

# Combined Pharmacological and Behavioral Therapy and HIV Risk Reduction

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**NIDA** NATIONAL INSTITUTE  
ON DRUG ABUSE

Substance abuse is a significant vector for HIV transmission.

Transmission can occur at multiple points:

- drug procurement

  - exchanging (unprotected) sex for drugs

- act of self-administering drugs

  - use of infected equipment

- effects of the drug

  - unprotected sex during intoxication

## Objectives

- To determine the effect of combined methadone maintenance and behavioral treatments on HIV risk behaviors in heroin/cocaine users.
- To investigate HIV risk behaviors in a subpopulation of heroin/cocaine users - individuals infected with hepatitis C.

## Treatment Population

55% Male

Race: 58% African American 40% White 2% Other

Age: 38 years old

Education: 11 years

10 years of Heroin Use; 100% opioid dependent

8 years of Cocaine Use; 65% DSM IV cocaine dependent

<10% HIV positive

# Combination Treatment

Target heroin use - Methadone Maintenance

Target cocaine use -

Contingency management - reinforced cocaine abstinence

Cognitive Behavioral Therapy - four specific skills taught:

Coping skills to deal with stress

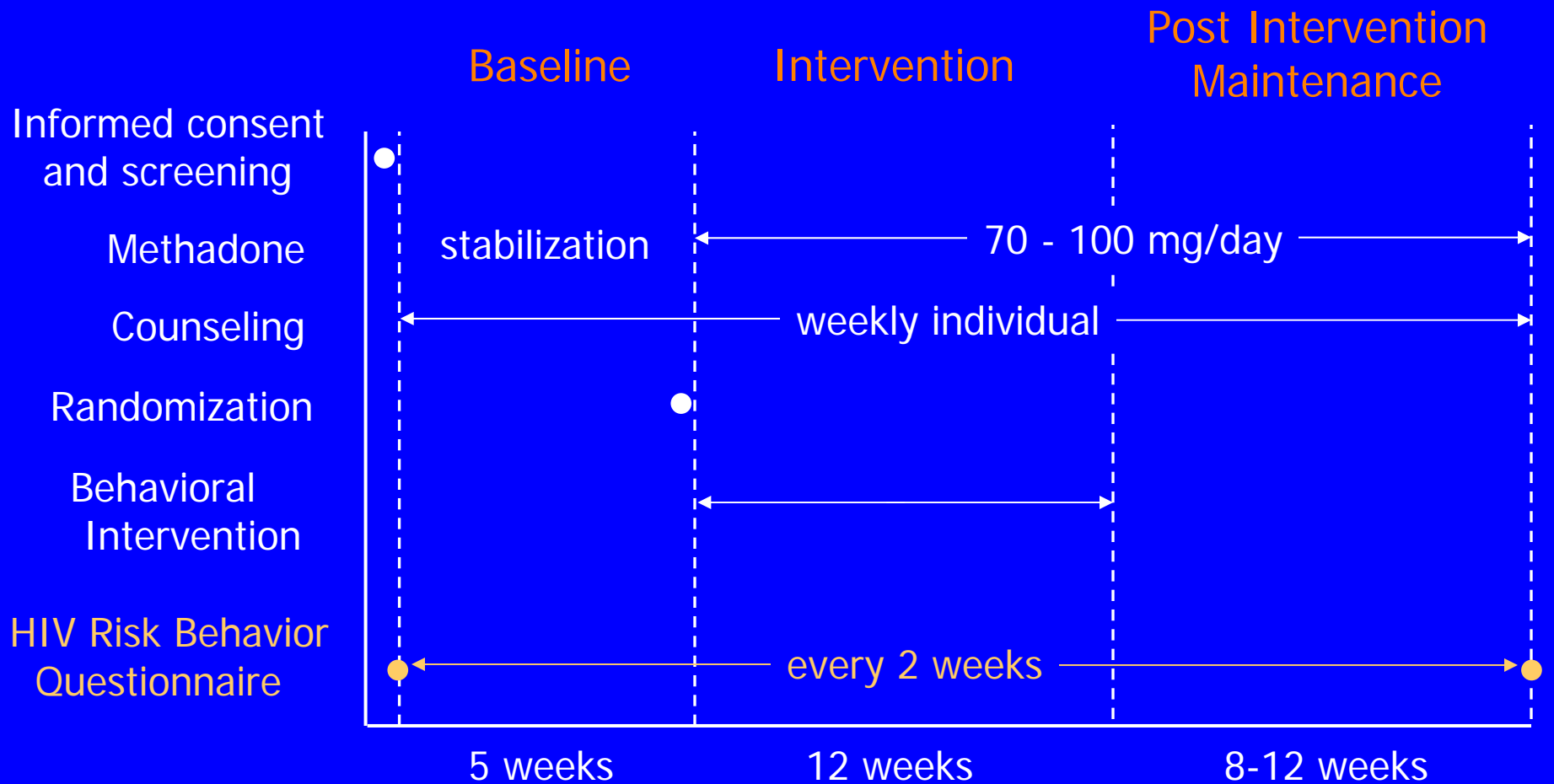
Relapse prevention skills to deal with craving

Development of alternative (non-drug) reinforcers

HIV Risk Reduction Education

	Cognitive Behavioral	Social Support
Contingency Management	Combination	Single
Noncontingent Control	Single	Control

# Study Time Line



## HIV Risk Behavior Questionnaire

Internally developed questionnaire modified from that used in the ALIVE study (Vlahov et al., 1991).

