Application of the Mindfulness-Based Stress Reduction Program in Subjects Living with HIV Infection

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Mindfulness and HIV

✓ **Current scenario**

✓ **Impact of emotional disturbances**

✓ **Intervention**

✓ **Practice!!**

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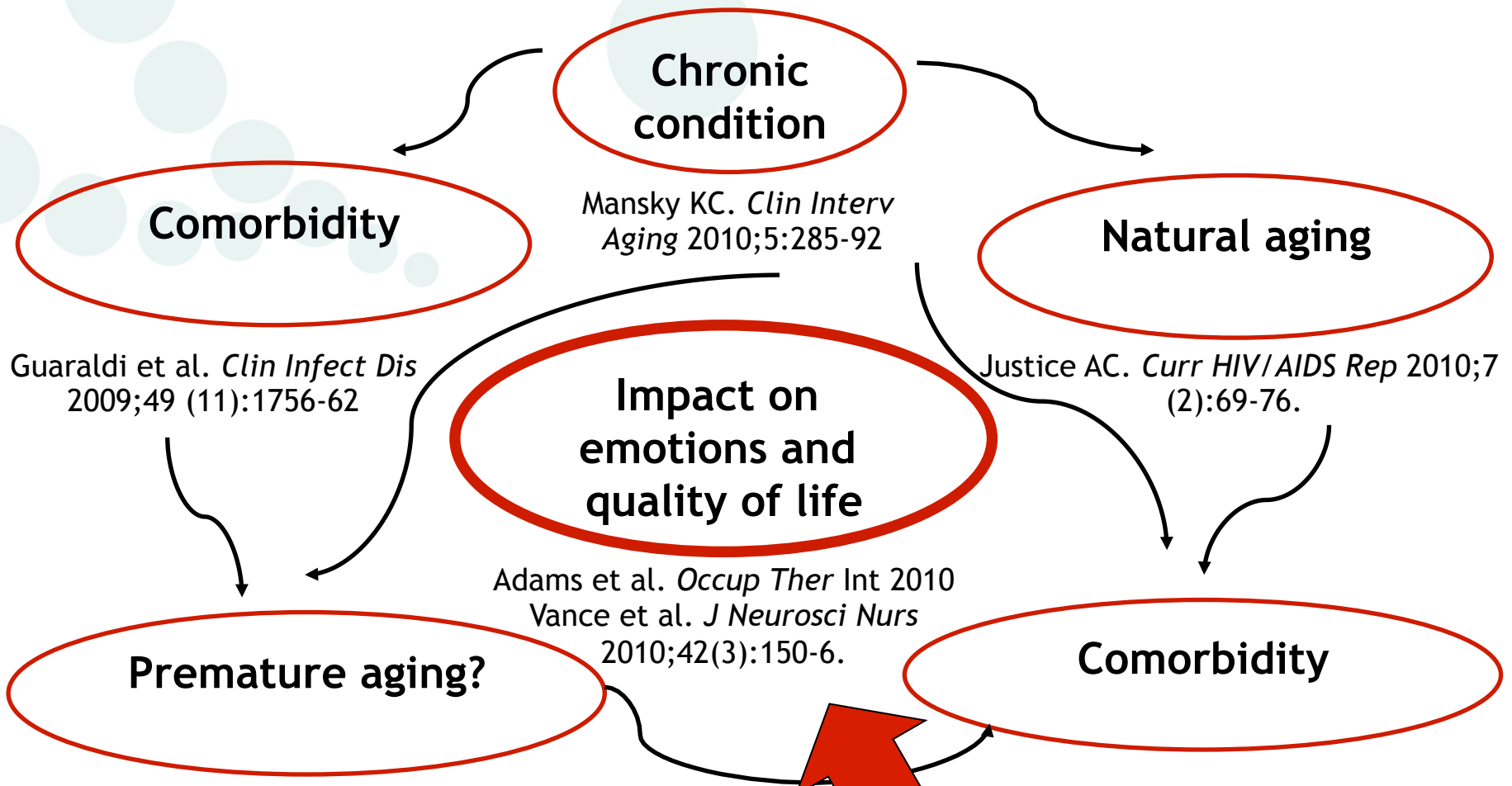www.flsida.org

Current HIV scenario

NEWLY DIAGNOSED

- Emotional reactions related to initial phases
- Adjustment (sex, ARV...)

