**Mucocutaneous features common (classically keratoderma blenorrhagicum and circinate balanitis)**

**Urethral symptoms**

**Axial involvement and uveitis uncommon**

# Seronegative spondyloarthritis

ReA

**PsA**

Undifferentiated SpA

Severe Psoriasis

Declining since the introduction of HAART

**Severe and deforming**

**Asymmetrical oligoarthritis- usually lower limbs**

**Onset heralds the development of opportunistic infections**

# Seronegative spondyloarthritis

ReA

PsA

**Undifferentiated SpA**

Severe Psoriasis

Declining since the introduction of HAART

**Achilles tendinitis, dactylitis, low-back pain, plantar fasciitis, ankle pain and shoulder pain**

**Keratoderma blenorrhagicum and circinate balanitis common**

**Low frequency of uveitis and axial skeleton involvement**

**Psoriasiform skin rashes**

# Seronegative spondyloarthritis

ReA

PsA

Undifferentiated SpA

**Severe Psoriasis**

Declining since the introduction of HAART

**Severe form**

**Guttate, inverse and erythrodermic types  
most common**

# RA

Coincidence?

HIV arthropathy?

Immune reconstitution?

Positive RA serology (RF/ACPA) in HIV patients without arthritis

Patients with established RA improve with immunodeficiency secondary to HIV

# Vasculitis

Rare

PAN (milder)

Any size vessel can be affected

ANCA in 13-42% of HIV pts

ANCA vasculitis extremely rare

# Suspect HIV:

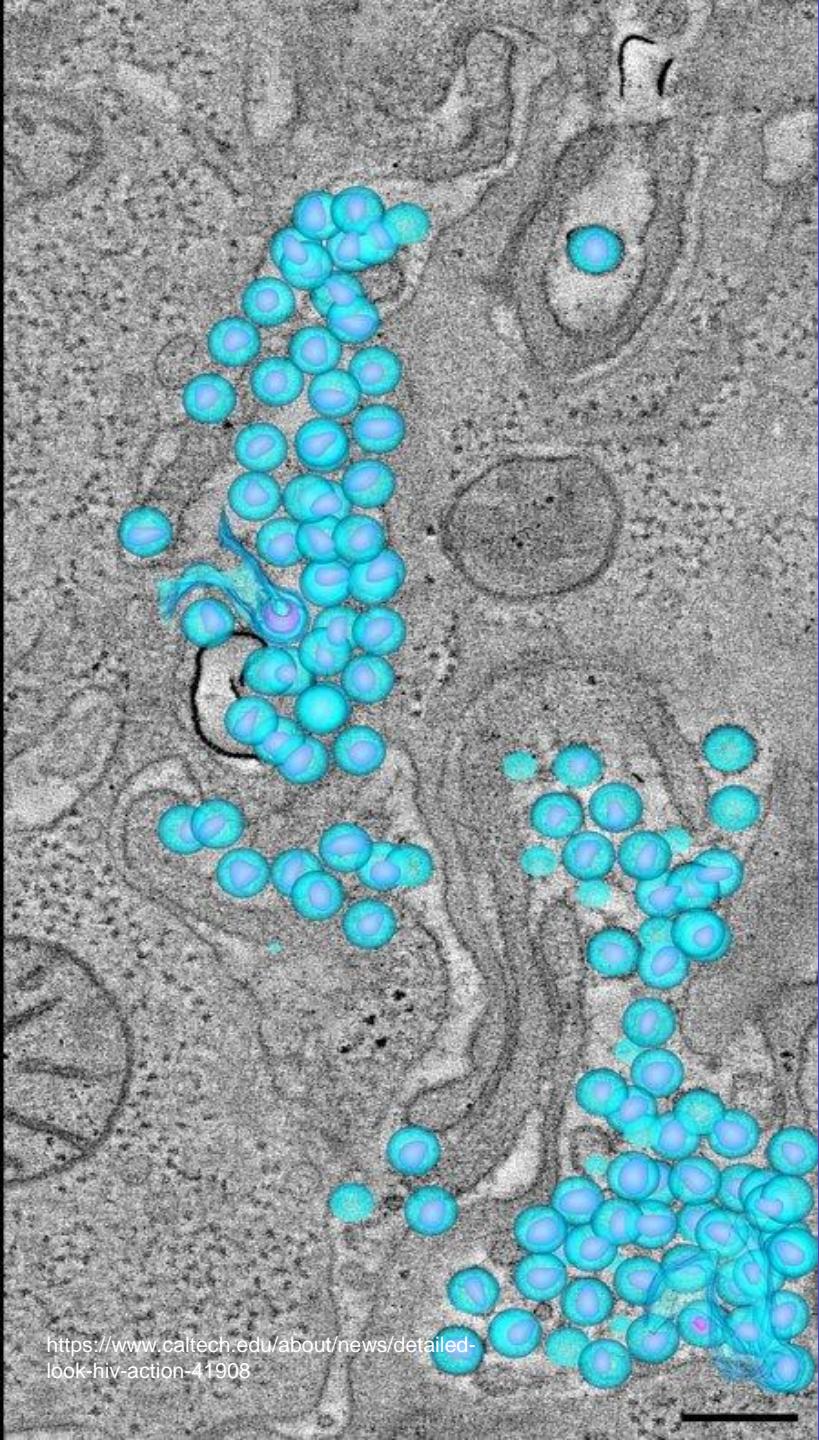
Sexually acquired reactive arthritis or reactive arthritis with unknown mode of acquisition