### Drug-related behaviors

- how often injected any kind of drug

- how frequently injected with shared needles

### Sexual behaviors

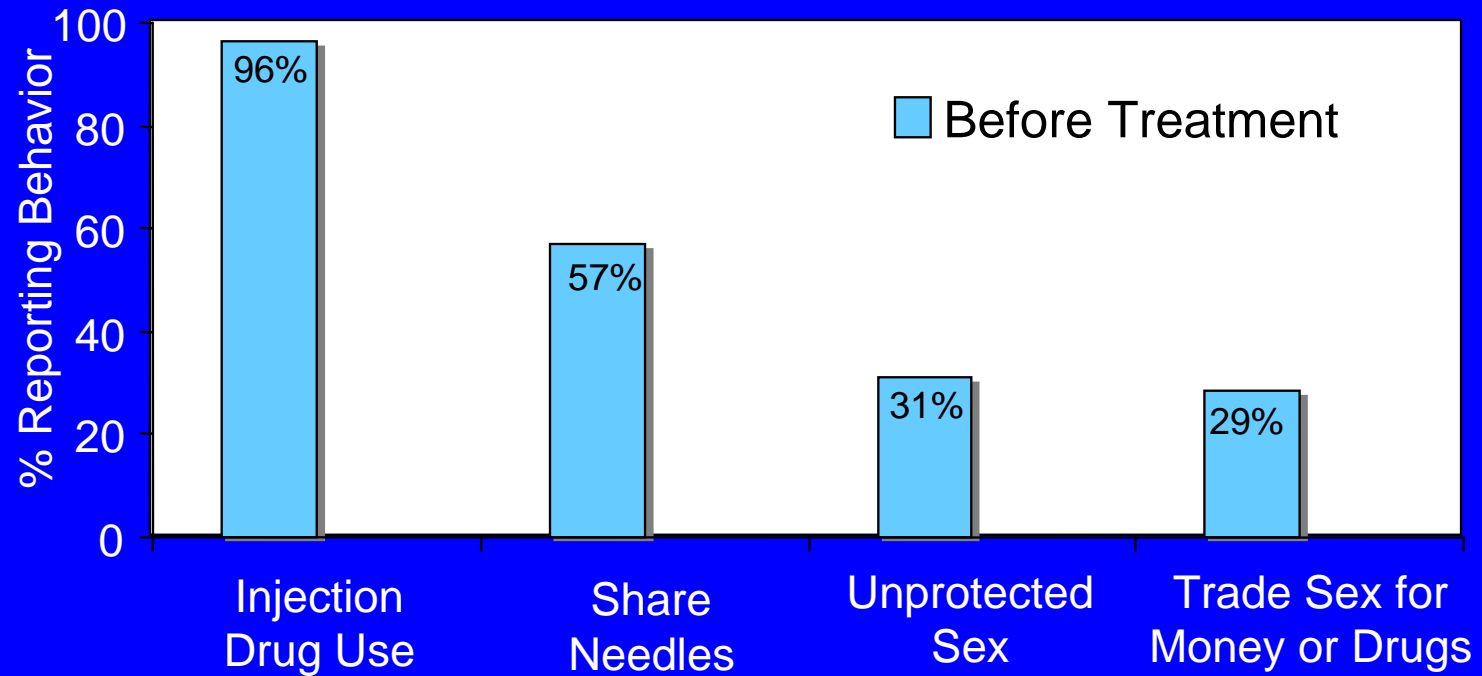
- how frequently had unprotected sex

- how frequently traded sex for money, drugs or gifts.

Possible responses: none, less than 4 times per month, once per week, 2-6 times per week, daily, 2 or more times a day.

Responses were dichotomized to none vs. some (i.e., any occurrence of the behavior).

