

# Infection HIV en Suisse, Sommes-nous toujours au Top ?

**13.09.2018,  
15:30-16h30**

Professeur associé Matthias Cavassini  
*Service des Maladies Infectieuses*  
*Département de médecine*  
*CHUV, Lausanne*



# Conflict of interests

(Money to the CHUV)

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Research grants: FNS, SHCS, Viiv, Gilead

Travel grants: Gilead

Expert opinion for: Abbvie, BMS, Gilead, MSD, Viiv

# How many women had sex with Charlie Chaplin ?

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**A** 1-5

**B** 5-10

**C** 10-25

**D** >25



# Charlie Chaplin's Sex Life Was So Crazy He Once Diffused A Hostage Situation With His Libido



 **Michelle Nati**  
131.4k views · 10 items · Follow

If the Little Tramp had lived in the 21st century, he'd probably already be in jail.

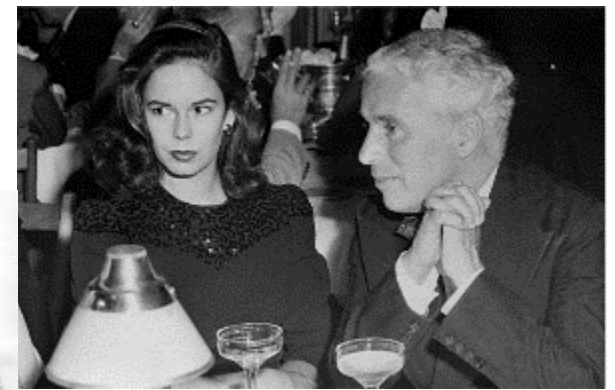
The facts of Charlie Chaplin's sex life are no less scandalous than that of Harvey Weinstein, but because the era in which he lived, they were mostly covered up by studio press agents working overtime to keep people in the dark and the box office receipts pouring in.

It was no secret in Hollywood that Chaplin was a comic genius with a predilection for punning, yet his libido only came close to killing his career when he was well in his 50s. When it did, it came crashing down in such a way that he retired from the US and public life altogether.

He did return once, in 1972, when he was given an honorary Oscar. Hollywood returned out to celebrate the man who helped make the industry what it is today—and that, in the era of #MeToo, may very well be the problem.

**Caveat: data from Google Not peer reviewed!**

## Charlie Chaplin Slept With An Estimated 2,000 Women In His Lifetime



# EPIDEMIIOLOGY

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- World
- Switzerland

Without access to HIV treatment, how many years of life are lost in Zimbabwe ?

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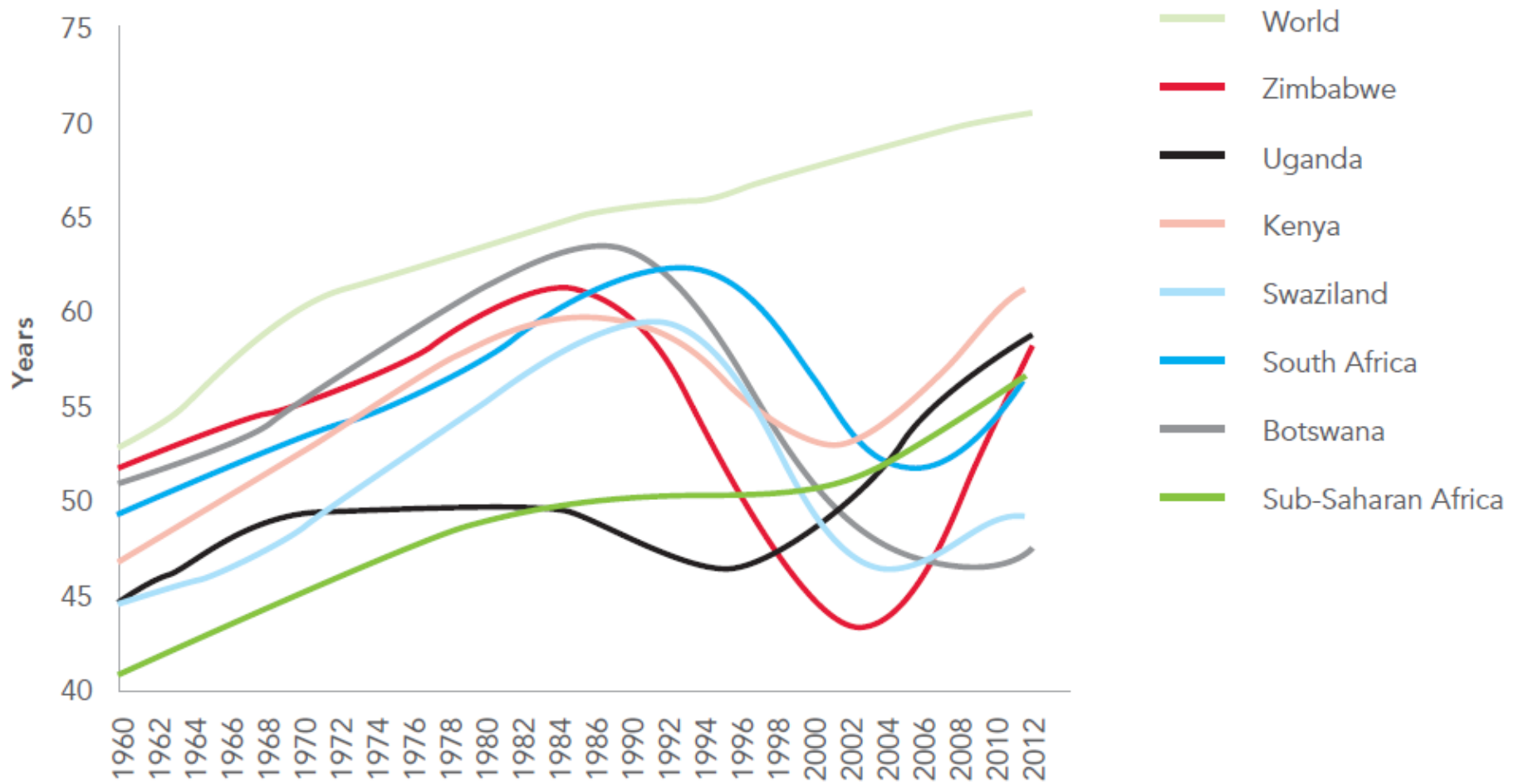
**A.** 5 years

**B.** 10 years

**C.** 15 years

**D.** 20 years

# TRENDS IN LIFE EXPECTANCY DURING THE AIDS EPIDEMIC



Source: The World Bank life expectancy data. <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>. Accessed 15 September 2014.

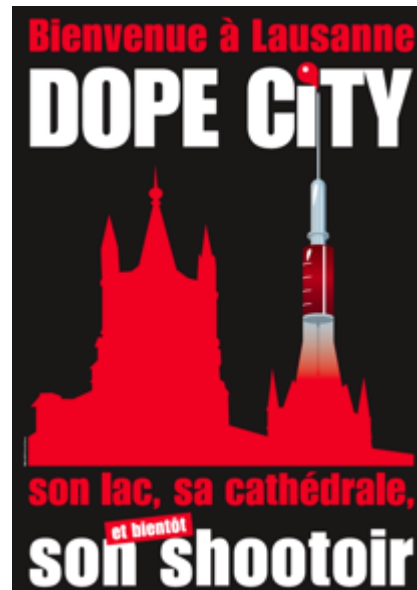
[https://www.ted.com/talks/hans\\_rosling\\_shows\\_the\\_best\\_stats\\_you\\_ve\\_ever\\_seen](https://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen)

In Switzerland, every year 500 to 600 new infections are diagnosed, the acquisition mode is most of all sex.

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**A** True

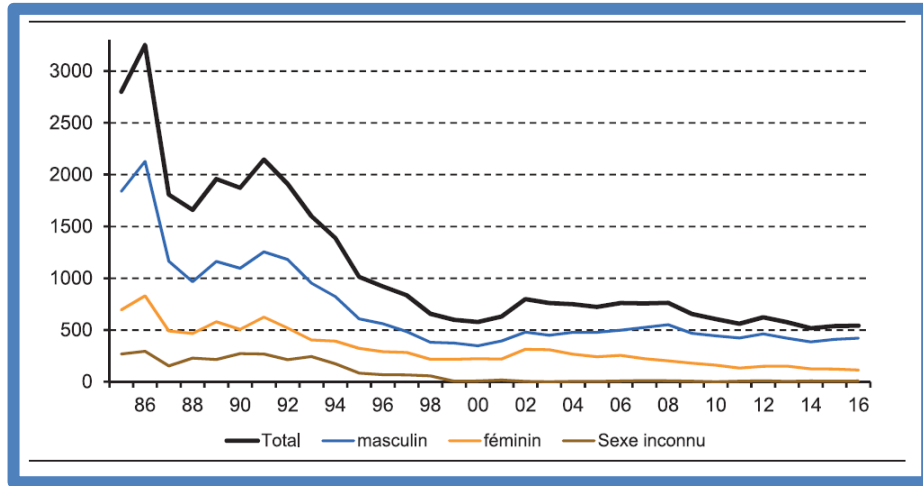
**B** False



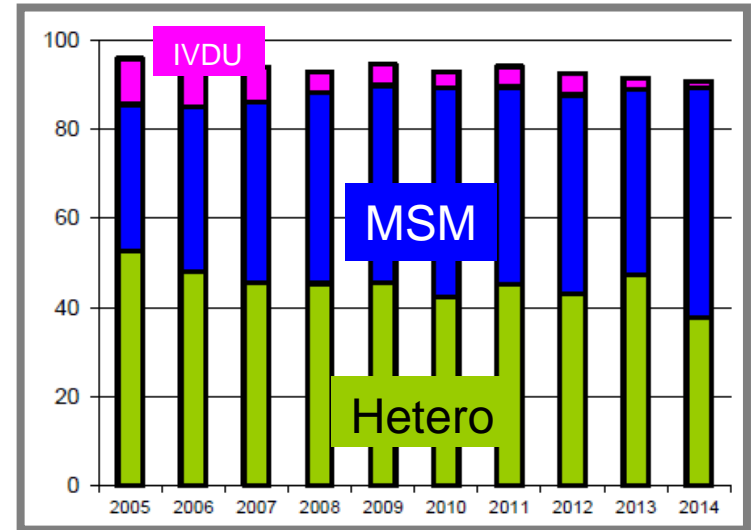


# Epidemiology in

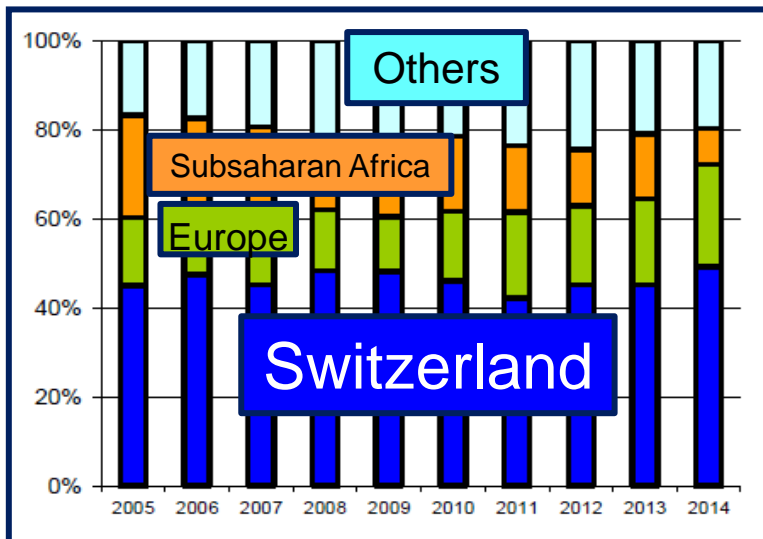
## New HIV diagnosis/year (n)



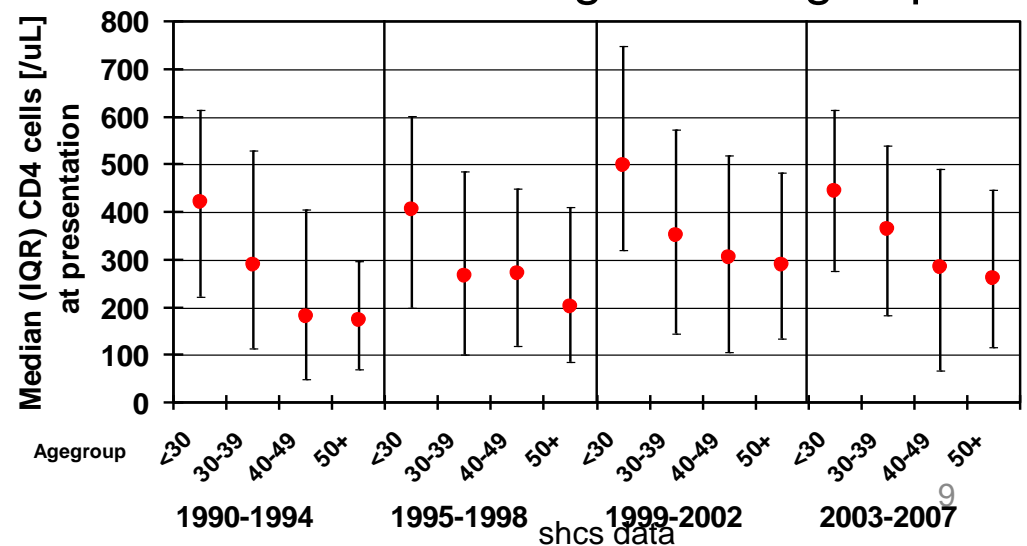
## Who ? (%)



## From where ? (%)



## CD4 count at diagnosis - age - period



Une sérologie EBV vous est demandée pour un syndrome mononucléosique, le test revient négatif.  
Comment rendez-vous le résultat ?