LONG-TERM SURVIVORS

- Physical and emotional fatigue
- Comorbidities

Current HIV scenario

Chronic condition

Mansky KC. *Clin Interv Aging* 2010;5:285-92

Comorbidity

Guaraldi et al. *Clin Infect Dis* 2009;49 (11):1756-62

Natural aging

Justice AC. *Curr HIV/AIDS Rep* 2010;7 (2):69-76.

Impact on emotions and quality of life

Adams et al. *Occup Ther* Int 2010
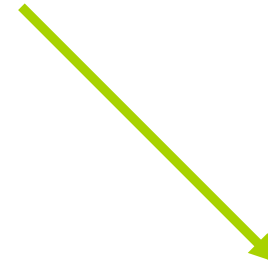Vance et al. *J Neurosci Nurs* 2010;42(3):150-6.

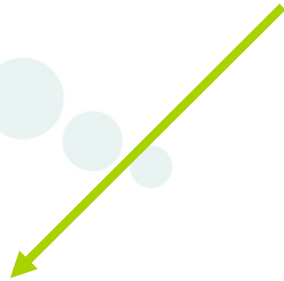Premature aging?

Desai et al. *Curr HIV/AIDS Rep* 2010;7 (1):4-10.

Comorbidity

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PROCESS OF ADAPTATION TO ILLNESS
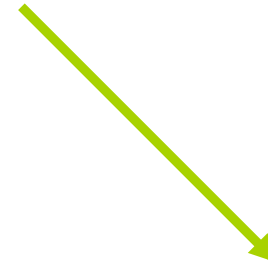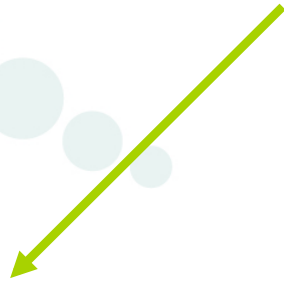
DEPRESSION

ANXIETY

Mindfulness and HIV

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Mental Health Disorders and HIV

	Hazard ratio, adjusted[a]	
Diagnoses	All-cause mortality	AIDS-defining Illness
Any mental health disorder	1.17 (1.01–1.35)	1.16 (0.99–1.37)
Schizophrenia	1.40 (1.11–1.77)	1.00 (0.74–1.35)
Bipolar disorders	1.32 (1.03–1.69)	1.15 (0.85–1.55)
Depressive disorders	0.93 (0.80–1.07)	1.02 (0.87–1.20)
Anxiety disorders	0.80 (0.67–0.97)	0.83 (0.67–1.04)
Substance use disorders	1.23 (1.07–1.41)	1.19 (1.02–1.39)

Nurutdinova et al. *AIDS* 2012

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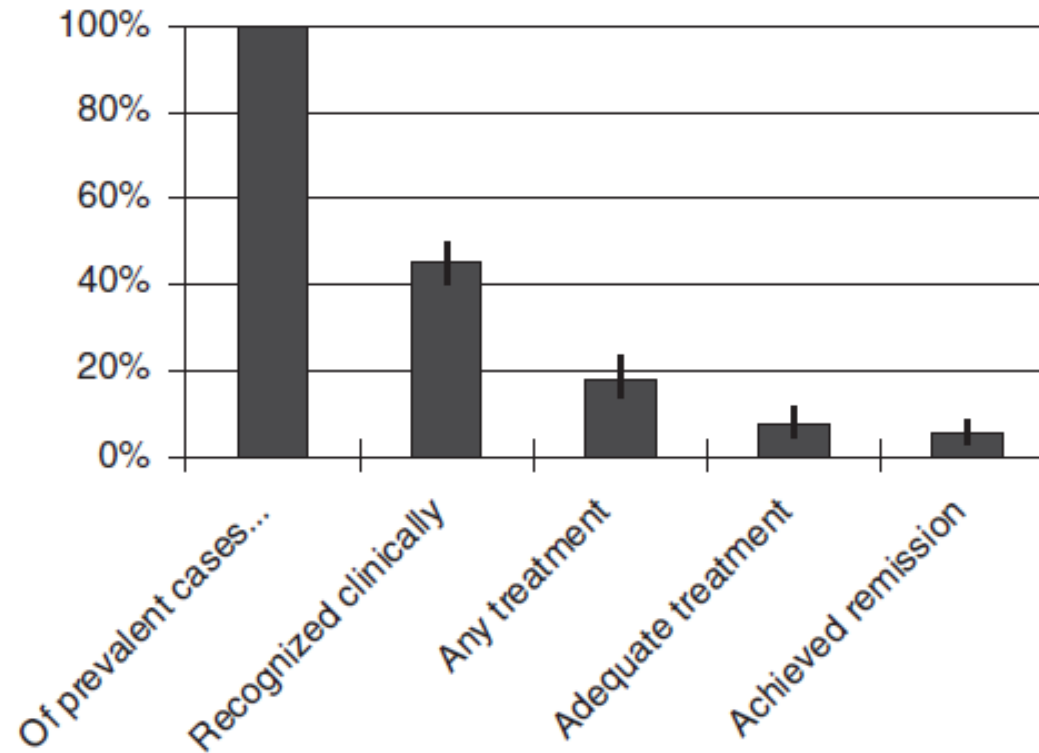
Depression and HIV