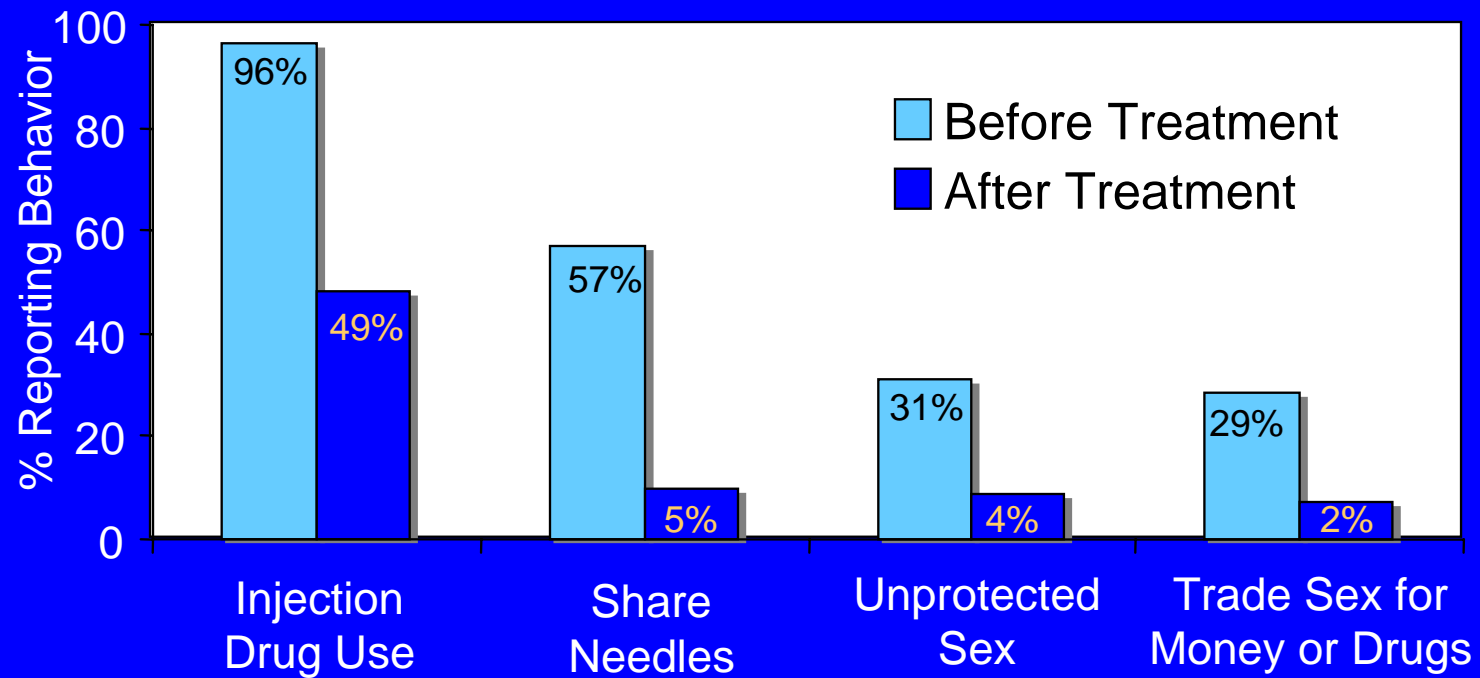
## HIV Risk Behaviors



N=81

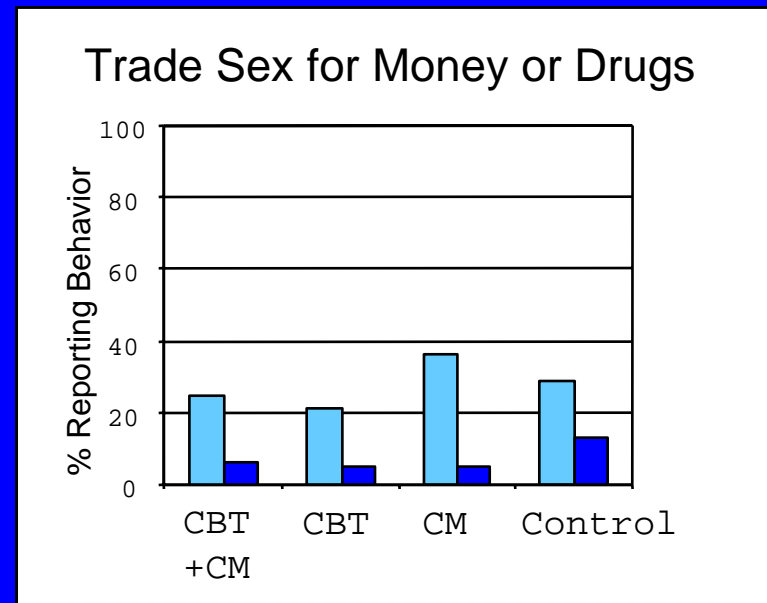
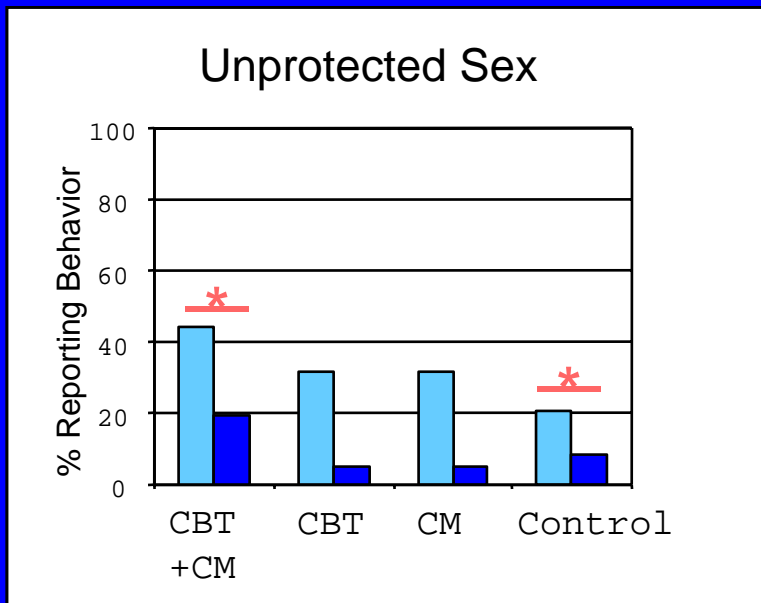
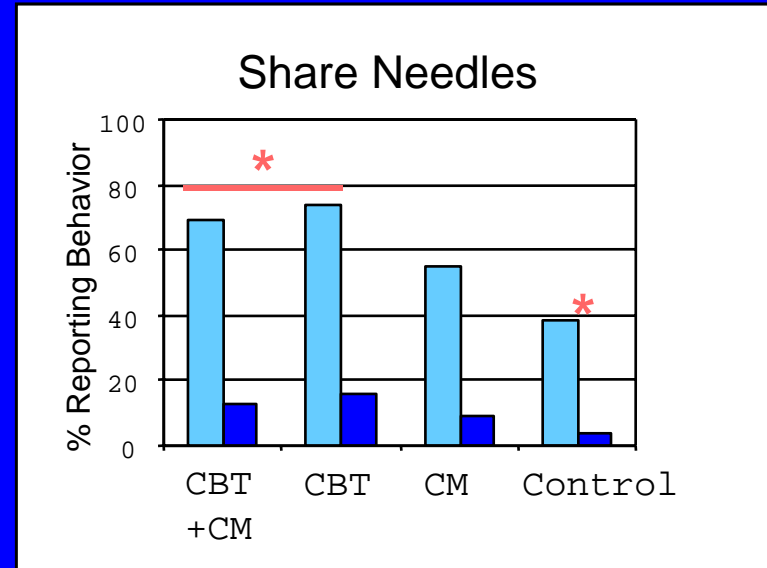
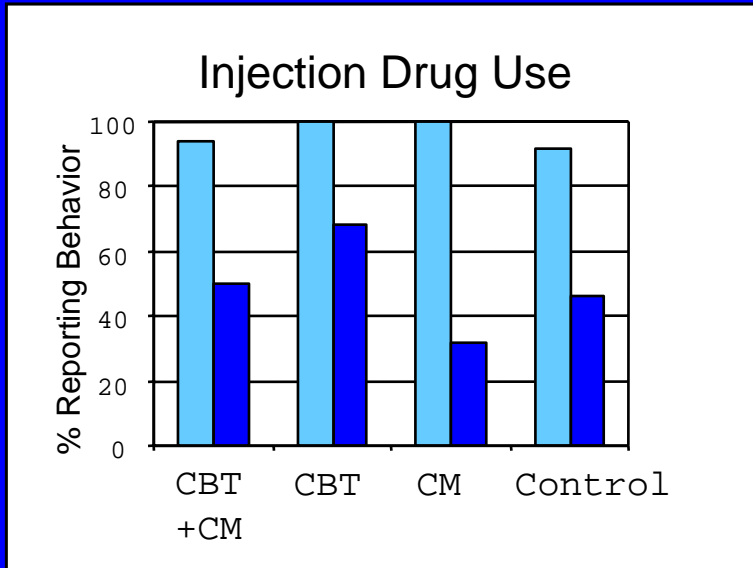