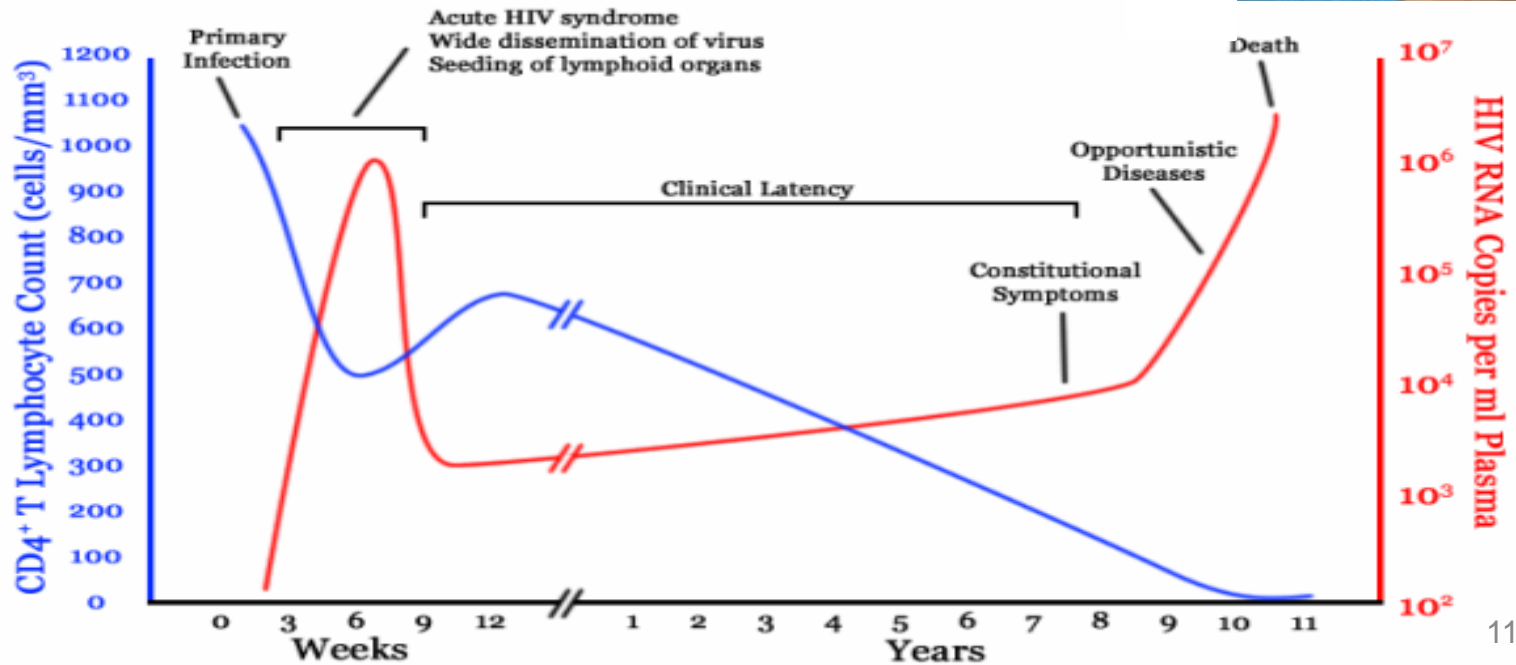
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**A** Interprétation du résultat EBV seul

**B** Suggestion à chercher d'autres causes de syndrome mononucléosique comme le VIH

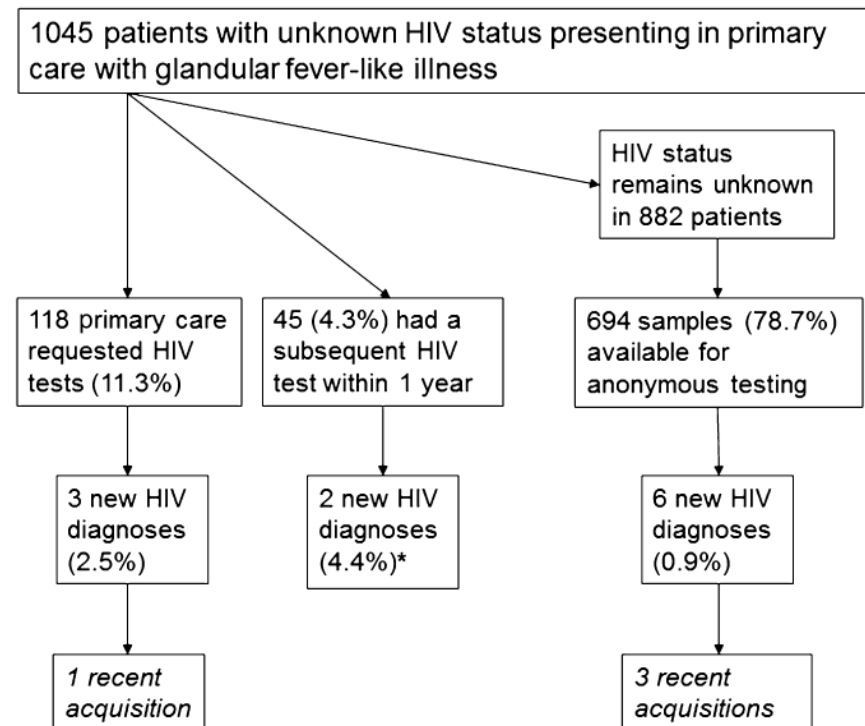
# PATHOGENESIS

Before 2006...



# Diagnosing HIV infection in patients presenting with glandular fever-like illness in primary care: are we missing primary HIV infection?

- 857 cases
- HIV prevalence: 1.3 %
- 73% cases missed (8 of 11)



Une sérologie EBV vous est demandée pour un syndrome mononucléosique, le test revient négatif.  
Comment rendez-vous le résultat ?

---

**A** Interprétation du résultat EBV seul

**B** Suggestion à chercher d'autres causes de syndrome mononucléosique comme le VIH

A patient born in 1942 comes to your clinic. He just came out of the hospital after a Heart infarctus.

Question: Should doctors test him for HIV ?

---

**A.** Yes

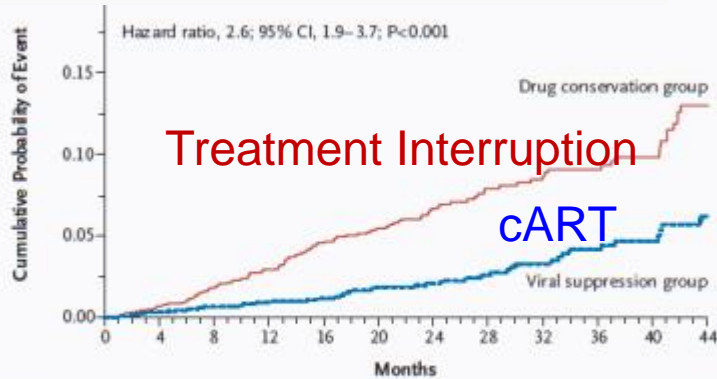
**B.** No

# CD4+ Count-Guided Interruption of Antiretroviral Treatment

2006...

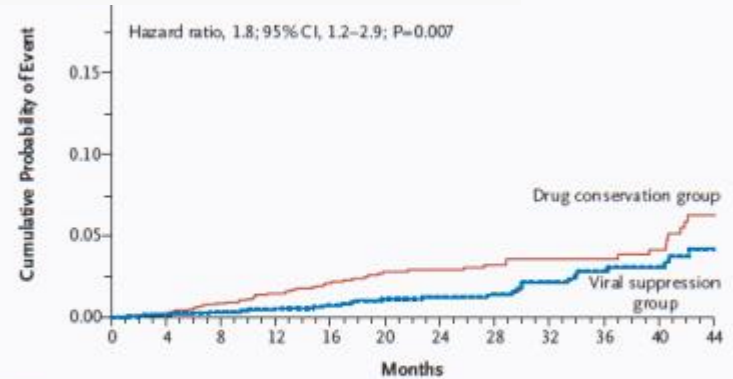
The Strategies for Management of Antiretroviral Therapy (SMART) Study Group\*

## A. Opportunistic Disease / death



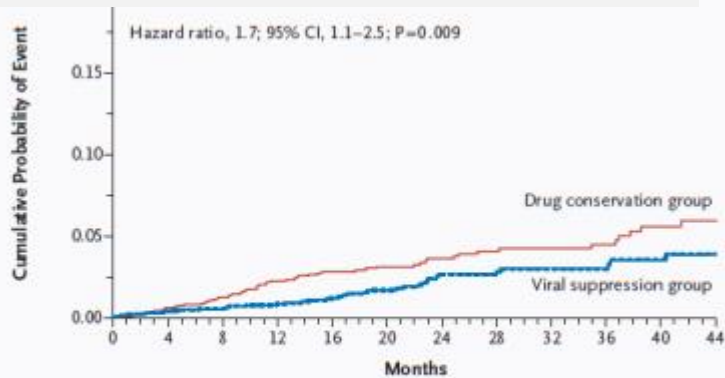
No. at Risk	0	4	8	12	16	20	24	28	32	36	40	44
Drug conservation	2720	2074	1666	1301	1040	870	689	540	444	372	280	162
Viral suppression	2752	2081	1695	1310	1077	906	724	572	474	388	288	173

## B. Death from any cause



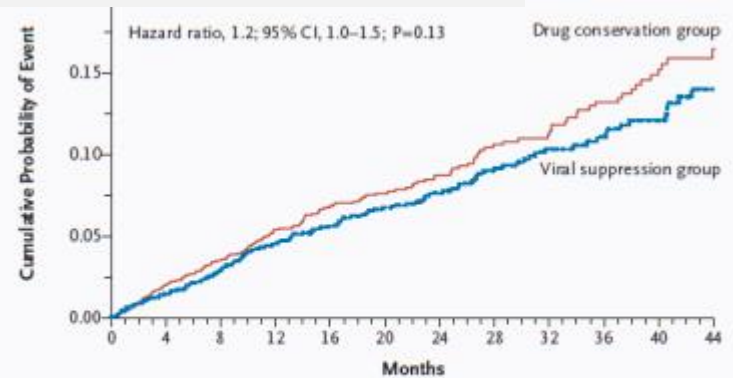
No. at Risk	0	4	8	12	16	20	24	28	32	36	40	44
Drug conservation	2720	2083	1681	1321	1070	893	716	567	462	391	293	169
Viral suppression	2752	2084	1701	1317	1083	915	732	581	481	395	294	175

## C. Major cv, renal or hepatic diseases



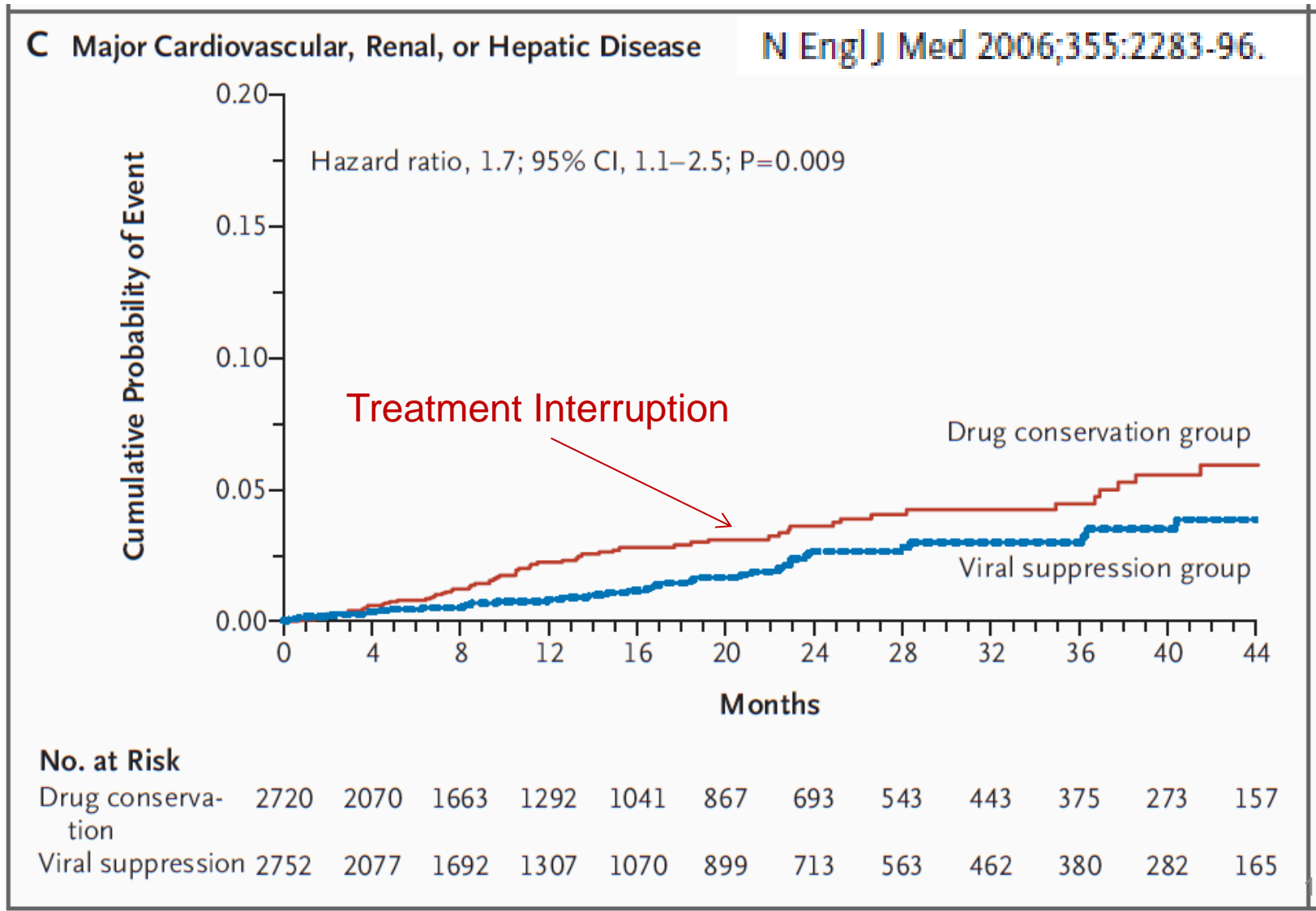
No. at Risk	0	4	8	12	16	20	24	28	32	36	40	44
Drug conservation	2720	2070	1663	1292	1041	867	693	543	443	375	273	157
Viral suppression	2752	2077	1692	1307	1070	899	713	563	462	380	282	165

## D. Grade 4 adverse events



No. at Risk	0	4	8	12	16	20	24	28	32	36	40	44
Drug conservation	2720	2040	1625	1250	993	826	659	509	415	345	251	138
Viral suppression	2752	2053	1650	1249	1011	841	668	526	431	355	258	148

# Stopping HIV treatment increased the risk of cardiovascular events by ~60 %...*not so SMART!*





# The end of AIDS: HIV infection as a chronic disease,

Lancet 2013; 382: 1523-33

After 2006...