Pence et al. *AIDS* 2012

Depression - Psychiatric Disorders - HIV

- Chronic depressive treatment: Death relative risk double in women, four if CD4 <200

- Psychiatric disorders: Lower rate of viral suppression and faster virological failure

- Depressive processes: Low adherence and suicidal ideation (31% in new diagnosed)

- Elevated number of stressful life events and less social support: Faster progression to stage C

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Depression and HIV

TABLE 1. Characteristics of HIV-positive subjects with and without major depression

|	HIV-Positive Subjects With Major Depression*	HIV-Positive Subjects Without Major Depression**	P
Age, years	33.75 ± 7.07	34.87 ± 5.04	0.479 P = 0.636
Education, years	12.42 ± 2.61	12.73 ± 1.75	−0.377 P = 0.715
Length HIV status known, years	5.6 ± 3.08	7.1 ± 3.44	−1.151 P = 0.260

Note: Values are means ± SD unless otherwise noted. *n = 12; men = 8, women = 4. **n = 15; men = 11, women = 4.

TABLE 2. Immunologic and serologic markers of HIV progression

	Depressed Patients	Nondepressed Patients	P
CD4 Absolute Count	494.6 ± 97.8	640.4 ± 261.32	1.827, P = 0.07
CD4 Percentage	25.06 ± 8.35	27.35 ± 7.23	−0.763, P = 0.45
CD8 Absolute Count	1145.6 ± 431.8	1234.6 ± 706.2	−0.382, P = 0.70
CD8 Percentage	53.11 ± 10.5	48.38 ± 10.08	−1.213, P = 0.23
CD16 (NK) Absolute Count	64.11 ± 41.9	181.6 ± 100.86	−3.627, P = 0.001
CD16 (NK) Percentage	2.92 ± 2.07	7.80 ± 3.75	3.741, P = 0.001
CD4/CD8 Ratio	0.50 ± 0.27	0.59 ± 0.22	−1.007, P = 0.32
β_2-Microglobulin, mg/L	2.72 ± 0.55	2.88 ± 1.31	0.303 P = 0.76
HIVp24 Antigen Testing	negative	negative	

Alciati A et al. *Psychosomatics* 2001

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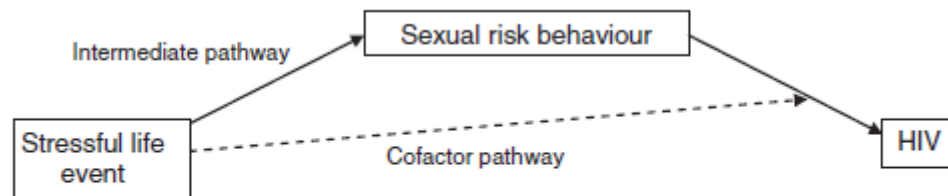
Stress and HIV

Fig. 1. Hypothesized causal pathways between stressful life events and HIV infection.