Keratoconjunctivitis sicca symptoms in the absence of anti-Ro or anti-La antibodies

Atypical lupus (normal complement)

Vasculitis

Unexplained autoantibodies



# Treatment

# General

Depends on whether on HAART or not

Many symptoms/ syndromes are self-limiting and do not warrant chronic treatment

Great caution if the patient is immunocompromised

Risk of opportunistic infections

Risk of drug interactions



# Drug interactions

## **Steroids+ Protease inhibitors**

Protease inhibitors affect the P450 cytochrome (CYP3A4)

Glucocorticoid levels may become extremely variable

High risk of Cushing's syndrome

HIV drug interaction checker. University of Liverpool (<https://www.hiv-druginteractions.org>)



Widely used

Elevated risk of AVN, osteoporosis and fractures in the HIV population

Appropriate bone protection should be carefully considered, particularly in those taking ritonavir.

Caution in the concomitant use of intra-articular triamcinolone and ritonavir

Methylprednisolone more appropriate (with dose reduction)

## Costricosteroids

Caution for risk of opportunistic infections

Appear safe when CD4 T-cells > 200/ $\mu$ L and  
undetectable viral load

(If possible) co-treatment with HAART

## Immunosuppressives and biologics

# Immunosuppressives and biologics

Limited experience (case reports and case series)