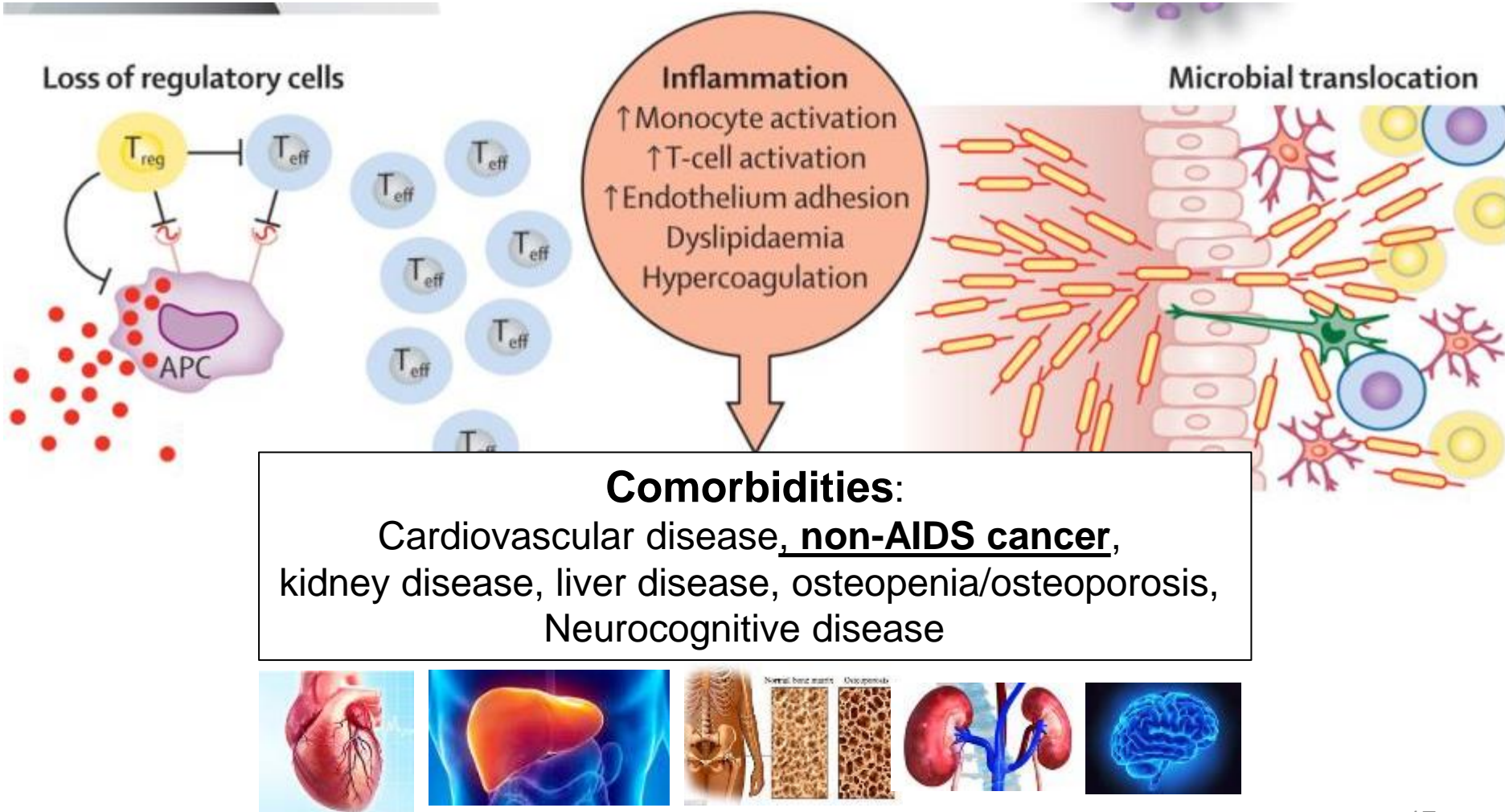
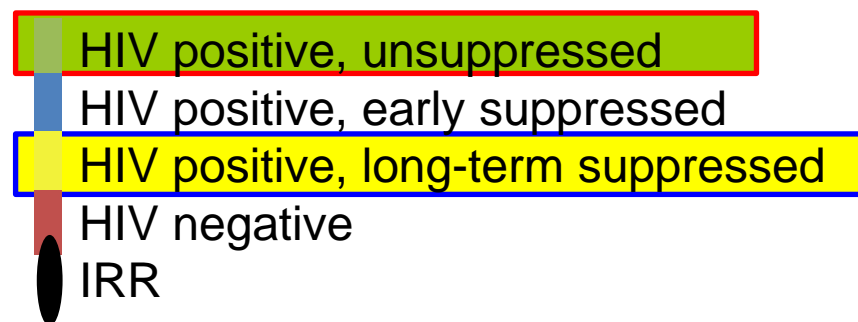
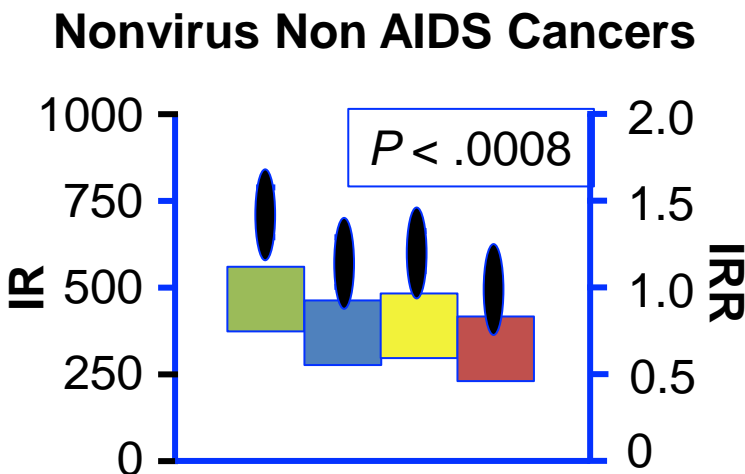
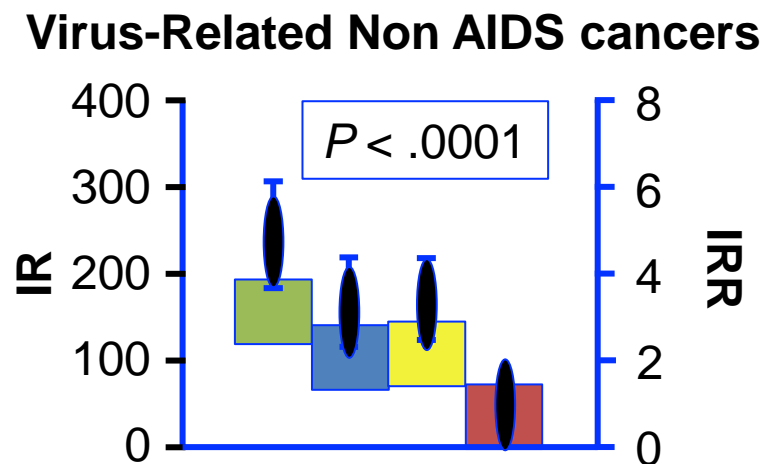
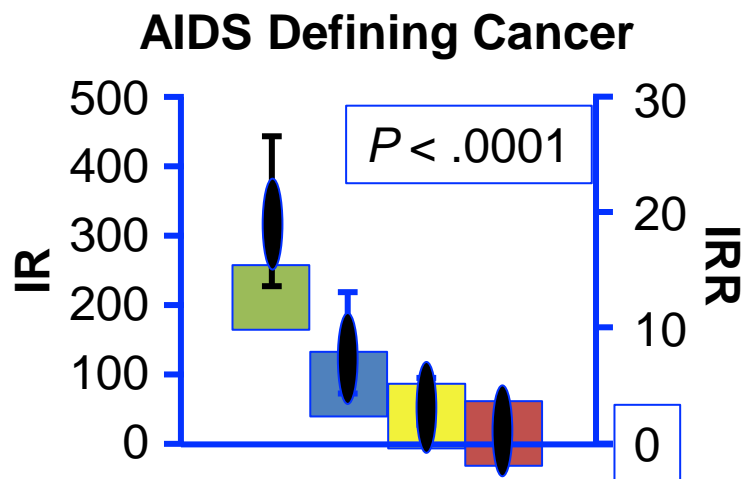


Figure adapted from *Lancet* 2013; 382:1525-33

# HIV-1 RNA Suppression and Cancer



# HIV Infection and the Risk of Acute Myocardial Infarction

Matthew S. Freiberg, MD, MSc; Chung-Chou H. Chang, PhD; Lewis H. Kuller, MD, DrPH; Melissa Skanderson, MSW; Elliott Lowy, PhD; Kevin L. Kraemer, MD, MSc; Adeel A. Butt, MD, MS; Matthew Bidwell Goetz, MD; David Leaf, MD, MPH; Kris Ann Oursler, MD, ScM; David Rimland, MD; Maria Rodriguez Barradas, MD; Sheldon Brown, MD; Cynthia Gibert, MD; Kathy McGinnis, MS; Kristina Crothers, MD; Jason Sico, MD; Heidi Crane, MD, MPH; Alberta Warner, MD; Stephen Gottlieb, MD; John Gottdiener, MD; Russell P. Tracy, PhD; Matthew Budoff, MD; Courtney Watson, MPH; Kaku A. Armah, BA; Donna Doebler, DrPH, MS; Kendall Bryant, PhD; Amy C. Justice, MD, PhD

*JAMA Intern Med.* 2013;173(8):614-622.

**27 350 HIV+ ind.**

**55 109 controls**

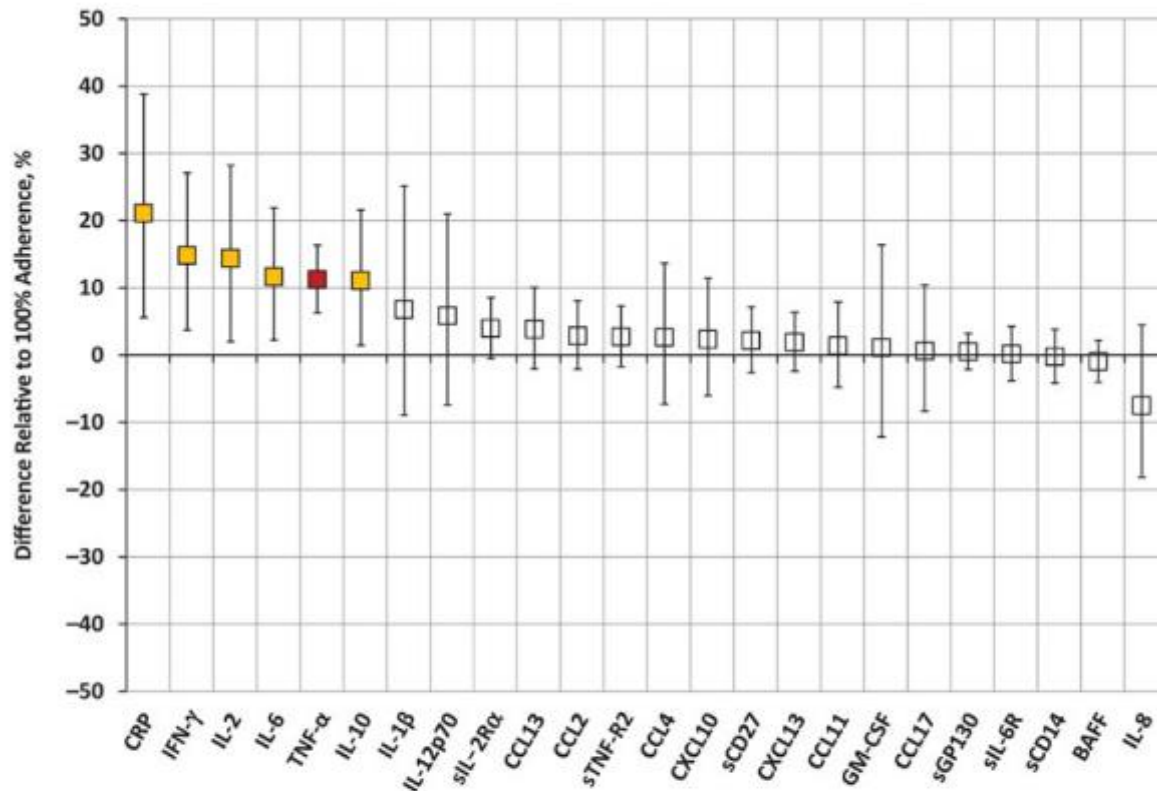
**Table 4. Time-Updated Analyses Assessing the Association of HIV-1 RNA and CD4 Cell Count Values and the Risk of AMI in Separate Models<sup>a</sup>**

Category	HR (95% CI)	P Value <sup>b</sup>
HIV-1 RNA		
Uninfected	1 [Reference]	.05
≥500	1.75 (1.40-2.18)	
<500	1.39 (1.17-1.66)	
CD4 cell count		
Uninfected	1 [Reference]	.04
<200	1.88 (1.46-2.40)	
≥200	1.43 (1.21-1.69)	

# Suboptimal Adherence to Combination Antiretroviral Therapy Is Associated With Higher Levels of Inflammation Despite HIV Suppression

Jose R. Castillo-Mancilla,<sup>1</sup> Todd T. Brown,<sup>3</sup> Kristine M. Erlandson,<sup>1</sup> Frank J. Palella Jr,<sup>5</sup> Edward M. Gardner,<sup>1</sup> Bernard J. C. Macatangay,<sup>6</sup> Elizabeth C. Breen,<sup>7</sup> Lisa P. Jacobson,<sup>4</sup> Peter L. Anderson,<sup>2</sup> and Nikolas I. Wada<sup>4</sup>