	None (n = 69)	1–2 (n = 74)	3–4 (n = 48)	5 or more (n = 49)	P value
		Number of stressful life events			
Median number of HIV+/UK partners (IQR)	7 (2–25)	7 (3–20)	5 (1–24)	8 (3–24)	0.57[a]
Unprotected receptive oral sex with exposure to ejaculate	30%	38%	27%	43%	0.36[b]
Any anal sex	61%	65%	60%	73%	0.25[b]
Insertive anal sex without a condom	19%	23%	27%	29%	0.18[b]
Insertive anal sex with partial condom use	16%	19%	25%	18%	0.53[b]
Receptive anal sex without a condom	13%	19%	17%	29%	0.06[b]
Receptive anal sex with partial condom use	7%	15%	8%	16%	0.27[b]

Burchell et al. *AIDS* 2010

Stress and HIV

Table II. Hierarchical Regression Model Predicting CD4+ T-cell decline (six-month follow up) from perceived stress (baseline). (N = 100)

Block	Block 1β	Block 1 & 2β	Block 1, 2, & 3β
Demographic, medical, and treatment background			
Age	−.12	−.04	−.06
Gender	−.10	−.08	−.08
Antiretroviral treatment	.06	.00	.00
Time under antiretroviral treatment	−.01	.03	.06
Education	−.01	−.03	−.06
Source of income	.29**	.10	05
Adherence score	.13	.00	−.04
Baseline disease variables			
CD4+ T-lymphocyte cell [Time 1]		.72**	.74**
Viral Load [Time 1]		−.15*	−.14**
Psychological variable			
Perceived stress (PSS) [Time 1]			−.15*

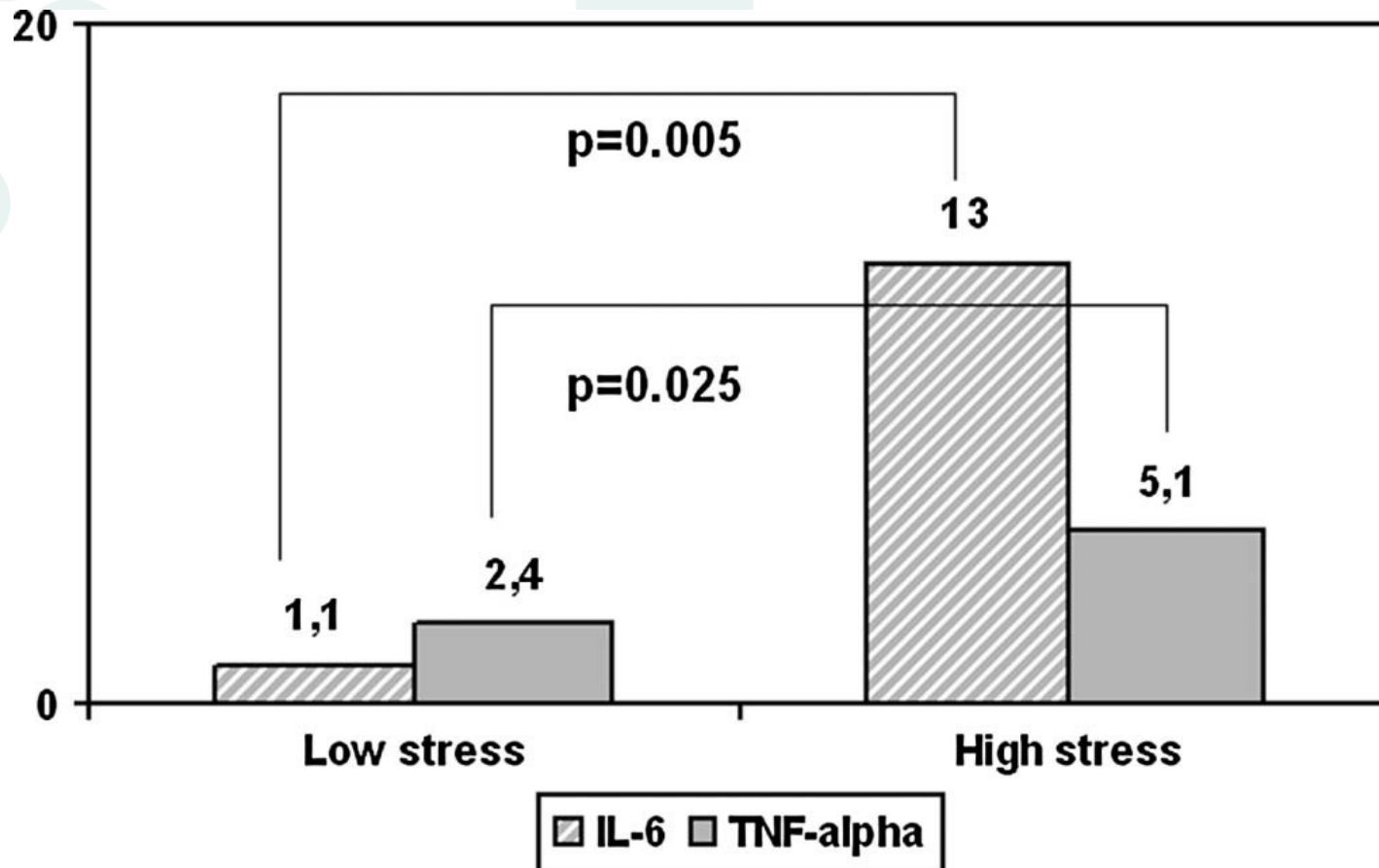Note: β: Standardized regression coefficient. *p < .05: **p < .01.