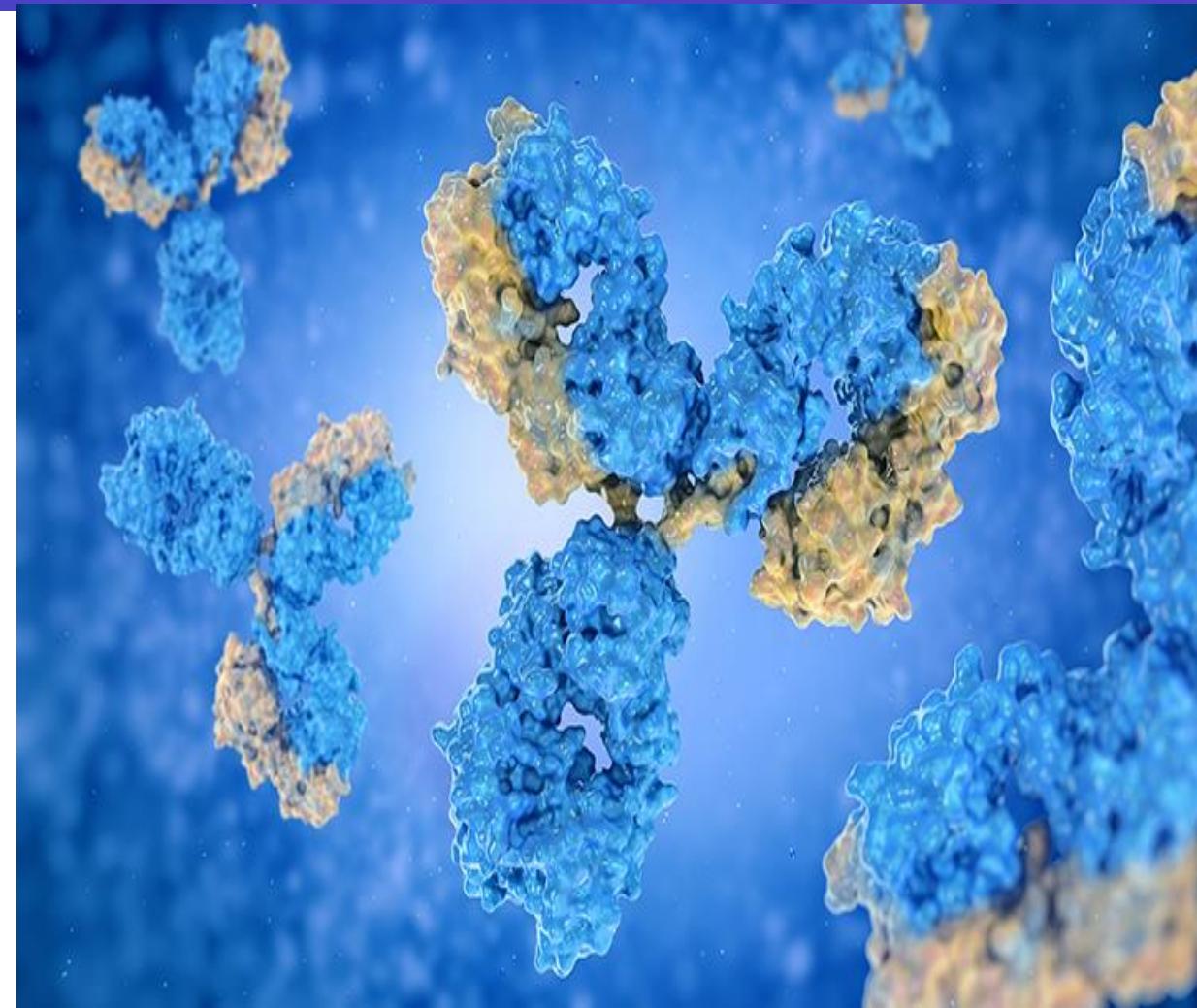
Low quality of data- limited follow-up

179 patients

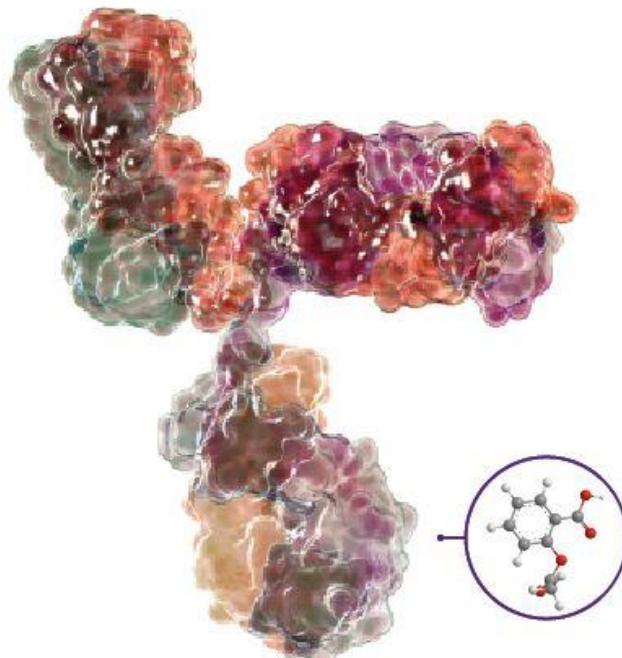
Most commonly used biologic: TNF inhibitors