Clinical Infectious Diseases® 2016;63(12):1661–7

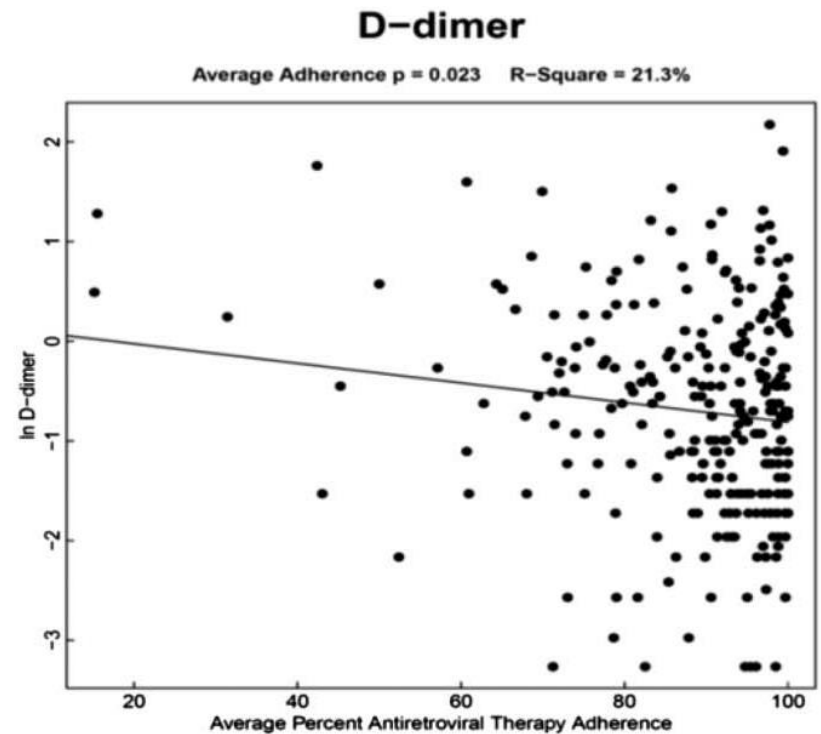
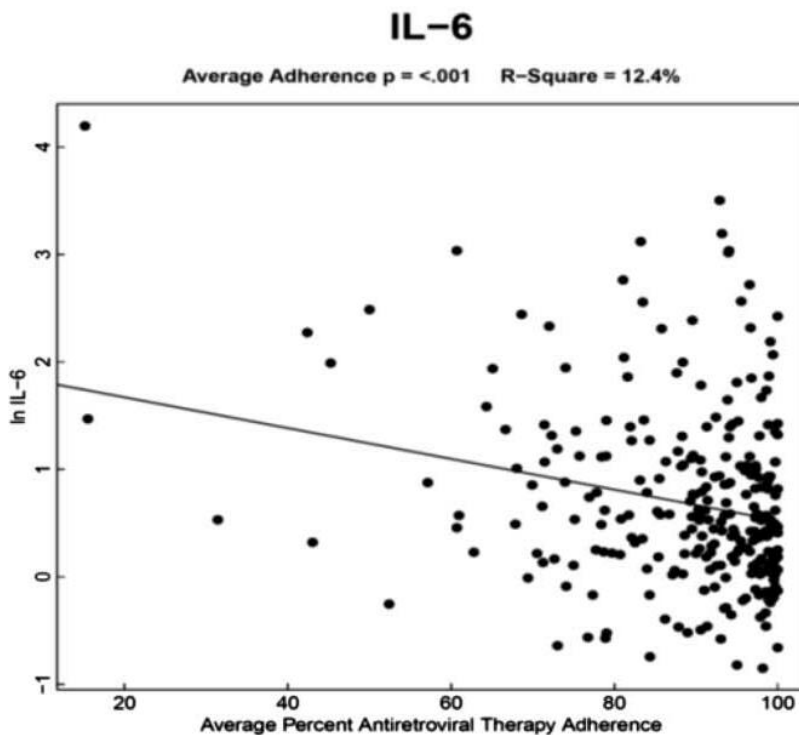


**Adherence:**  
100 % vs < 100 %  
<85, 85-99, 100 %  
All: <50 copies/ml

**Figure 1.** Percentage shifts in distribution of biomarker concentrations associated with <100% 6-month adherence to combination antiretroviral therapy (cART), compared with 100% adherence. Biomarker data were analyzed at person-visits where human immunodeficiency virus (HIV)-infected men reported taking cART and had plasma HIV RNA levels <50 copies/mL. Generalized gamma models were adjusted for age, race, hepatitis C virus infection, smoking, depressive symptoms, diabetes mellitus, anemia, hypertension, and CD4<sup>+</sup> T-lymphocyte cell count. Error bars represent 95% confidence intervals; orange squares, hazard ratios that are statistically significant ( $P < .05$ ); and red square, hazard ratio that is statistically significant after adjustment for multiple tests, using the Benjamini-Hochberg procedure to control the false discovery rate at 5% [26]. Abbreviations: BAFF, B-cell activating factor; CCL, chemokine CC motif ligand; CRP, C-reactive protein; CXCL, chemokine CXC motif ligand; GM-CSF, granulocyte-

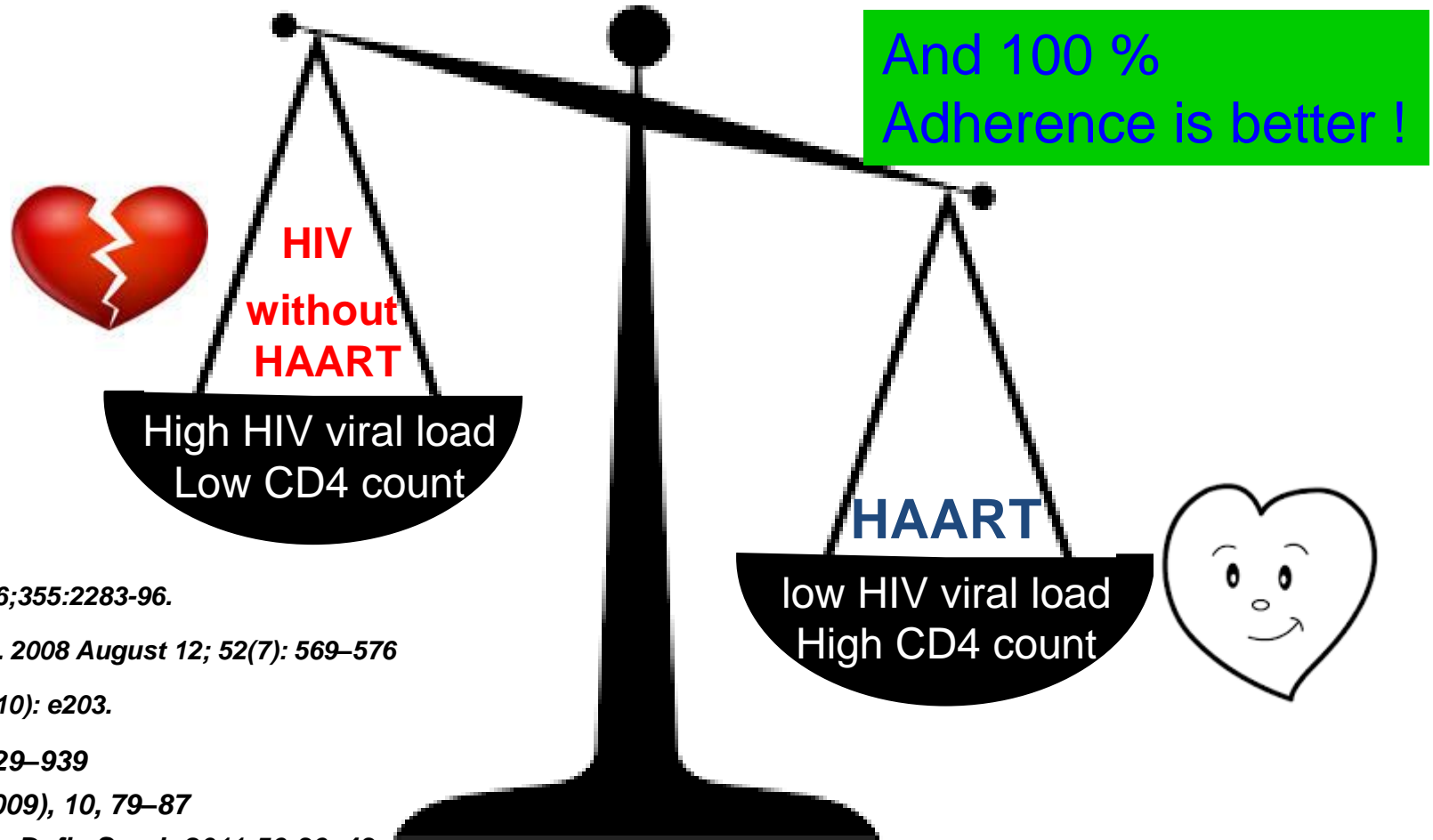
# Higher ART Adherence Is Associated With Lower Systemic Inflammation in Treatment-Naive Ugandans Who Achieve Virologic Suppression

*Jose R. Castillo-Mançilla, MD,\* Mary Morrow, MS,† Yap Boum, PhD,‡*



# Take home message

## Highly Active Antiretroviral Therapy = **HAART is good for HIV infected Hearts**



*N Engl J Med* 2006;355:2283-96.

*J Am Coll Cardiol.* 2008 August 12; 52(7): 569-576

*PLoS Med* 2008, (10): e203.

*AIDS* 2009, 23:929-939

*HIV Medicine* (2009), 10, 79-87

*J Acquir Immune Defic Syndr* 2011;56:36-43

*JAMA Intern Med.* 2013;173(8):614-622.

A patient born in 1942 comes to your clinic. He just came out of the hospital after a Heart infarctus.

Question: Should doctors test him for HIV ?

---

**A** Yes (but not in the swiss guidelines)

**B** No

# TREATMENT

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- WHEN TO START ?
- WHAT TO START ?
- HOW TO FOLLOW UP ?



# When to start ?

## 2 perspectives

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### Public health

The NEW ENGLAND  
JOURNAL of MEDICINE

ESTABLISHED IN 1812

AUGUST 11, 2011

VOL. 365 NO. 6

#### Prevention of HIV-1 Infection with Early Antiretroviral Therapy

Myron S. Cohen, M.D., Ying Q. Chen, Ph.D., Marybeth McCauley, M.P.H., Theresa Gamble, Ph.D.,  
Mina C. Hosseini, M.D., Nagalingeswaran Kumarasamy, M.B., B.S., James G. Hakim, M.D.,  
Johnstone Kurnwenda, F.R.C.P., Beatriz Grinsztejn, M.D., Jose H.S. Pilotto, M.D., Sheela V. Godbole, M.D.,  
Sanjay Mehendale, M.D., Suwat Charanyaertsak, M.D., Breno R. Santos, M.D., Kenneth H. Mayer, M.D.,  
Irving F. Hoffman, P.A., Susan H. Eshleman, M.D., Estelle Piwowar-Manning, M.T., Lei Wang, Ph.D.,  
Joseph Makhema, F.R.C.P., Lisa A. Mills, M.D., Guy de Bruyn, M.B., B.Ch., Ian Sanne, M.B., B.Ch.,  
Joseph Eron, M.D., Joel Gallant, M.D., Diane Havlir, M.D., Susan Swindells, M.B., B.S., Heather Ribaudo, Ph.D.,  
Vanessa Elharrar, M.D., David Burns, M.D., Taha E. Taha, M.B., B.S., Karin Nielsen-Saines, M.D.,  
David Celentano, Sc.D., Max Essex, D.V.M., and Thomas R. Fleming, Ph.D., for the HPTN 052 Study Team\*

11 August 2011

### Individual

The NEW ENGLAND  
JOURNAL of MEDICINE

ESTABLISHED IN 1812

AUGUST 27, 2015

VOL. 375 NO. 9

#### Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection

The INSIGHT START Study Group\*

27 August 2015

START trial = Strategic Timing of Antiretroviral Treatment

# Prevention of HIV-1 Infection with Early Antiretroviral Therapy

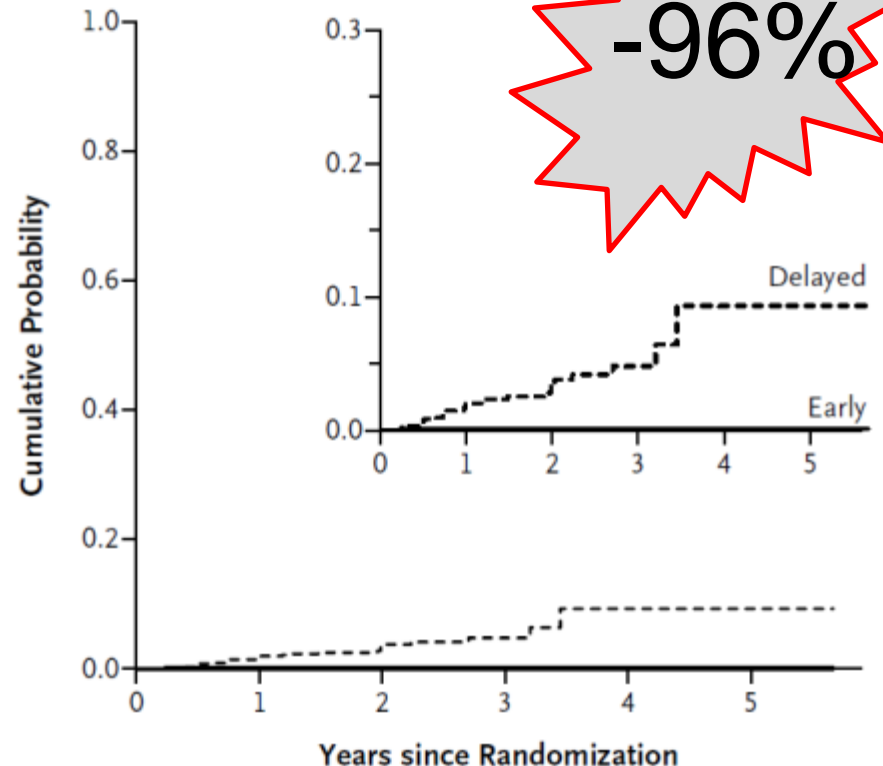
Myron S. Cohen, M.D., Ying Q. Chen, Ph.D., Marybeth McCauley, M.P.H., Theresa Gamble, Ph.D.,

**HIV serodiscordant adult couples**  
**ART-naïve, HIV-infected partner**  
**CD4 between 350–550**  
**N=1,763 couples**