6 months

59 men / 41 women

Remor E et al. *AIDS Care* 2007

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Stress and HIV

Fumaz CR et al. *J Acquir Immune Defic Syndr* 2009

Stress and HIV

Variables	Coefficient	Standard Deviation	P Value
Age	-0.11	0.07	1.14e-01
Gender			
Male	-2.38	2.04	2.43e-01
Infection Route			7.26e-01
Same-sex intercourse	6.38	4.83	
Heterosexual			
Years since HIV diagnosis	0.004	0.02	8.57e-01
Years on cART	-0.005	0.02	8.32e-01
Type of cART			1.92e-01
NNRTI	-2.11	2.49	
PI	-0.19	2.63	
CD4 T cells	0.002	0.002	3.92e-01
CD8 T cells	0.0006	0.002	7.61e-01
Ratio CD4/CD8	0.09	0.04	4.48e-01
Coinfection HBV	-2.88	1.53	6.09e-01
Coinfection HCV	-2.38	2.47	3.37e-01
Concomitant medication	0.24	1.47	8.71e-01
Be employed	-9.75	4.47	**2.92e-02**
Stable partner	-1.68	1.38	2.26e-01
Physical exercise	-0.07	0.37	8.40e-01
Good sleep quality	-1.25	1.49	4.05e-01
Healthy Diet	-2.94	1.38	**3.39e-02**
Protected sexual intercourse	-2.12	1.91	2.69e-01
Drugs intake	-0.45	1.64	7.80e-01
Alcohol	-2.03	2.00	3.10e-01
Smoking	0.05	1.71	9.72e-01
Years after stopping smoking	-0.20	0.27	4.43e-01
Adherence to cART	-6.13	2.69	**2.28e-02**
PSS10	0.49	0.05	**5.82e-17***
HADS	0.37	0.08	**2.12e-05**
HADS Anxiety	0.59	0.13	**1.70e-05**
HADS Depression	0.64	0.20	**1.50e-03**
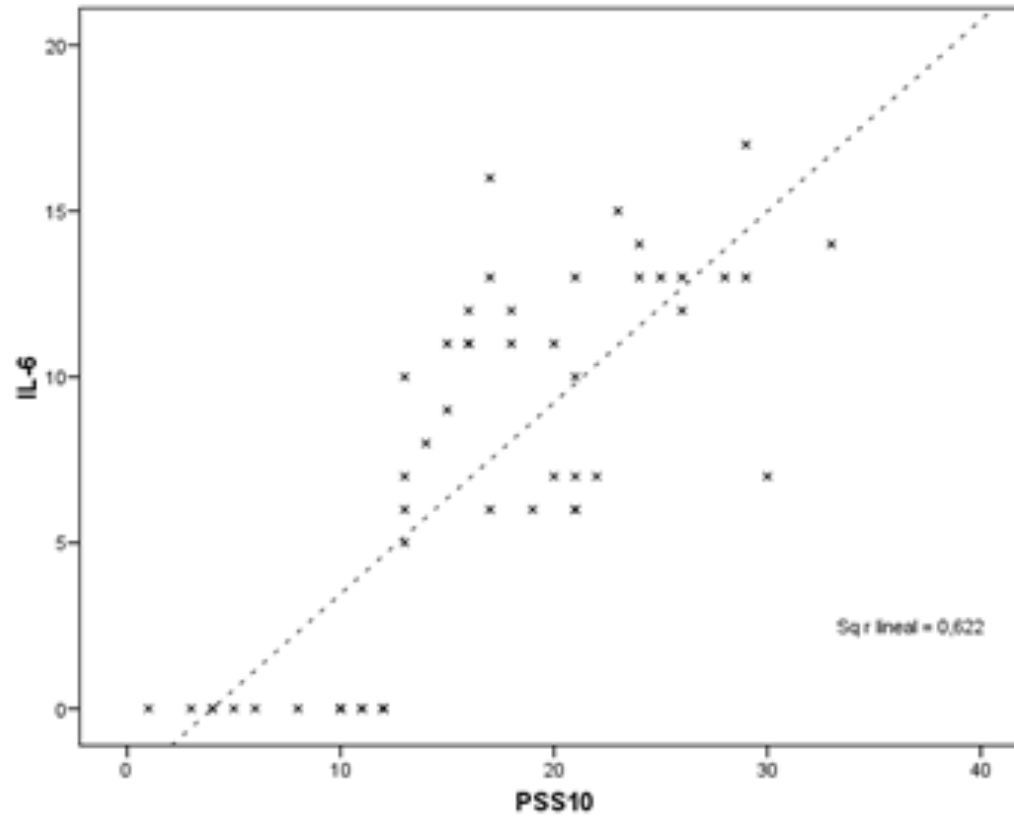
Fumaz CR et al. *Brain, Behav and Immun* 2012

