

Hormone Replacement Therapy, Homocysteine, and Cognition in Elderly Latinas

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Why examine Hormone Replacement Therapy in relation to cognitive function?

- ◆ **Half of an adult women's life is postmenopausal.
25% of women use HRT**
- ◆ **Does HRT influence cognition through cardiovascular mechanisms?**
- ◆ **Latinas are at increased risk for diabetes and cardiovascular disease & may be at higher risk for cognitive impairment**
- ◆ **Limited access to medical care may influence the use of HRT in older Latinas**

What is the role of Homocysteine in the relationship between HRT and Cognition ?

- ◆ **Homocysteine (HCY) has been associated with increased risk of cardiovascular disease**
- ◆ **Observational and Clinical trials have found that HRT lowers HCY**
- ◆ **HCY has an inverse association with cognitive functioning**
- ◆ **Does HCY have a direct effect on brain functioning?**

Sacramento Area Latino Study on Aging

- **SALSA -Observational Cohort Study**
- **1,789 People aged 60+, 1049 Women**
- **Sample Selection: targeted high density zip codes, network referrals**
- **Latino ancestry: 85% Mexican**
- **In home interview**
 - ◆ **Clinical Assessment**
 - ◆ **Cognitive Screening**
 - ◆ **Neurological exam**

Purposes of the Present Study

- ◆ 1) HRT \implies Cognitive scores
- ◆ 2) HCY \implies Cognitive scores
- ◆ 3) HRT*HCY \implies Cognitive scores

Measures

- ◆ **HRT: Prescription medicine inventory in home**
 - **21% use**
 - **98% Estrogen only, 80% on .625 of Premarin**
- ◆ **CVD: Lipids, Homocysteine, Blood Pressure**
- ◆ **Modified Minimental State Exam (3MSE) (0-100)**
- ◆ **Word List Learning Test (0-15)**
- ◆ **Demographics: Age, Education, Income**
- ◆ **Acculturation (Cuellar, 1984)**

Analysis Plan

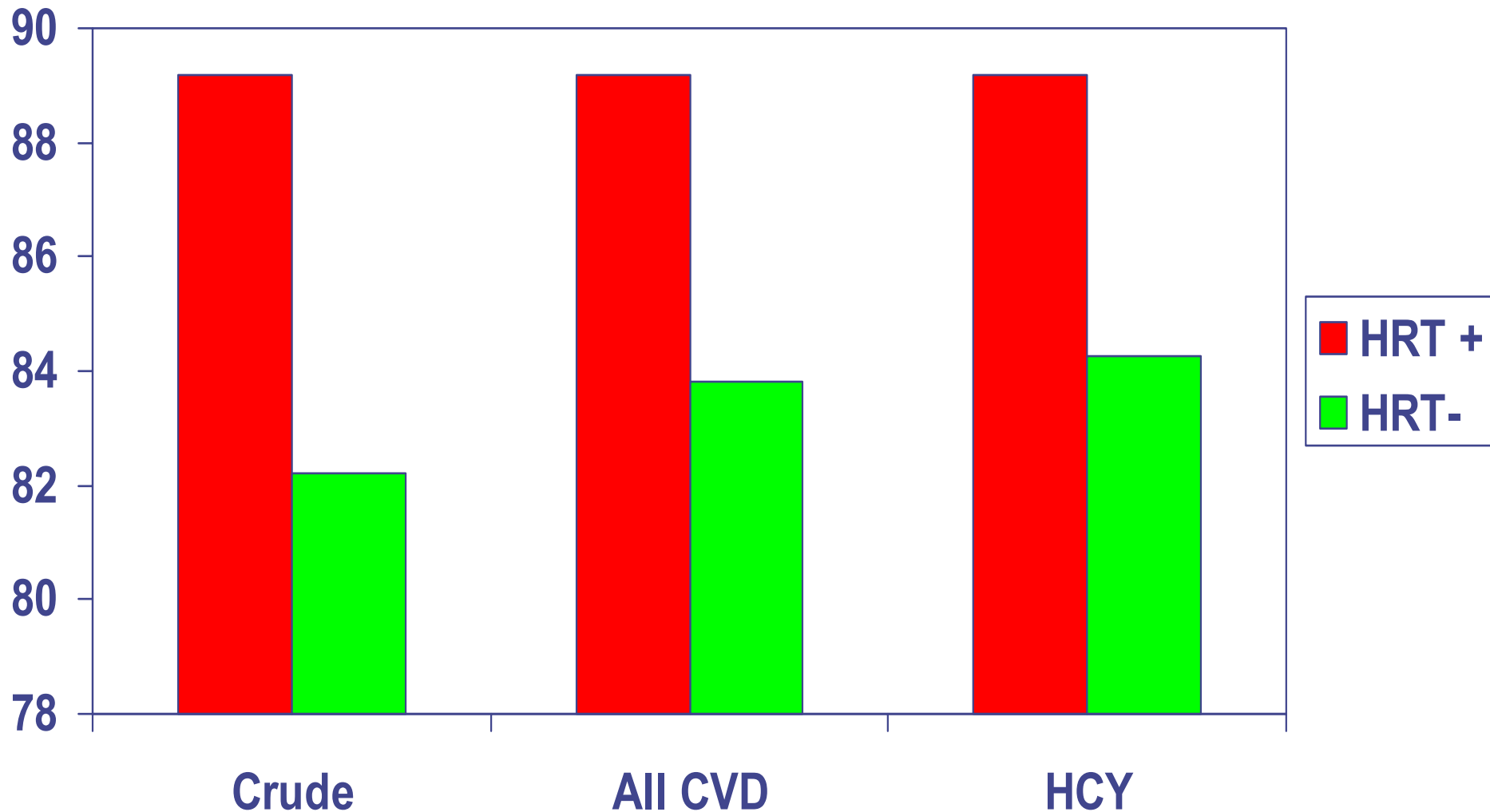
- ◆ **Cross Sectional Analyses of Observational Study**
- ◆ **Multiple Linear and Logistic Regression Models**
- ◆ **Three Modeling Steps:**
 - **Univariate/unadjusted**
 - **Interaction (2 way product terms)**
 - **Confounding (Model Fitting)**