## HIV Risk Behaviors



N=81

# Frequencies of self-reported HIV risk behaviors by treatment group



■ Before  
■ After

CBT - Cognitive Behavioral Therapy; CM - Contingency Management Therapy

Methadone maintenance augmented with behavioral interventions has broad beneficial effects in reducing risky behaviors.

Cognitive behavior therapy enhanced with HIV Risk education had limited added benefit over standard treatment.

Are treatment effects on risky behaviors different in infected and non-infected populations?

## Risky Behaviors in HCV-infected Polydrug Users

### Participants:

647 polydrug (heroin/cocaine) users  
tested for HCV antibodies on admission  
55% HCV positive (n = 356); 45% HCV negative (n = 291)  
most were unaware of their HCV status at the time of testing

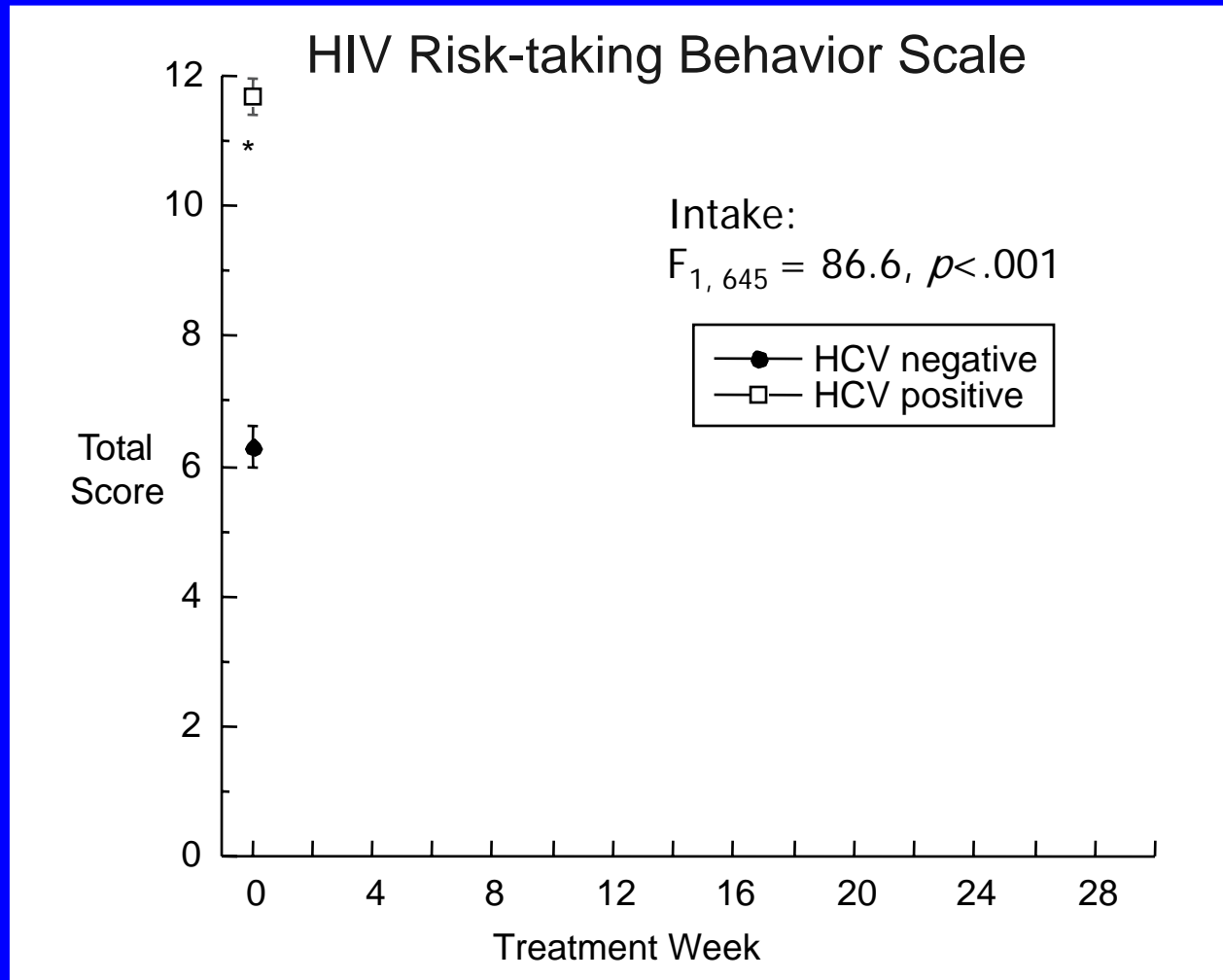
### Treatment:

Methadone Maintenance  
Contingency management - reinforced cocaine/heroin abstinence.  
HIV risk reduction education was incorporated in individual counseling  
for all participants.