Stress and HIV

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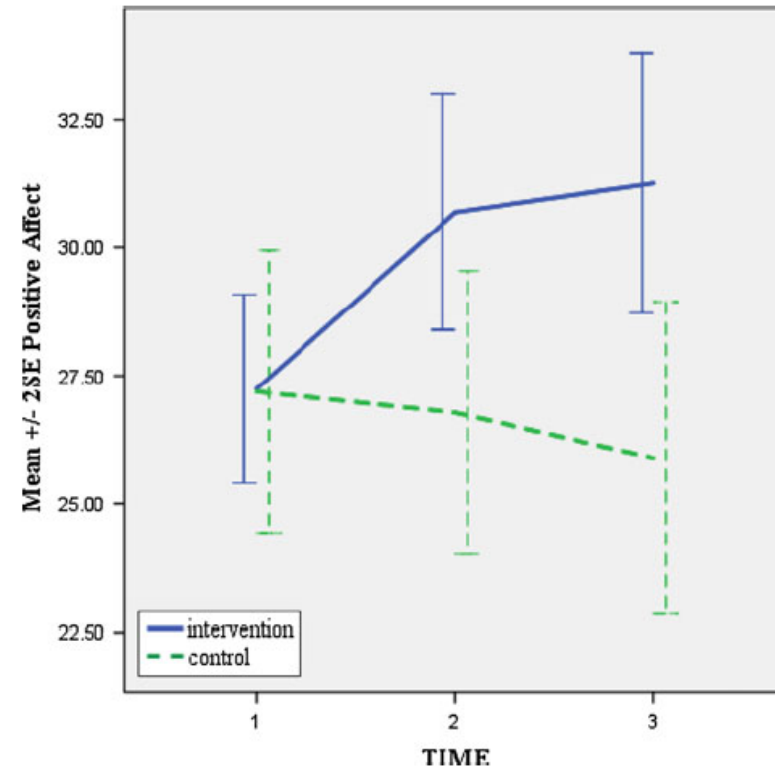
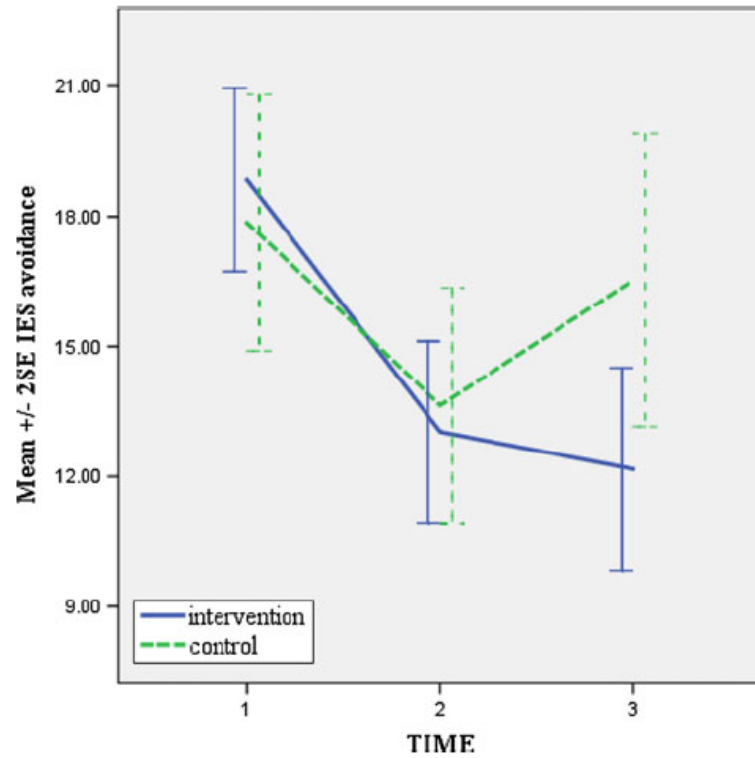✓ **Practice!!**