**Early Arm**  
**(n=886)**  
**Start ART**  
**when**  
**CD4 between**  
**350–550**

**Delayed Arm**  
**(n=877)**  
**Start ART**  
**when**  
**CD4  $\leq$  250**

**A** Linked HIV Transmission



No. at Risk

Early	893	658	298	79	31	24
Delayed	882	655	297	80	26	22

# Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection

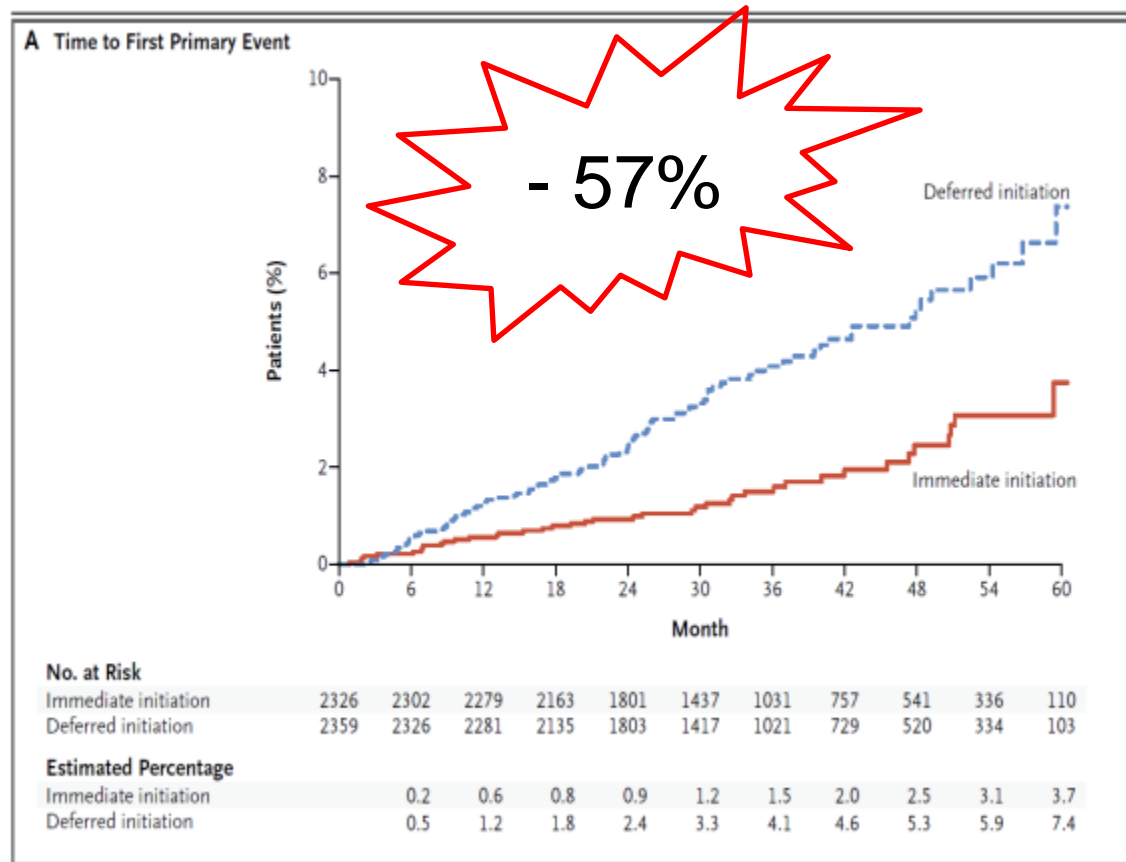
The INSIGHT START Study Group\*

**HIV infected adults  
ART-naïve  
CD4 > 500  
N=4'685**

**Immediate  
group  
(n=2326)  
Start ART  
immediately**

**Deferred  
group  
(n=2359)  
Start ART  
when  
CD4 ≤ 350**

Time to serious AIDS or non AIDS event or death



# Take home message

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- The patient has a better outcome if he starts his antiretroviral treatment as soon as possible after being infected
- The treatment of HIV infected patients prevents other infections

# What to start ?

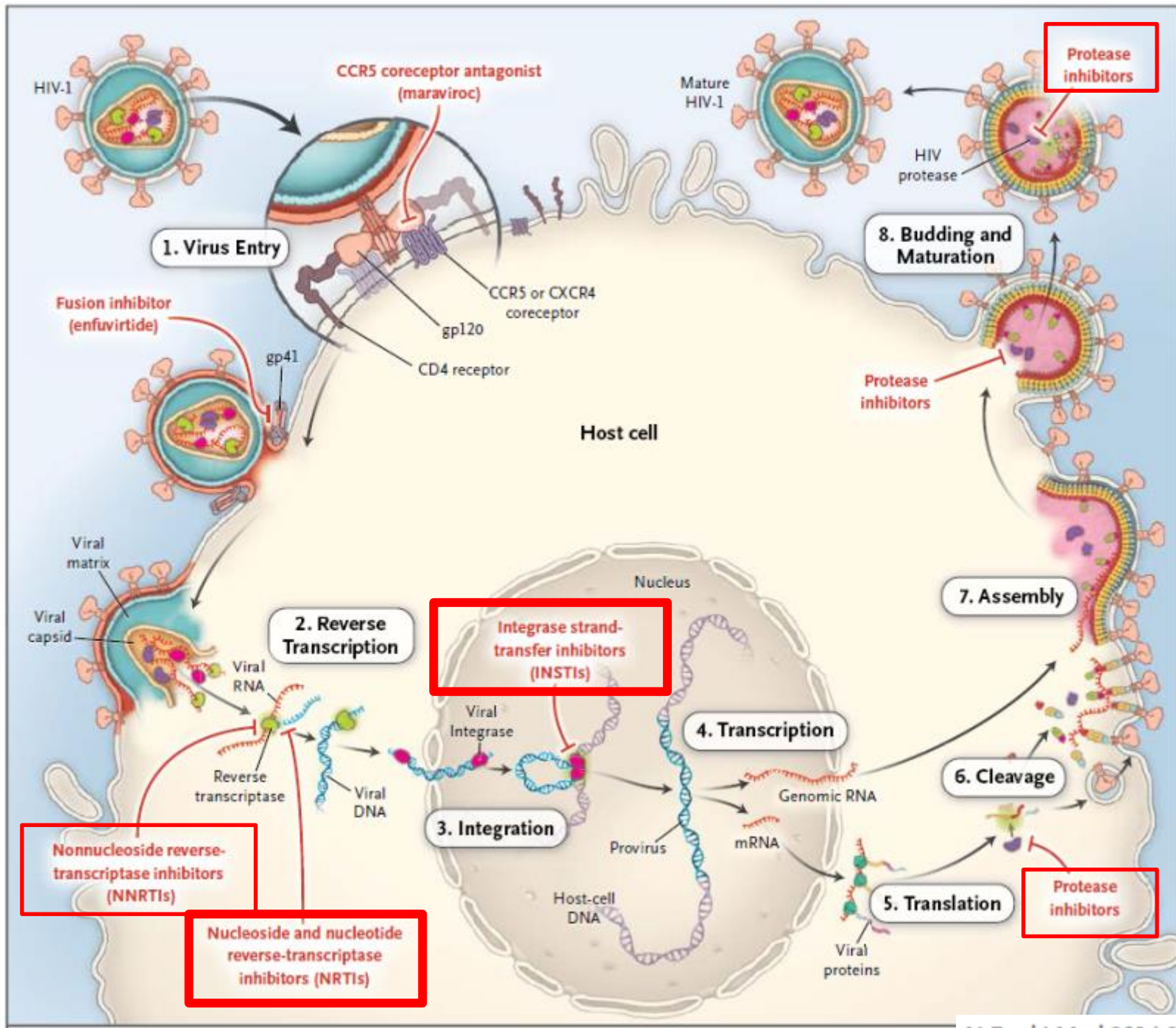


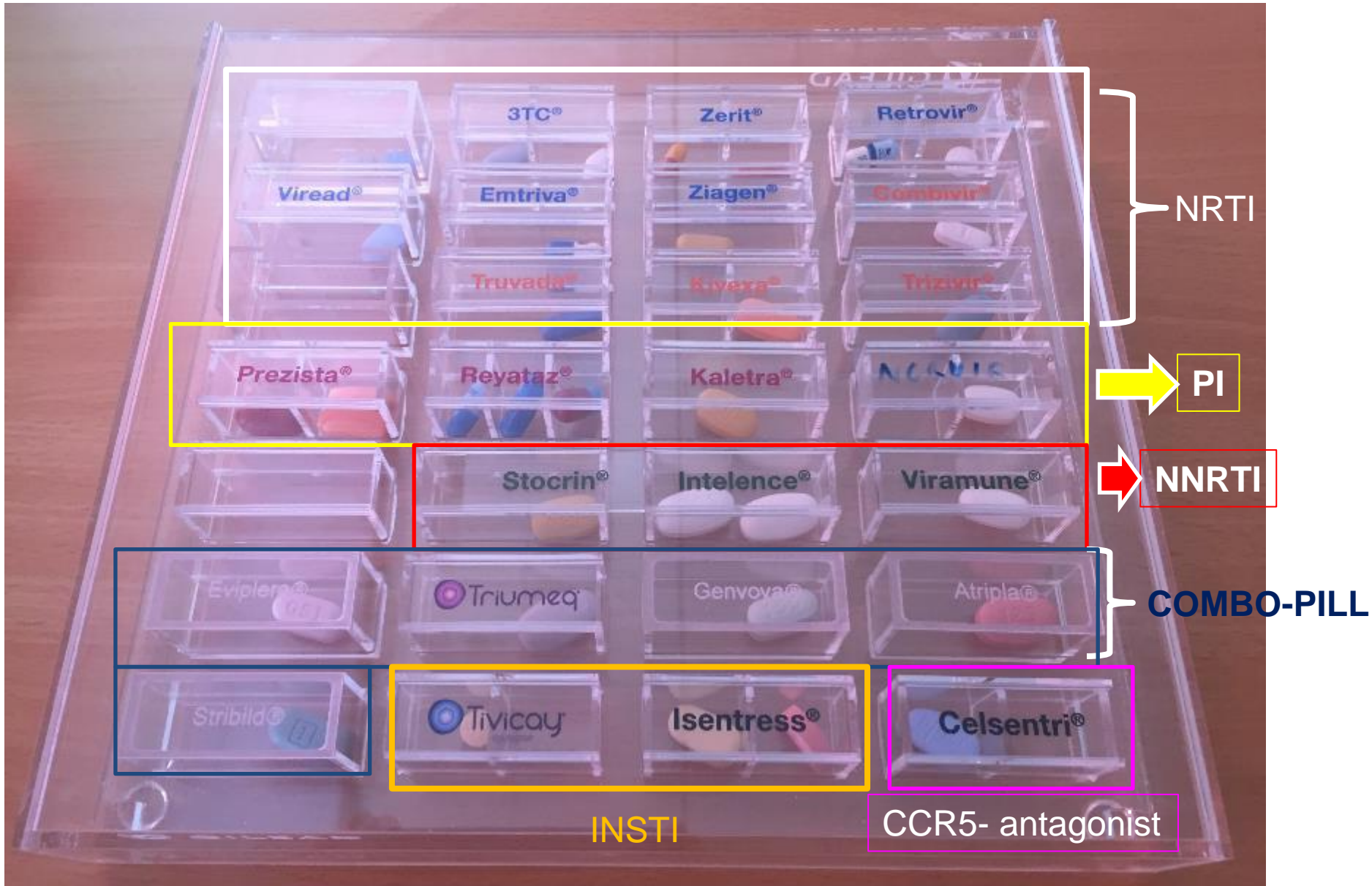
Le vrai Ron Woodroof, un Texan connu pour avoir fondé le « Dallas Buyer Club » en mars 1988, après avoir été diagnostiqué du sida.

# How many drug classes are available to treat HIV infected patients ?

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- A. 3
- B. 4
- C. 5
- D. 6



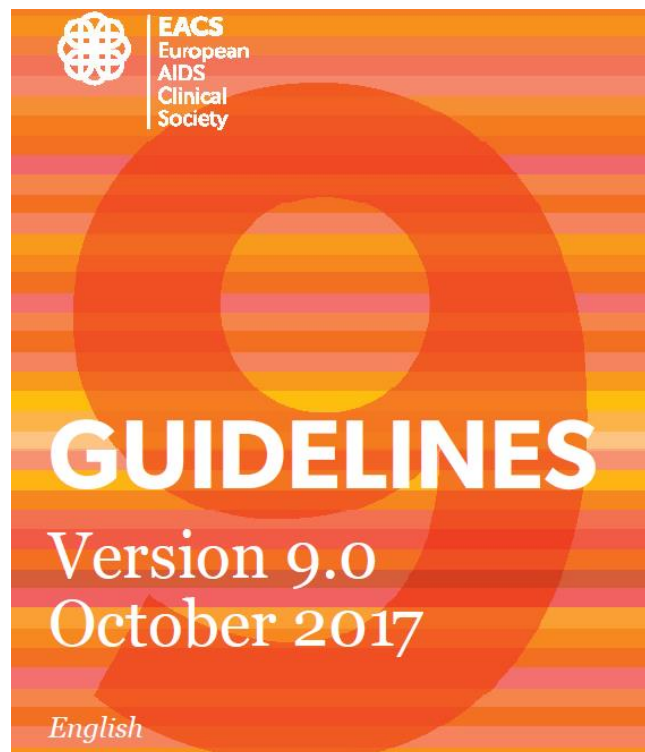




# Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults

## 2018 Recommendations of the International Antiviral Society-USA Panel

Michael S. Saag, MD; Constance A. Benson, MD; Rajesh T. Gandhi, MD; Jennifer F. Hoy, MBBS; Raphael J. Landovitz, MD; Michael J. Mugavero, MD, MHSc; Paul E. Sax, MD; Davey M. Smith, MD; Melanie A. Thompson, MD; Susan P. Buchbinder, MD; Carlos del Rio, MD; Joseph J. Eron Jr, MD; Gerd Fätkenheuer, MD; Huldrych F. Günthard, MD; Jean-Michel Molina, MD; Donna M. Jacobsen, BS; Paul A. Volberding, MD



### Box 2. Selected Recommendations for Initial ART Regimens<sup>a</sup>

#### Generally Recommended Initial Regimens (Listed in Alphabetic Order by INSTI Component)

- Bictegravir/TAF/emtricitabine (evidence rating A1a)<sup>b</sup>
- Dolutegravir/abacavir/lamivudine (evidence rating A1a)<sup>c,d</sup>
- Dolutegravir plus TAF/emtricitabine (evidence rating A1a)<sup>c,e</sup>

#### Recommended Initial Regimens for Individuals for Whom Generally Recommended Regimens Are Not Available or Not an Option (Listed in Alphabetic Order by First Component)