### HIV Risk-taking Behavior Scale (HRBS; Darke, et al., 1991)

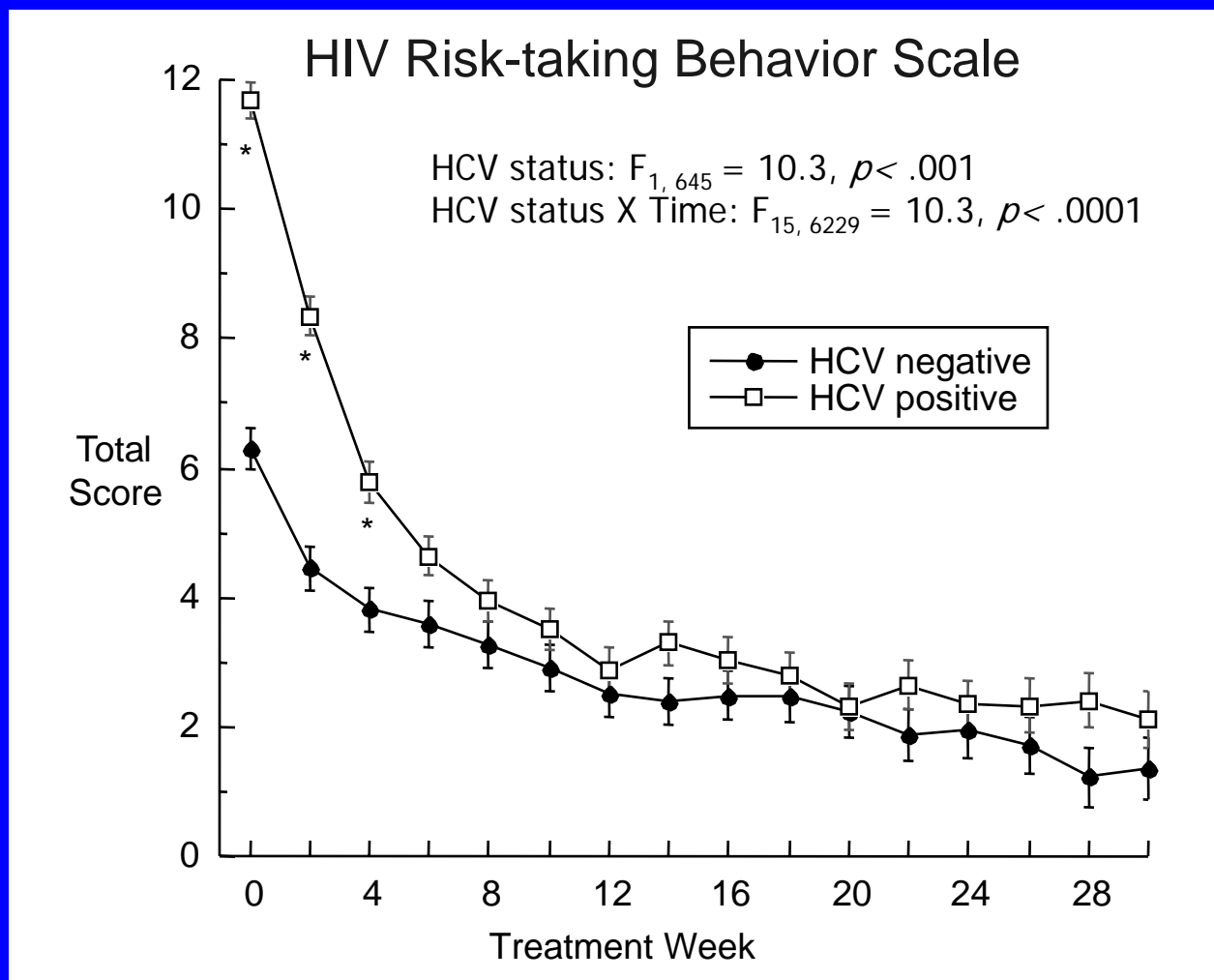
Two subscales: Drug-related risk behavior; Sexual risk behavior  
Completed every two weeks