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Mindfulness

- Structured intervention adapted from Kabat-Zinn (1990), consisting of eight 3-hour weekly sessions and a daylong retreat with about an hour or more of homework per day, 6 days per week.

- Designed to develop mindfulness: a consciousness focused on the present moment free of judgment, promoting an attitude of acceptance. Meditation techniques whilst sitting and in movement, yoga, conscious breathing and body exploration to encourage the participants to appreciate the present moment instead of focusing on worries about future or past, often ruminative and automatic, and potential generators of psychological stress.
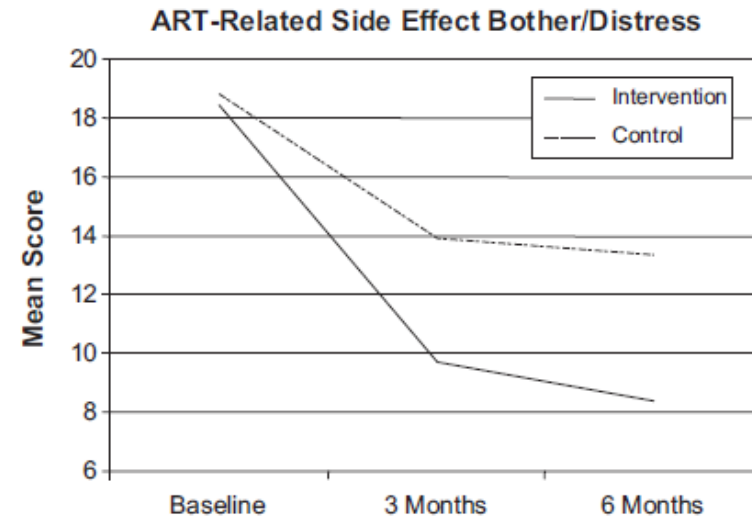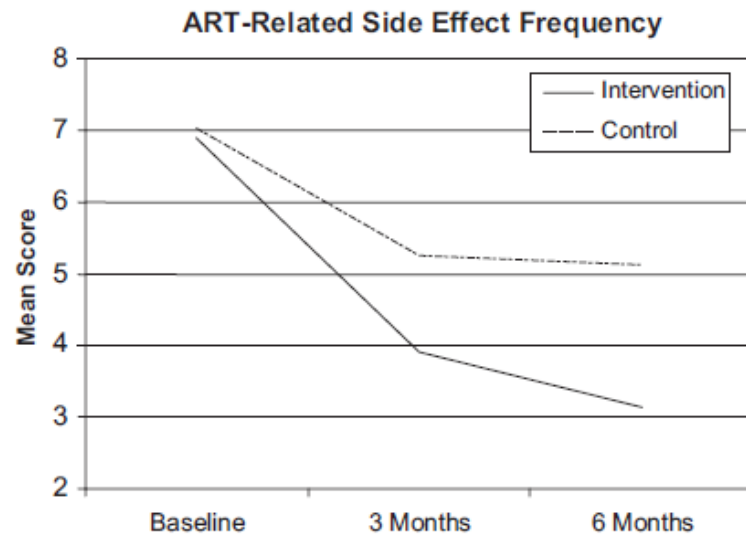
Mindfulness and HIV