- Darunavir/cobicistat plus TAF (or TDF)/emtricitabine (evidence rating A1a)<sup>e</sup>
- Darunavir boosted with ritonavir plus TAF (or TDF)/emtricitabine (evidence rating A1a)<sup>e</sup>
- Efavirenz/TDF/emtricitabine (evidence rating A1a)
- Elvitegravir/cobicistat/TAF (or TDF)/emtricitabine (evidence rating A1a)<sup>e</sup>
- Raltegravir plus TAF (or TDF)/emtricitabine (evidence rating A1a for TDF)<sup>e</sup>
- Rilpivirine/TAF (or TDF)/emtricitabine (if pretreatment HIV RNA level is <100 000 copies/mL and CD4 cell count is >200/μL) (evidence rating A1a)<sup>e</sup>

# How many drug classes are available to treat HIV infected patients ?



# RESISTANCE ?

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## Human Immunodeficiency Virus Drug Resistance: 2018 Recommendations of the International Antiviral Society–USA Panel

Huldrych F. Günthard,<sup>1</sup> Vincent Calvez,<sup>2</sup> Roger Paredes,<sup>3,4</sup> Deenan Pillay,<sup>5</sup> Robert W. Shafer,<sup>6</sup> Annemarie M. Wensing,<sup>7</sup> Donna M. Jacobsen,<sup>8</sup> and Douglas D. Richman<sup>9</sup>

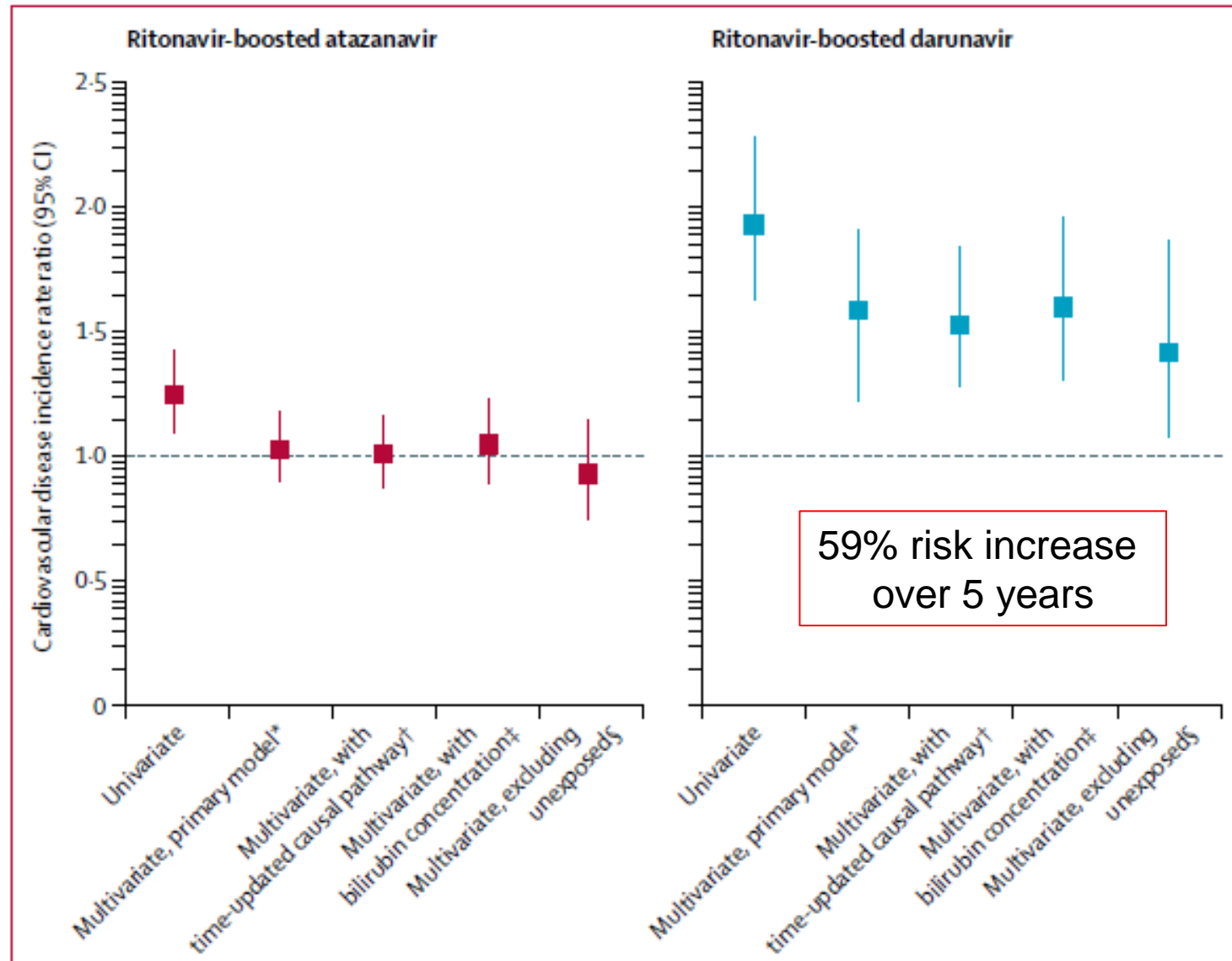
Clinical Infectious Diseases® 2018;XX(XX):1–11

## Emergence of Acquired HIV-1 Drug Resistance Almost Stopped in Switzerland: A 15-Year Prospective Cohort Analysis

Alexandra U. Scherrer,<sup>1,2</sup> Viktor von Wyl,<sup>3</sup> Wan-Lin Yang,<sup>1,2</sup> Roger D. Kouyos,<sup>1,2</sup> Jürg Böni,<sup>2</sup> Sabine Yerly,<sup>4</sup> Thomas Klimkait,<sup>6</sup> Vincent Aubert,<sup>8</sup> Matthias Cavassini,<sup>9</sup> Manuel Battegay,<sup>7</sup> Hansjakob Furrer,<sup>10</sup> Alexandra Calmy,<sup>5</sup> Pietro Vernazza,<sup>11</sup> Enos Bernasconi,<sup>12</sup> and Huldrych F. Günthard<sup>1,2</sup>; the Swiss HIV Cohort Study<sup>a</sup>

Clinical Infectious Diseases® 2016;62(10):1310–7

# Cardiovascular disease and use of contemporary protease inhibitors: the D:A:D international prospective multicohort study ...molecules are not equal



# Dolutegravir : May 2018 news...

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## **FDA Drug Safety Communication**

FDA to evaluate potential risk of neural tube birth defects with HIV medicine dolutegravir (Juluca, Tivicay, Triumeq)

*Statement on DTG – Geneva 18 May 2018*

### **Potential safety issue affecting women living with HIV using dolutegravir at the time of conception**

The investigator of an independent NIH-funded study has identified a potential safety issue with the HIV antiretroviral medicine dolutegravir (DTG), and reported it to the World Health Organization (WHO) and ViiV Healthcare. The potential safety issue is related to neural tube defects in infants born to women who were taking DTG at the time of conception.

The issue has been identified from a preliminary unscheduled analysis of an ongoing observational study in Botswana, which has found 4 cases of neural tube defects out of 426 women who became pregnant while taking DTG. This rate of approximately 0.9% compares to a 0.1% risk of neural tube defects in infants born to women taking other antiretroviral medicines at the time of conception.

## **New study suggests risk of birth defects in babies born to women on HIV medicine dolutegravir**

While EMA review is ongoing, dolutegravir should not be used in women seeking to become pregnant

# How To Follow Up ?

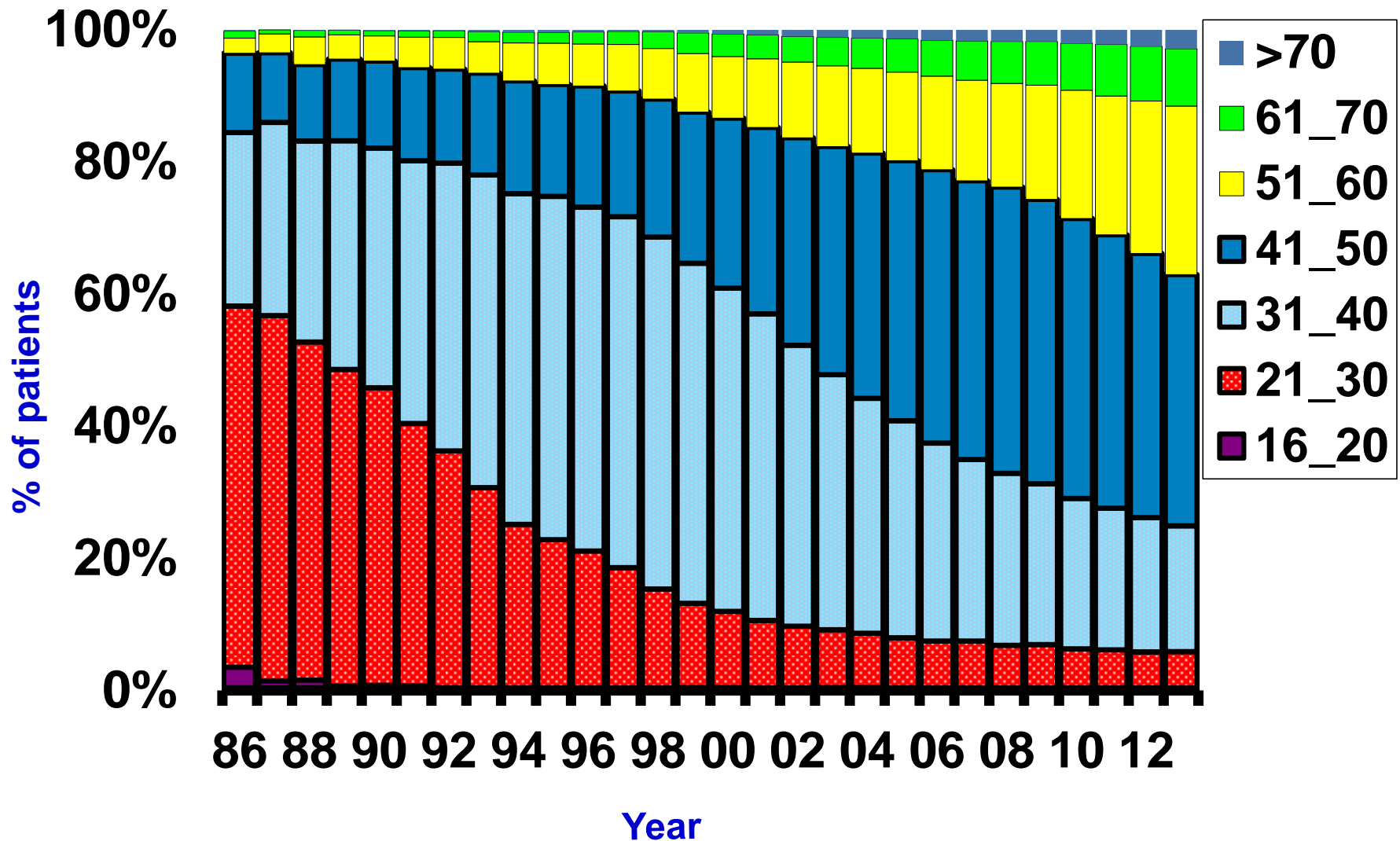
Like any chronic disease...*contagious... if not well treated !*

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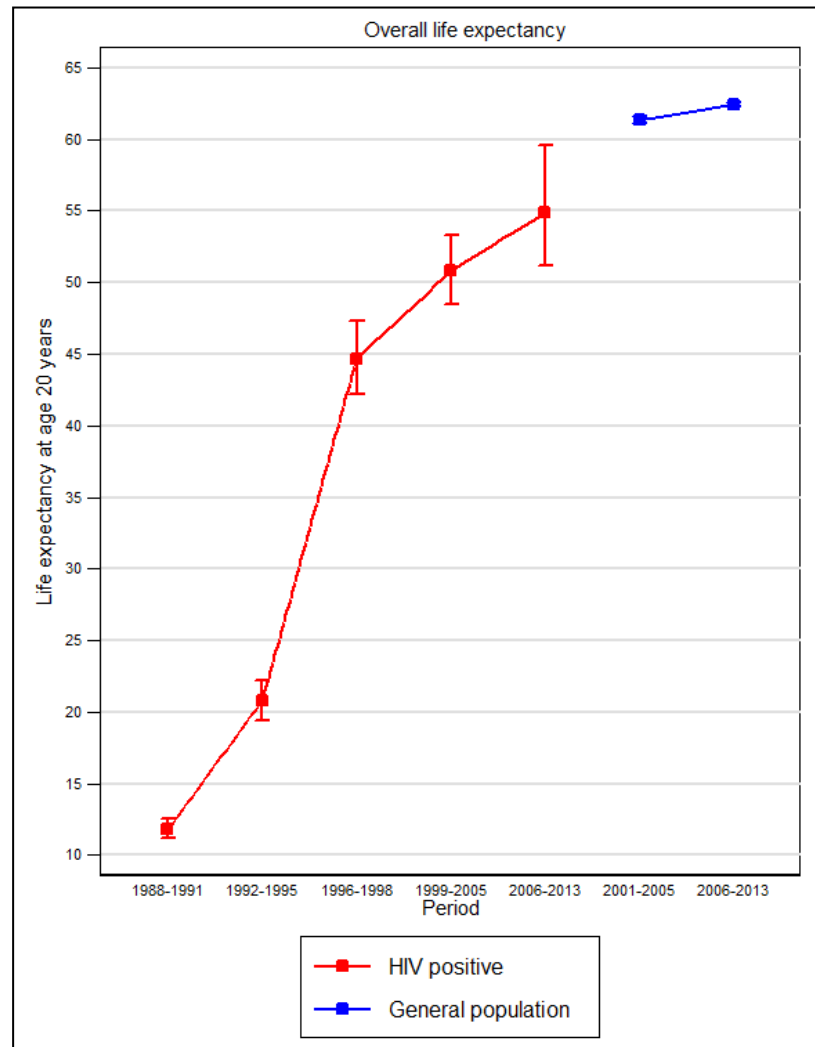
- Readiness (understanding, motivation, beliefs)
- Tolerance and toxicity
- Efficacy
- Adherence
- HCV treatment  *all of them since 01 May 2017*
- Other co-morbidities\*  
(smoking, STI, Psy, aging..cardiovascular risk factors, bones/kidneys/brain/liver)
- Drug interactions ([www.hiv-druginteractions.org](http://www.hiv-druginteractions.org))