# HIV Risk-taking Behaviors and Hepatitis C Infection



Maximum possible score = 60; higher score = more risky behavior

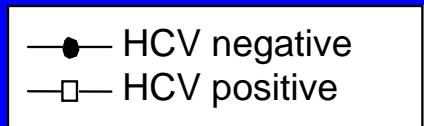
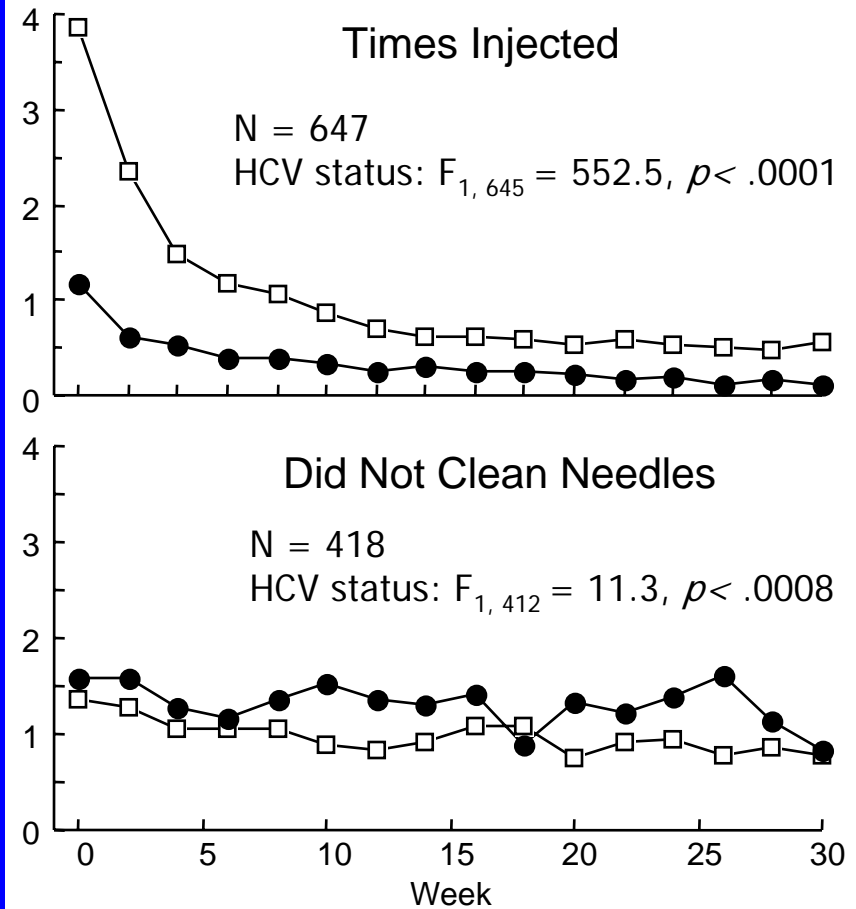
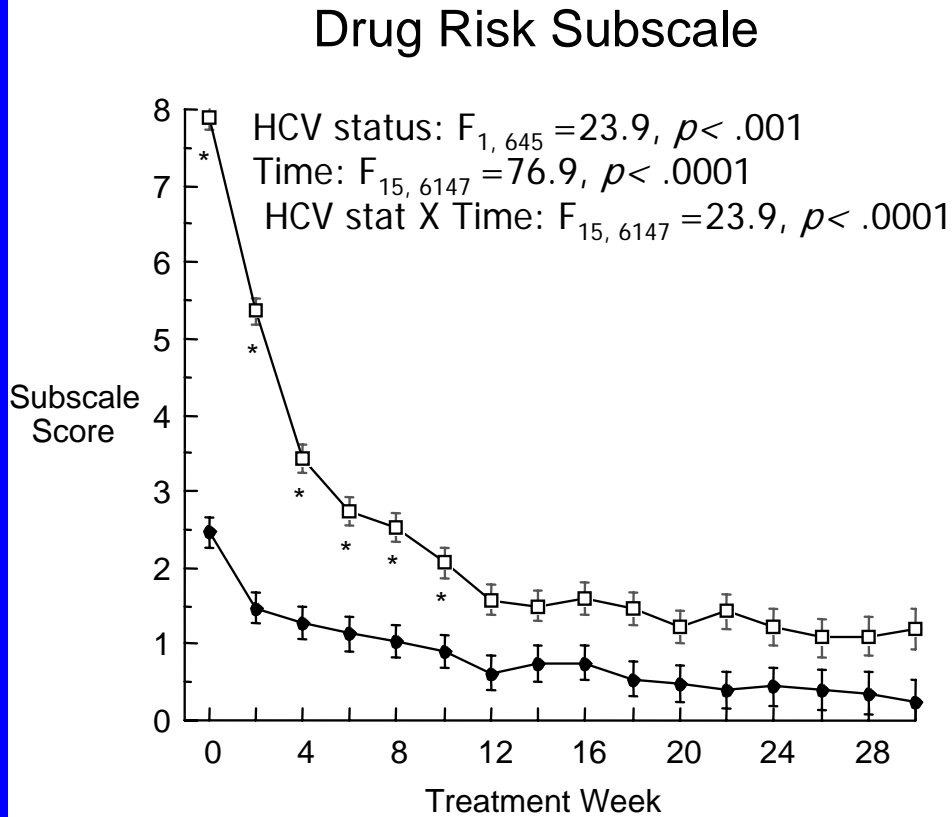
# HIV Risk-taking Behaviors and Hepatitis C Infection



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# HIV Risk-taking Behavior Scale

## Representative Individual Items



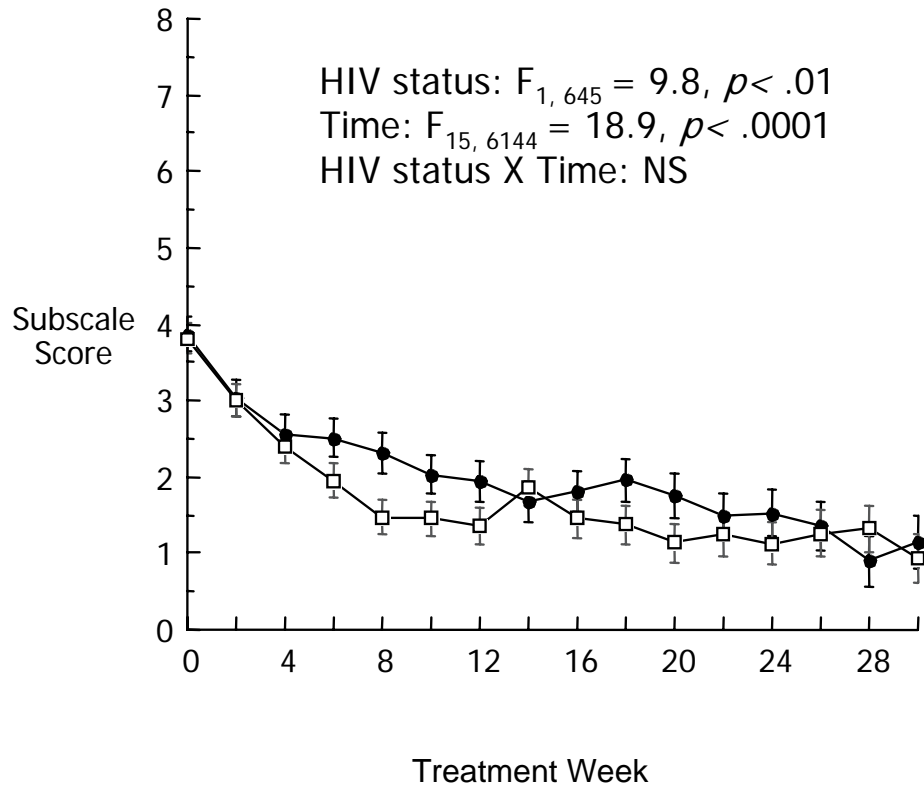
Maximum possible score: subscale = 30; individual items = 6; higher score = more risky behavior