Hormone Replacement Therapy and Cognitive Scores

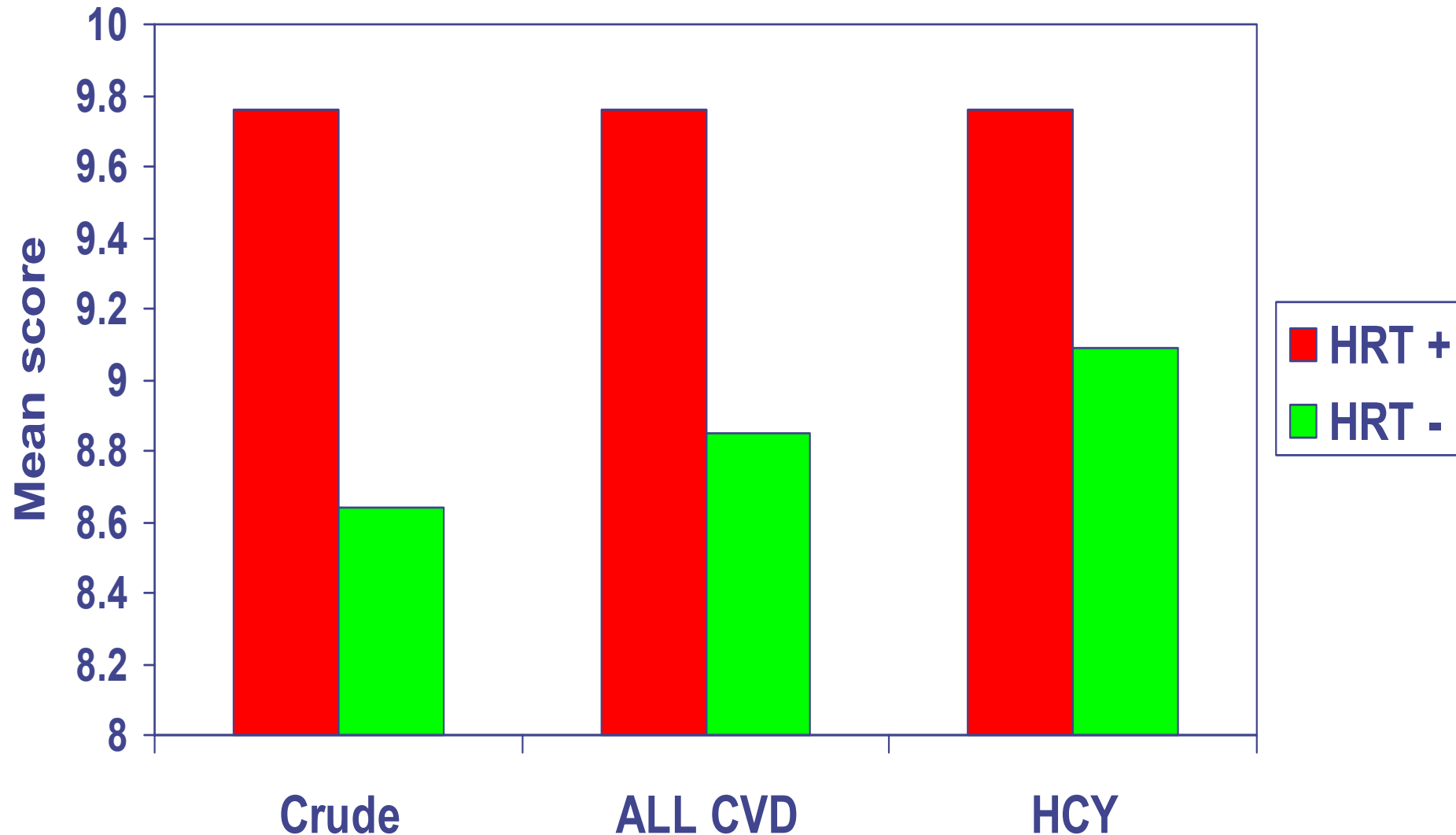
	3MSE	Word List
HRT only	6.79***	1.11***
HRT + CVD	6.79***	1.07***
HRT + Ankle arm BP	5.66***	0.86***
HRT + Lipids	7.10***	1.20***
HRT + Homocysteine	4.92***	0.67**