\* *EACS guidelines, version 8, p.6-88*

# Age distribution of active patients by year in the SHCS, 1986-2013



# Life expectancy in HIV-positive persons in Switzerland: matched comparison with general population





# Life expectancy in HIV-positive persons in Switzerland: matched comparison with general population

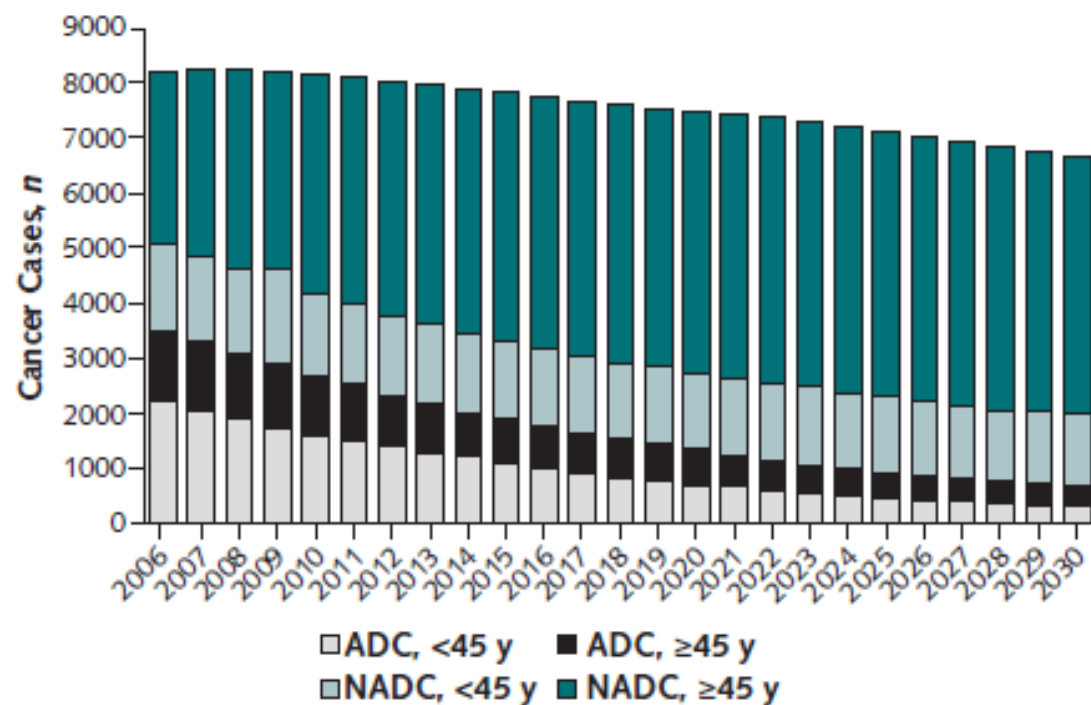
**Table 3.** Life expectancy at age 20 years in the Swiss HIV Cohort Study, by treatment era.

	Life expectancy (95% CI)				
	Monotherapy (1988–1991)	Dual therapy (1992–1995)	Early cART (1996–1998)	Later cART (1999–2005)	Recent cART (2006–2013)
<b>Overall life expectancy</b>	11.8 (11.2-12.5)	20.8 (19.4-22.2)	44.7 (42.2-47.3)	50.8 (48.5-53.3)	54.9 (51.2-59.6)
<b>Smoking</b>					
<i>Never</i>	-	-	-	65.2 (60.1-70.6)	59.0 (53.5-65.7)
<i>Former</i>	-	-	-	56.4 (51.2-62.1)	54.6 (48.2-61.8)
<i>Current</i>	-	-	-	42.8 (40.7-45.2)	49.4 (45.2-54.6)
<b>Presentation at enrolment*</b>					
<i>CD4 cell count &lt;200 cells/<math>\mu</math>l</i>	3.2 (2.9-3.6)	6.5 (5.5-7.6)	35.1 (30.2-40.3)	46.7 (42.6-51.2)	47.6 (41.9-54.3)

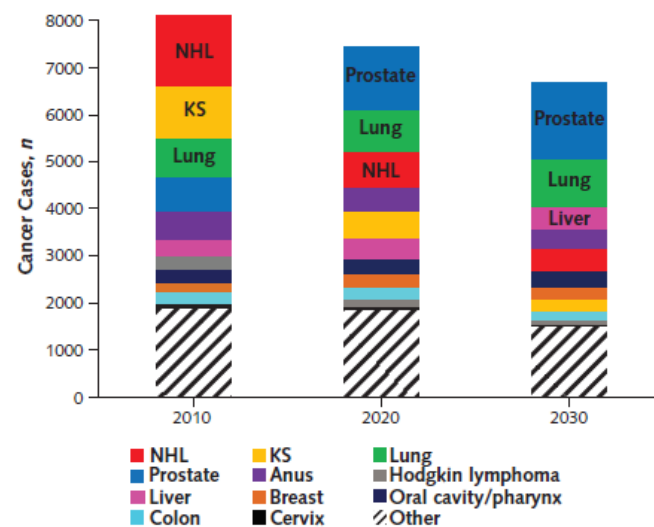
# Projected Cancer Incidence Rates and Burden of Incident Cancer Cases in HIV-Infected Adults in the United States Through 2030

Meredith S. Shiels, PhD, MHS; Jessica Y. Islam, MPH; Philip S. Rosenberg, PhD; H. Irene Hall, PhD, MPH; Evin Jacobson, PhD, MS; and Eric A. Engels, MD, MPH

**Figure 3.** Estimated number of incident diagnoses of ADC and NADC in adults living with HIV in the United States during 2006 to 2030, stratified by age.



**Figure 4.** Estimated cancer burden (incident cancer diagnoses) among adults living with HIV in the United States, by cancer type, in 2010, 2020, and 2030.



KS = Kaposi sarcoma; NHL = non-Hodgkin lymphoma.

# PREVENTION

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- FOPH perspective
- UNAIDS / WHO perspective

# Prior to 2011...



1. Pénétration - toujours avec une capote.
2. Pas de sperme ni de sang dans la bouche.



Si le passé dérange votre relation: [check-your-lovelife.ch](http://check-your-lovelife.ch)

LOVE LIFE  
STOP SIDA

# After 2011...



1. Pénétration – toujours avec une capote.  
2. Pas de sperme ni de sang dans la bouche.  
3. Démangeaison, brûlure, écoulement ? Parlez-en à votre médecin.


# Ça brûle ?

**Parlez-en à votre médecin.  
Stop aux infections  
sexuellement transmissibles.**

**LOVE LIFE**

check-your-lovelife.ch

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- 
1. Pénétration – toujours avec une capote.
  2. Pas de sperme ni de sang dans la bouche.
  3. Démangeaison, brûlure, écoulement ? Parlez-en à votre médecin.

# HIV testing – 2015 ! In case of flue symptoms...



*Rule number 4:  
« Think HIV » in case you have flue symptoms after unprotected sex*

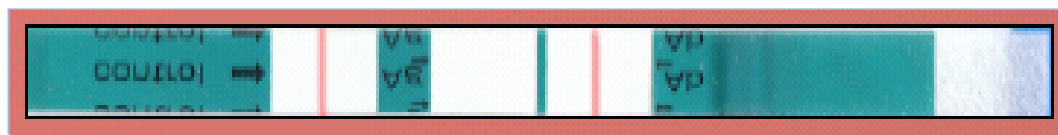
# Field accuracy of fourth-generation rapid diagnostic tests for acute HIV-1: a systematic review

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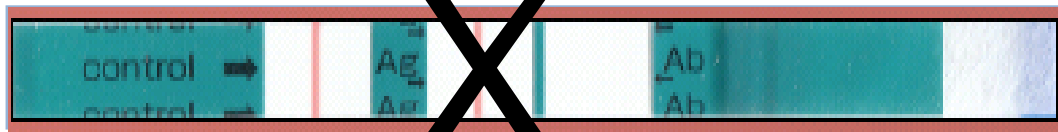
## 0 % sensitivity !

**Conclusion:** Fourth-generation RDTs are currently unsuitable for the detection of acute HIV-1.

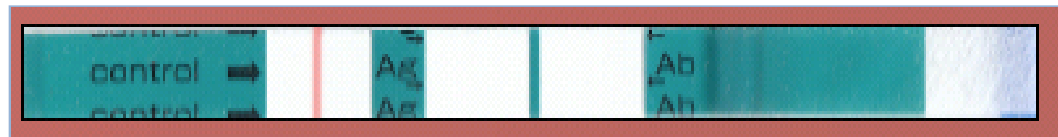
*AIDS* 2015, **29**:2465–2471



HIV pos



~~Acute HIV~~



HIV neg

# HIV TREATMENT: CRITICAL TO ENDING THE AIDS EPIDEMIC AND MAKING HIV TRANSMISSION RARE

## THE TREATMENT TARGET



90%

diagnosed



90%

on treatment



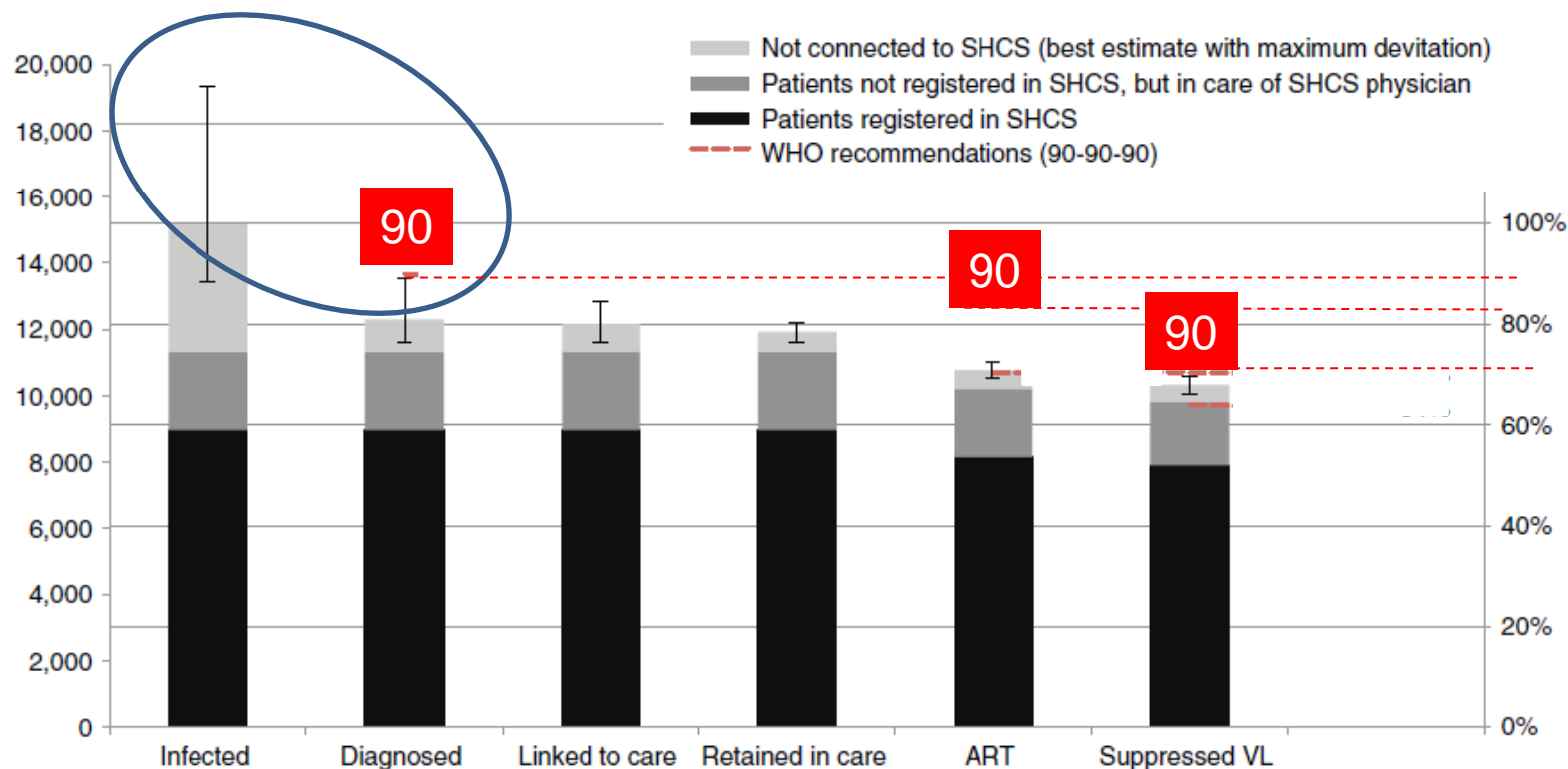
90%

virally suppressed

UNAIDS 2014 objectives for 2020



# The HIV care cascade in Switzerland: reaching the UNAIDS/WHO targets for patients diagnosed with HIV



**Fig. 1. HIV care cascade for Switzerland in 2012.** Numbers and proportions (estimated total of infected individuals = 100%). Red horizontal lines indicate the 2014 UNAIDS/WHO targets of 90% of the previous level, translating into 90, 71, and 64% of the total. Columns are sub-divided by reliability. SHCS, Swiss HIV Cohort Study. Vertical error bars indicate the margins of uncertainty.

# Prevention: What else ?

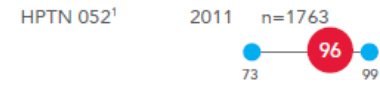
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# Which statement is false ?