# HIV Risk-taking Behavior Scale

## Representative Individual Items

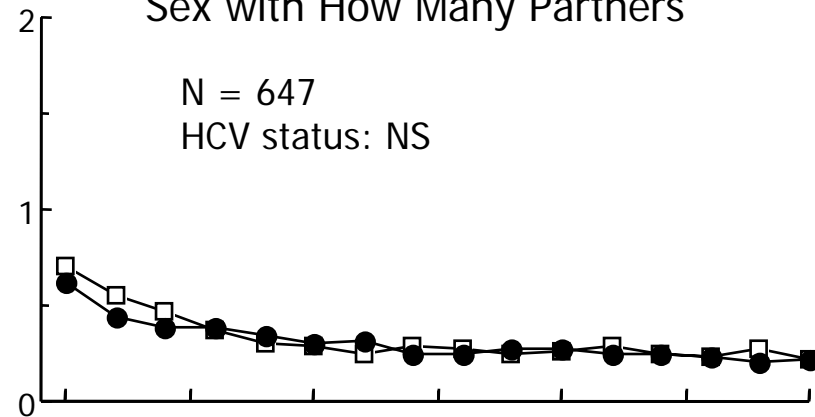
### Sex Risk Subscale

HIV status:  $F_{1, 645} = 9.8, p < .01$   
 Time:  $F_{15, 6144} = 18.9, p < .0001$   
 HIV status X Time: NS



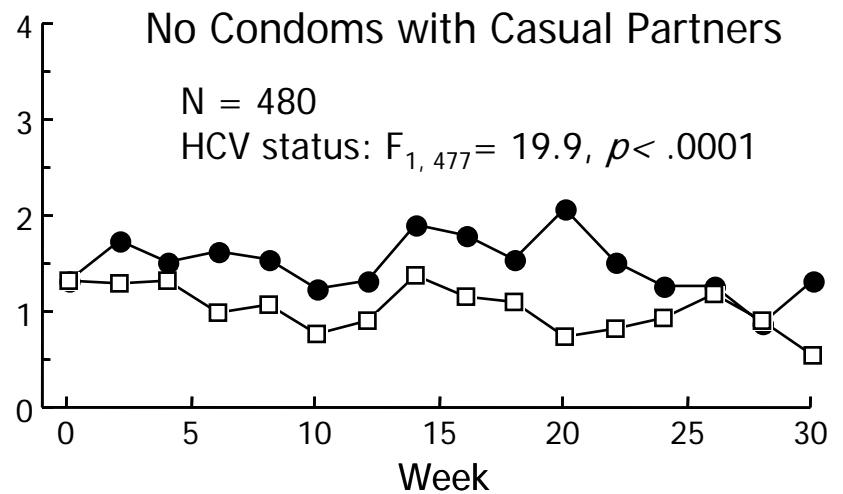
### Sex with How Many Partners

N = 647  
 HCV status: NS



### No Condoms with Casual Partners

N = 480  
 HCV status:  $F_{1, 477} = 19.9, p < .0001$



● HCV negative  
 □ HCV positive

Maximum possible score: subscale = 30; individual items = 6; higher score = more risky behavior



## Conclusions

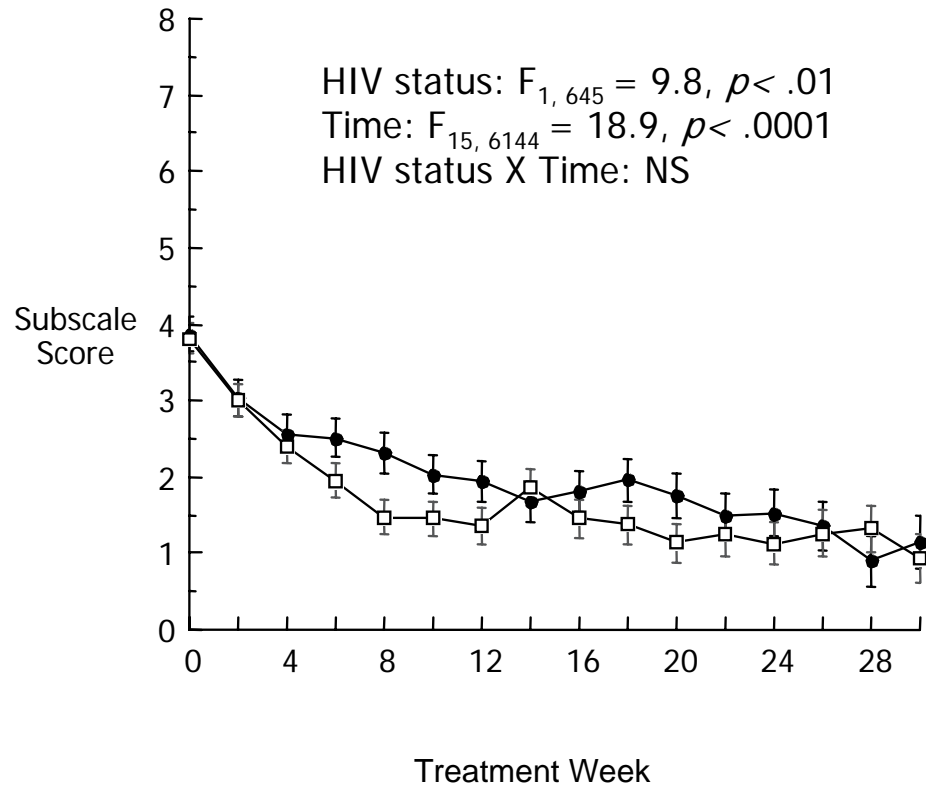
- HIV-risk behaviors decreased in polydrug users receiving combined pharmacological and behavioral treatments.
- Polydrug users who were already infected with hepatitis C reported a steeper decline in risky behaviors than non-infected patients.