*****p<.0001, **p<.001**

Effect of Adjustments on Mean Differences in 3MSE by HRT Status from a Linear Regression Model



HRT Use and Cognitive score (Word List) with Adjustments from a Linear Regression Model

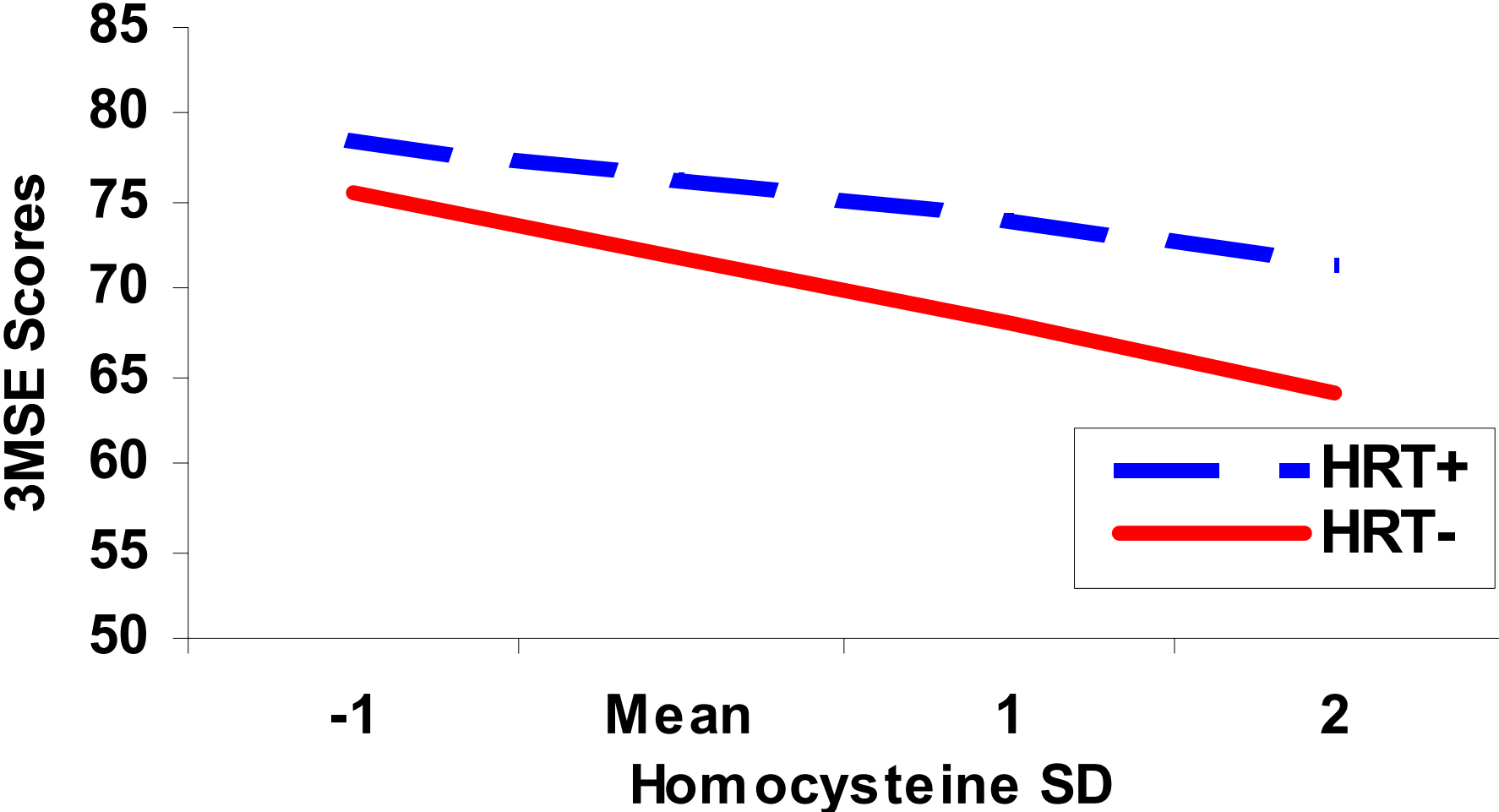


Homocysteine and Cognitive scores from a Regression Model (Coefficients)