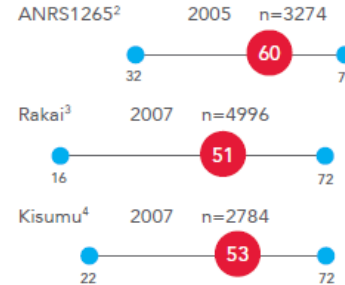
- A.** Serodiscordant couples with undetectable HIV viral load may have unprotected sex
- B.** Among heterosexual men, circumcision decreases the risk of HIV acquisition by ~ 55%
- C.** Pre-Exposure prophylaxis (PrEP) is recommended by the WHO for high risk population
- D.** PrEP consists of a single pill once a week

# Efficacy of bio-medical prevention interventions derived from randomized Clinical trials, modified from Marrazzo et al, JAMA, 2014

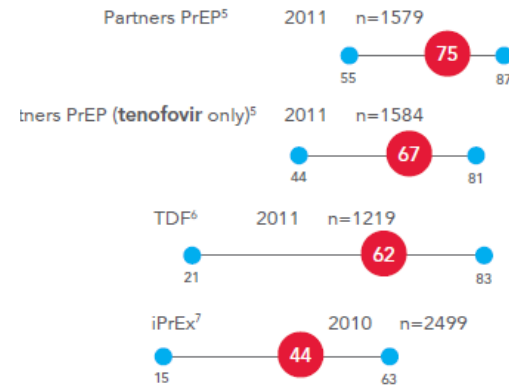
## Immediate antiretroviral therapy for HIV-positive partner



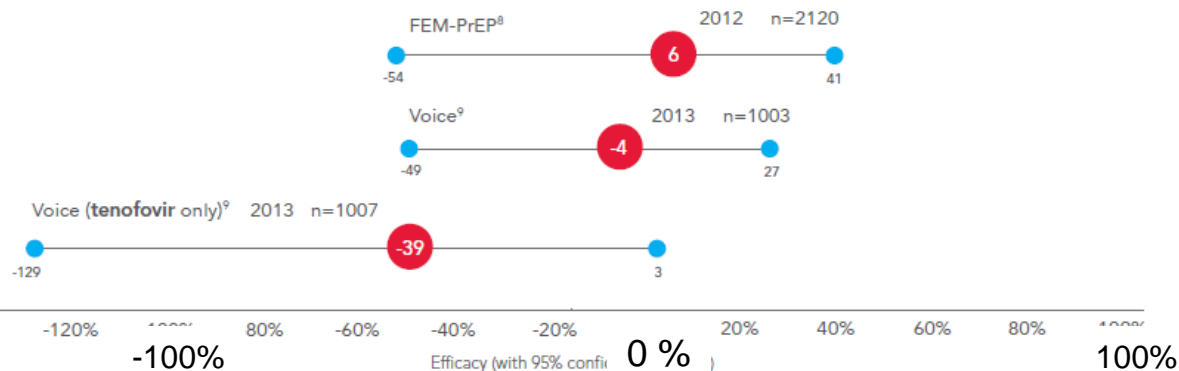
## Medical male circumcision



## Tenofovir /emtricitabine Prophylaxie orale Pré-exposition = PrEP



# PrEP





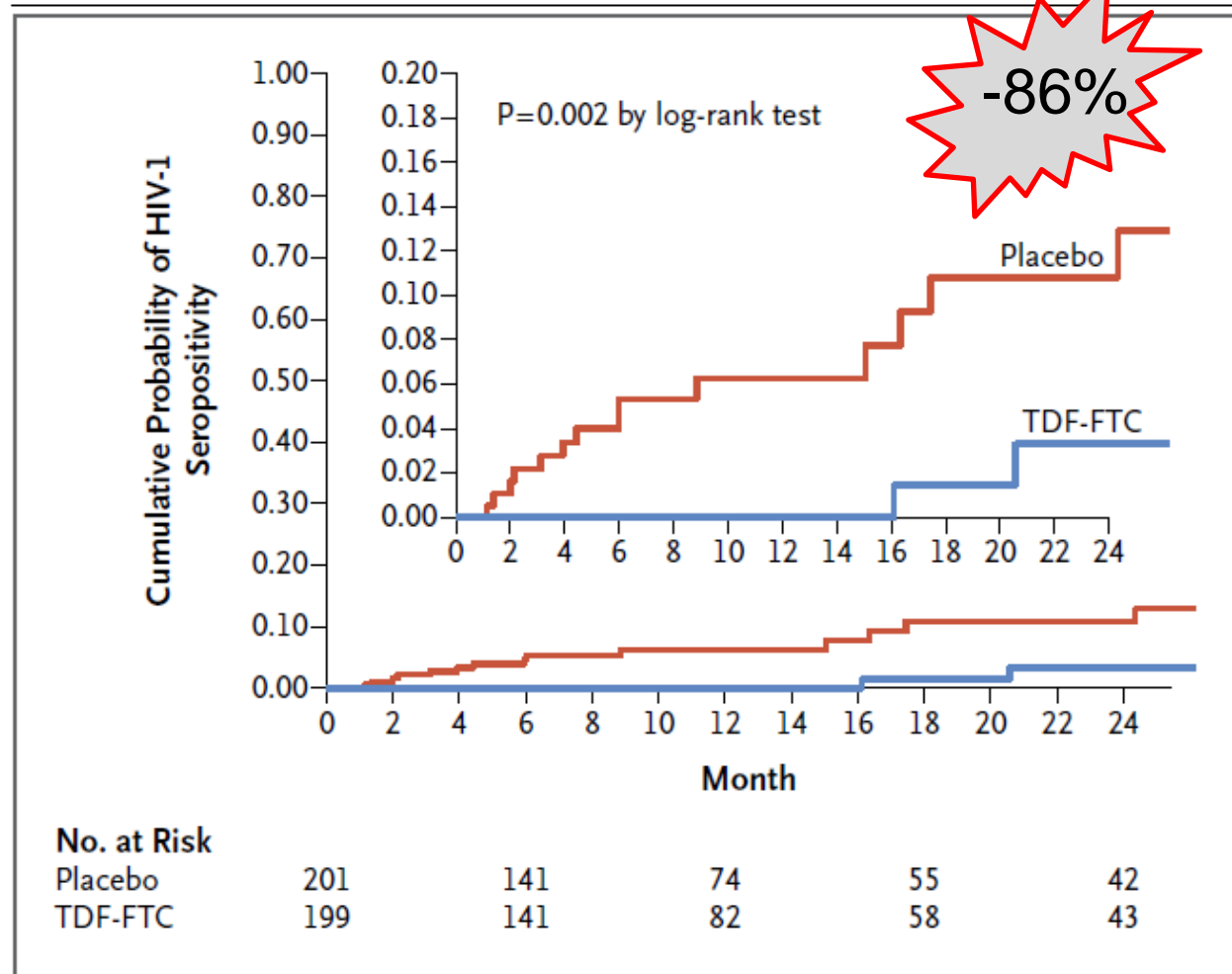
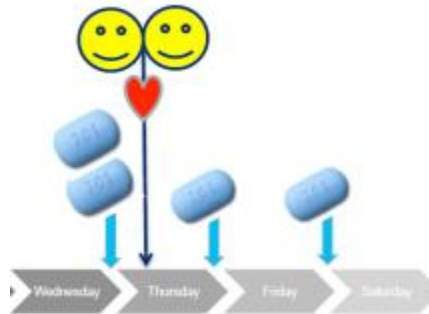
# On-Demand Preexposure Prophylaxis in Men at High Risk for HIV-1 Infection

J.-M. Molina, C. Capitant, B. Spire, G. Pialoux, L. Cotte, I. Charreau, C. Tremblay,

Participants:

High risk HIV neg MSM

Method: double-blind RCT



NEJM 2015, p. 2237-46

Figure 3. Kaplan–Meier Estimates of the Probability of HIV-1 Infection.

# Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): effectiveness results from the pilot phase of a pragmatic open-label randomised trial *Lancet, 2016 p.53-60*

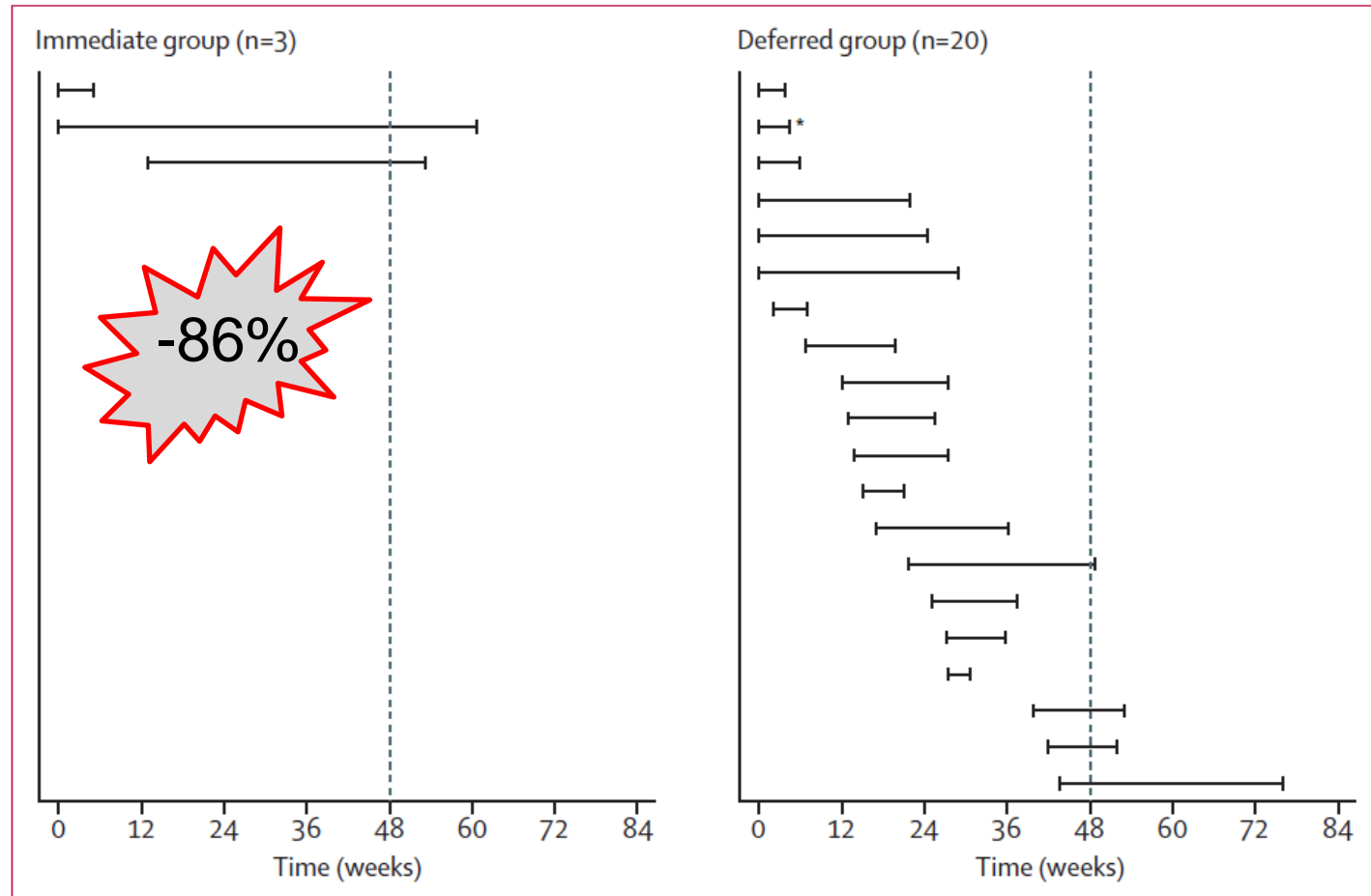
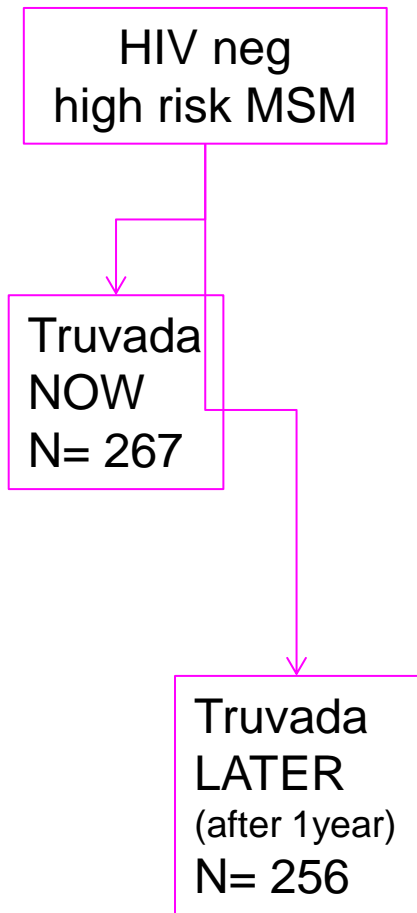


Figure 2: Incident HIV infections

Left bound for each HIV case represents last non-reactive HIV test; right bound represents first reactive HIV test. The dotted line represents time when participants in the deferred group became eligible for pre-exposure<sup>57</sup>

## GUIDELINES



# GUIDELINE ON WHEN TO START ANTIRETROVIRAL THERAPY AND ON PRE-EXPOSURE PROPHYLAXIS FOR HIV

SEPTEMBER 2015



World Health  
Organization

### Recommendation 2: Oral pre-exposure prophylaxis to prevent HIV acquisition

Target population	Specific recommendation	Strength of the recommendation	Quality of the evidence
HIV-negative individuals at substantial risk of HIV infection <sup>b</sup>	Oral PrEP (containing TDF) should be offered as an additional prevention choice for people at substantial risk of HIV infection as part of combination prevention approaches	<i>Strong</i>	<i>High</i>

NEW

# Which statement is false ?

- A. Serodiscordant couples with undetectable HIV viral load may have unprotected sex
- B. Among heterosexual men, circumcision decreases the risk of HIV acquisition by ~ 55%
- C. Pre-Exposure prophylaxis (PrEP) is recommended by the WHO for high risk population
- D. PrEP consists of a single pill once a week**



# Conclusion

Early HIV diagnosis and early treatment of the infection is good for:

- The patient
- The community
- The medical costs
- Eradication of the HIV epidemic

*Are you active in the fight against HIV ?*



## Special thanks to the following for « good debates » on the topic :

- Estefania Echeverri -voting cards!
- The patients
- Colleagues from the Swiss HIV Cohort Study
- The nurses and physicians along the years in the outpatient clinic
- The primary practitioners and ER physicians
- Charlie Chaplin for laughing and fighting despite “tough times”

# Latest Swiss Recommendations on HIV and STI

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- \* HIV laboratory diagnosis, Jan. 2016
- \* PrEP, Jan. 2016
- \* Prevention of Mother to child transmission, Jan. 2016
- \* HIV testing by physicians, May 2015
- \* Diagnosis and treatment of Syphilis, May 2015
- \* Information about acute HIV-infection, Mar. 2015
- Gonococcus, diagnosis and treatment, SMF, 2014
- Chlamydiae, SMF, 2017

Accessible sur le site de l'OFSP – comment ?

Google key search words: bag AND HIV recommendations