# HIV Risk-taking Behavior Scale

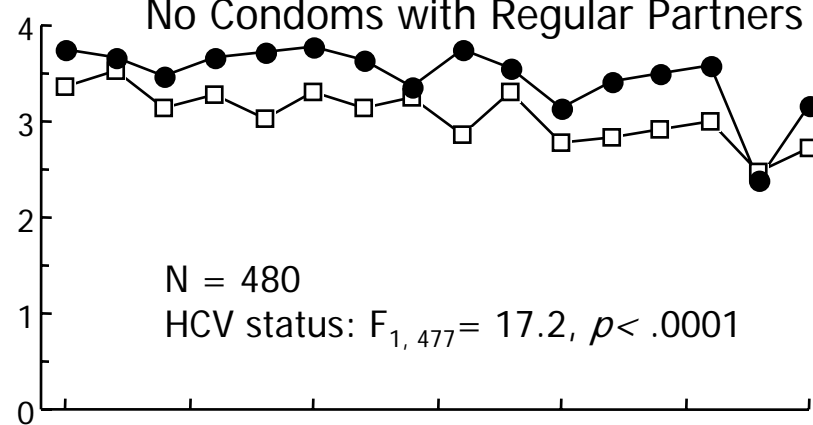
## Representative Individual Items

### Sex Risk Subscale

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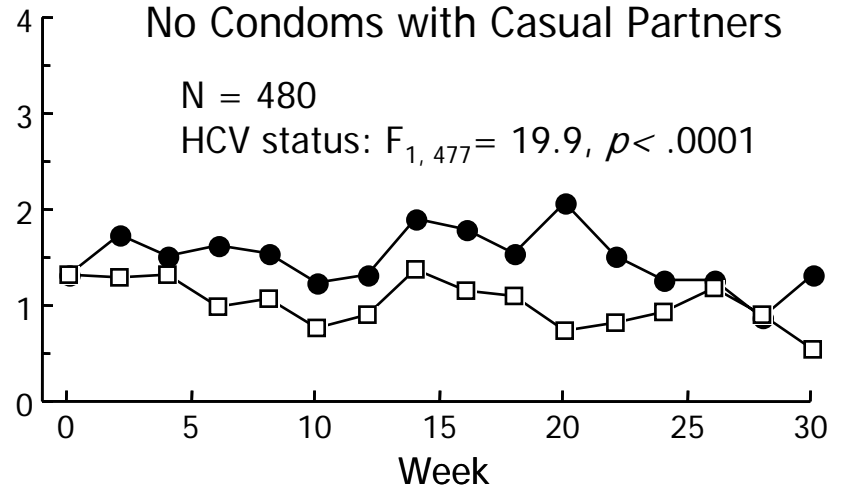
### No Condoms with Regular Partners



N = 480

HCV status:  $F_{1, 477} = 17.2, p < .0001$

### No Condoms with Casual Partners



N = 480

HCV status:  $F_{1, 477} = 19.9, p < .0001$

● HCV negative  
 □ HCV positive

Maximum possible score: subscale = 30; individual items = 6; higher score = more risky behavior

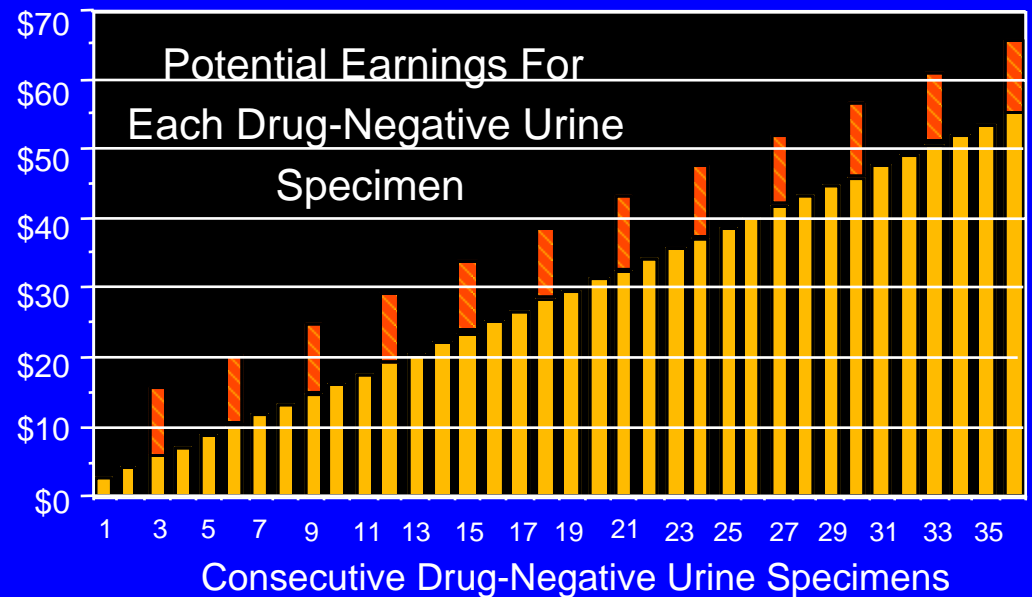
# Contingency Management

Voucher given for each cocaine-negative urine specimen.

## Values

- increase with each consecutive negative.
- reset at each positive or miss
- maximum total \$1155 over 12 wks

Exchangeable for goods and Services.



## Cognitive Behavioral Therapy

Four specific skills taught:

Coping skills to deal with stress

Relapse prevention skills to deal with craving

Development of alternative (non-drug) reinforcers

HIV Risk Reduction Education

Delivered by masters-level counselors in 12 manualized group sessions, monitored for adherence.