Creswell JD et al. *Brain Behav Immun* 2009
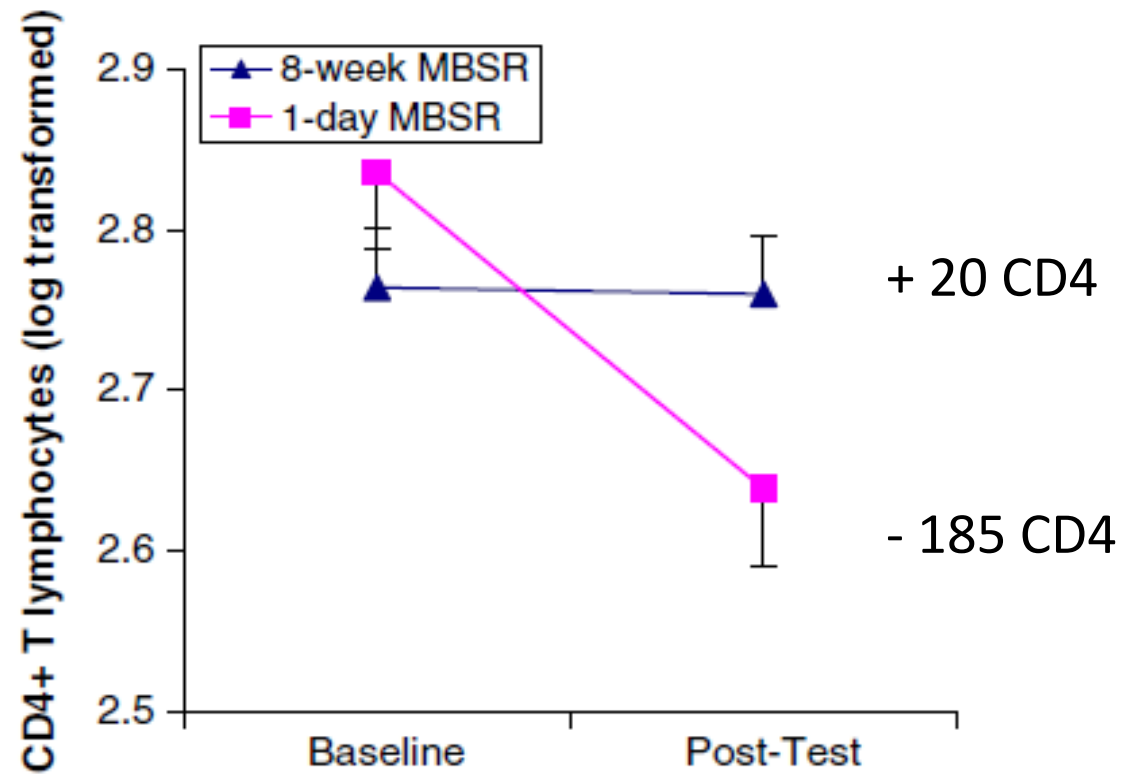
Mindfulness and HIV

Gayner et al. *J Behav Med* 2011

Mindfulness and HIV

Duncan et al. *J Pain Symptom Manage* 2012

Mindfulness and HIV

Fumaz CR et al. 2nd International Workshop on HIV & Aging.
Baltimore, USA (Oral communication)

Mindfulness and HIV

Normal living: Post

Bar chart values:
- Energy: Intervention 0, Control 76, p = 0.01
- Pain: Intervention 8, Control 23, p = 0.03
- Emotional reactions: Intervention 0, Control 48, p = 0.001
- Sleep: Intervention 12, Control 53, p = 0.02
- Social isolation: Intervention 0, Control 40, p = 0.001
- Physical mobility: Intervention 19, Control 22, p = 0.008

Legend: Intervention / Control

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Mindfulness and HIV

Daily Life: Pre

Fumaz CR et al. 2nd International Workshop on HIV & Aging.
Baltimore, USA (Oral communication)

Mindfulness and HIV

Daily Life: Post

Work — 21 / 65 — 0.005
Looking after the home — 47 / 60 — 0.42
Social life — 31 / 55 — 0.14
Relationships at home — 5 / 50 — 0.001
Sex life — 67 / 60 — 0.74
Interests and hobbies — 15 / 50 — 0.01
Ability to take holidays — 15 / 40 — 0.07

■ Intervention ⬚ Control

Mindfulness and HIV

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Practice

Exercise 1: Raisin exercise

Practice

Exercise 2: Body Scan

Practice

Sharing experiences

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