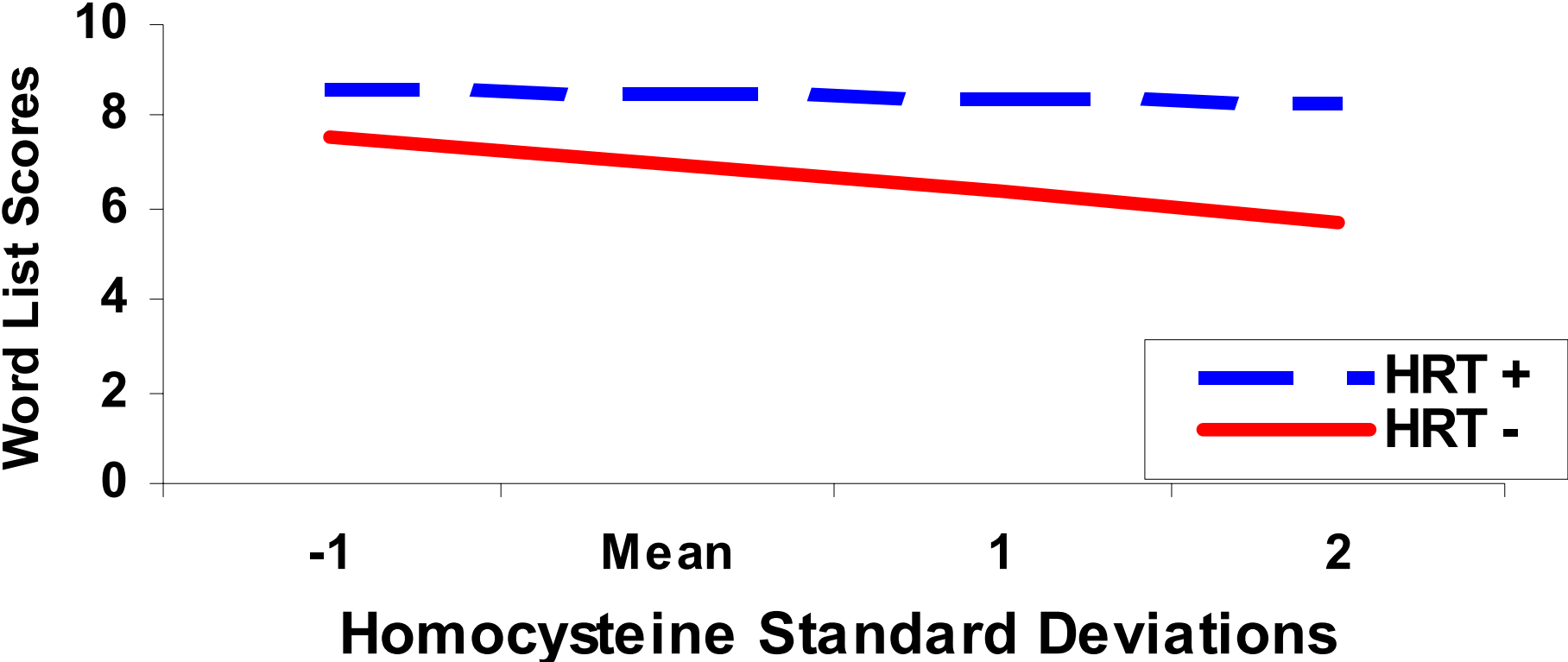


*****p<.0001, **p<.001**

Homocysteine and 3MSE by HRT Status



Homocysteine and Word List scores by HRT Status



Limitations and Strengths

- ◆ Cross Sectional Analysis
- ◆ Duration of HRT use unknown
- ◆ Able to adjust for creatinine, B12 and Folate, prevalent cardiovascular disease, arterial disease and lipids
- ◆ Only paper that has examined mechanisms of HRT on cognition specifically in a Latina sample

Conclusions

- ◆ Homocysteine may be one of the mechanisms through which HRT affects cognitive performance
- ◆ Uniform results for both a measure of global mental functioning and specific measure of verbal episodic memory
- ◆ Future studies can determine whether Homocysteine has a direct effect on brain functioning independent of cardiovascular mechanisms