Generally safe

In some pts transient elevation in HIV viral load after biologic initiation



# Immunosuppressives and biologics



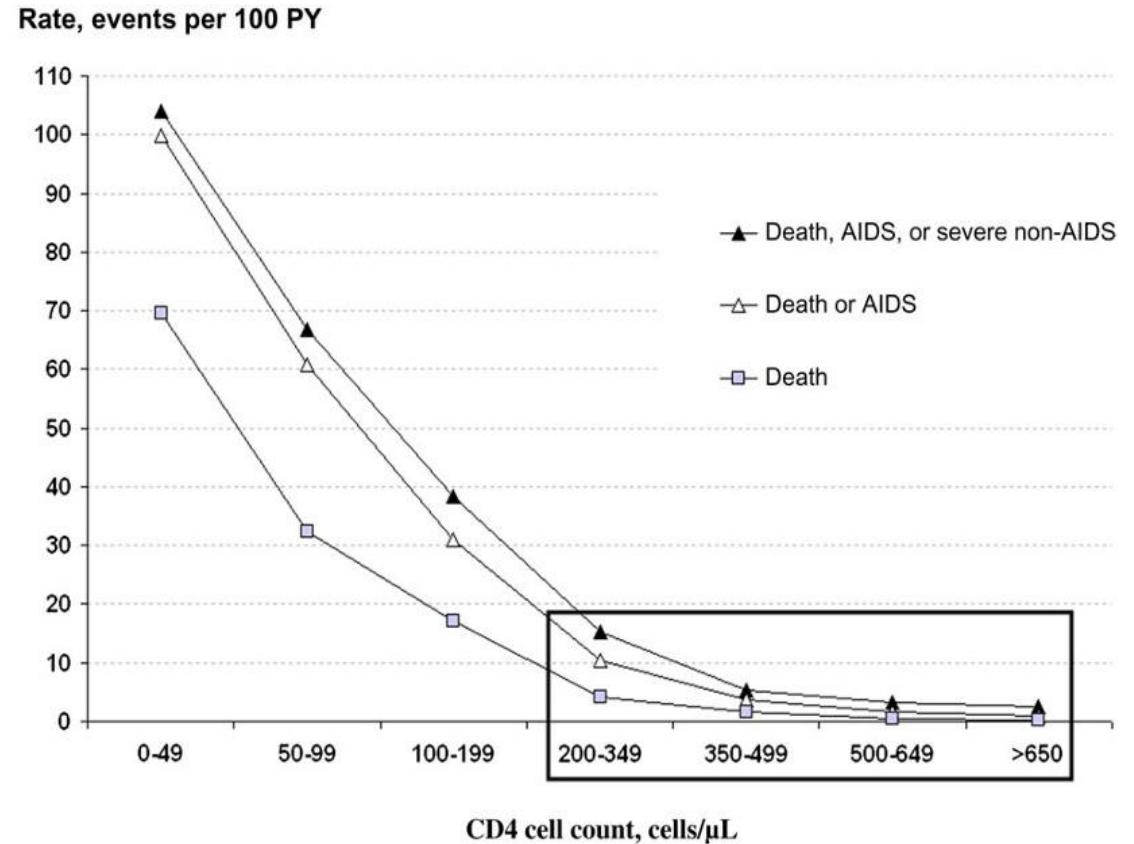
IL17/ 23 biologics- very limited experience (only a handful of case reports)

IL-6 inhibitors only some case reports

JAK inhibitors suppress IFN- $\gamma$  signaling (crucial for defense against viral infections, eg. Herpes)

Anti CD-20 Mabs with caution (example of Hep B reactivation)

# What is the risk of infection in HIV-infected individuals?



# Thank you

