# Objective and Subjective Stress Differences: Foreign-Born and US Native Adults in Boston Communities

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# Overview

- Community engagement and partnerships
- Measures of biological and subjective stress
- Timeline
- Preliminary Pilot Results:

Discuss differences in stress for foreign-born and US adults living in ‘high-risk’ Boston communities, based on ‘Health of Boston’ (Boston Public Health Commission) risk identifiers: e.g., zipcode, density, poverty, unemployment

# HORIZON Center UMB and Project Community Partners

- **COHS**: Cherishing our Hearts and Souls (founded 1997)
  Grassroots coalition (residents, community organizations, professionals)
  Minority health and health disparities.
  Roxbury, Dorchester, and surrounding inner Boston neighborhoods
- **CRAB**: Community Research Advisory Board (founded 2005 by COHS)
  Mission to serve as bridge between researchers and community
  Incorporated nonprofit, 2012
  (Organizational support moved from HSPH to UMB 2009)
- **Project Partner**: Christopher Thompson, EdD, Executive Director of Quincy Geneva Housing, Inc. Grove Hall area, Roxbury/Dorchester
  Membership links with CRAB and COHS
  Participated in initial research plan, community liaison, recruitment, community educational follow-up

**TEAM**

•Our team includes UMB and RCC students Research Assistants, many of whom are first generation in higher education and international students

•RAs helped with translating materials, recruiting, testing

•Community locations: YMCAs, Churches, Vine St. Center, UMB campus

# AIMS

***Improve community engagement.***

- Partnership for recruitment, implementation of the study, and dissemination of findings.

***Identify stress-related differences between foreign and US-born adults.***

# Pilot Study

## Population: N = 50 (about 1/2 of sample for preliminary results)

Foreign-born and US Natives Boston (ages 18-30, *M* = 21.80, 65% female, 50% foreign born)

## Subjective Stress and Scales (available in 4 languages):

Perceived Stress **In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?**

CHAOS (Confusion, hubbub, order) **At home we can talk to each other without being interrupted**

City Stress Index **Vandalism is common in my neighborhood**

Lifetime Discrimination **Were you discouraged by a teacher or advisor from seeking higher education?**

Daily Discrimination **Do people act as if they think you are dishonest?**

Social Identity-**How much pride do you have in your heritage group/ how much identify**

**Subjective Social Status Ladder (from 1-10)**

Modern Racism-(assesses negative biases) **Immigrants should not push themselves where they are not wanted**

Self Esteem- **I take a positive attitude toward myself.**

PANAS 20 emotion words: **baseline and post (excited, proud, strong, hostile, jittery, guilty)**

## Biological Stress and health measures:

Hair Cortisol-biomarker of chronic stress
Waist hip ratio, resting blood pressure
Cardiovascular indices

## Cognitive and Task measures (non-language based):

Stroop
Emotion Go No Go
Raven's Fluid Intelligence

## Controls: to control for factors that may influence outcome measures

Prescription meds
Birth control or any corticosteroid
Hair treatment: wash, dye, weave, straighten, etc.

# Timeline

Arrival

Consent

Attach CV monitor

*Objective Stress Measures*

Hair

Resting BP

*Subjective Stress Measures*

PSS

discrimination

Debrief

Thanked and paid

# Hair cortisol

Hair cortisol (hCORT) is a relatively new biomarker of chronic stress via long-term alterations in hypothalamus-pituitary-adrenal axis (HPA) activity. Under stress, cortisol is released.

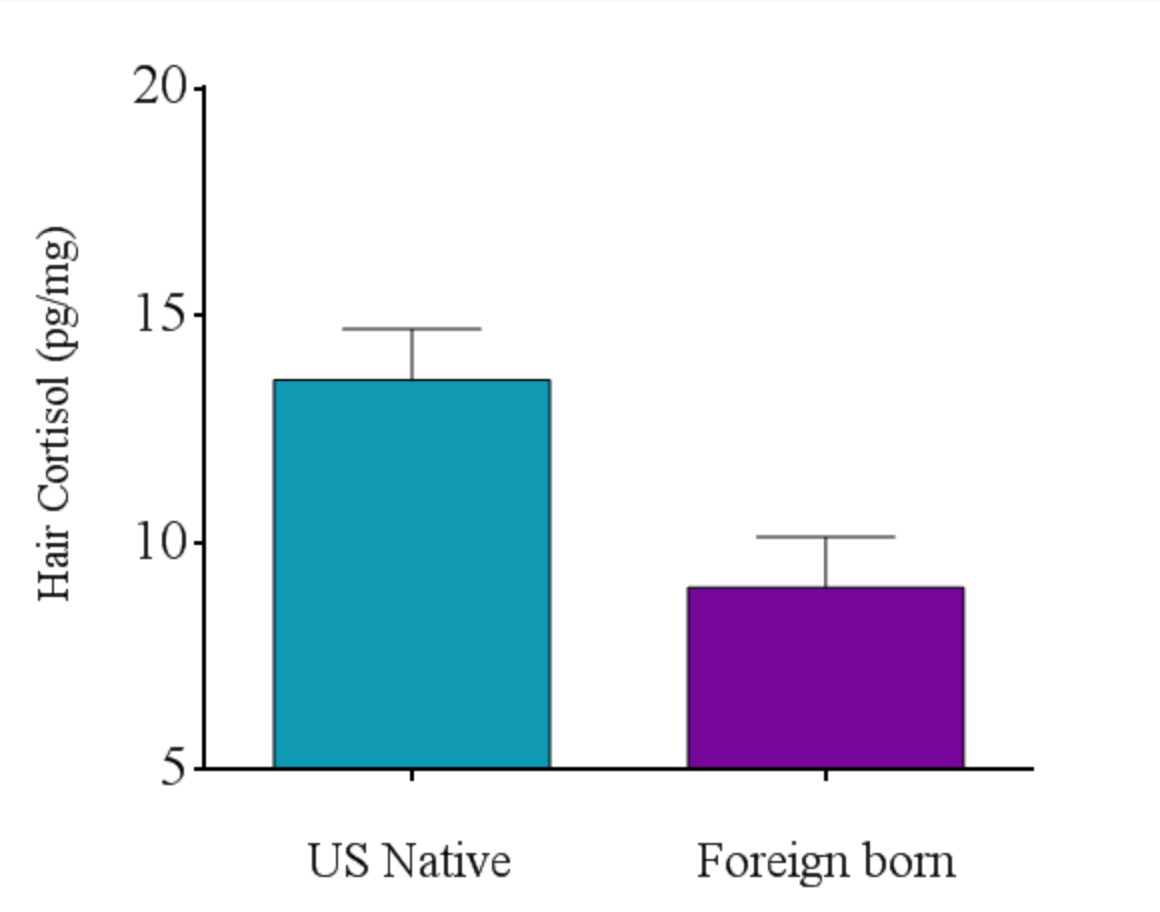
Since hair grows 1 cm per month, 3 cms can measure cortisol remnants reflecting the past 3 months (Davenport, Tiefenbacher, Lutz, Novak, & Meyer, 2006).

We are the first research group to use hair cortisol to examine social and structural factors with this objective chronic stress measure: discrimination, poverty, social exclusion and status, acculturation related stress.

**RESULTS:** *Objective stress measures*

*Hair Cortisol*

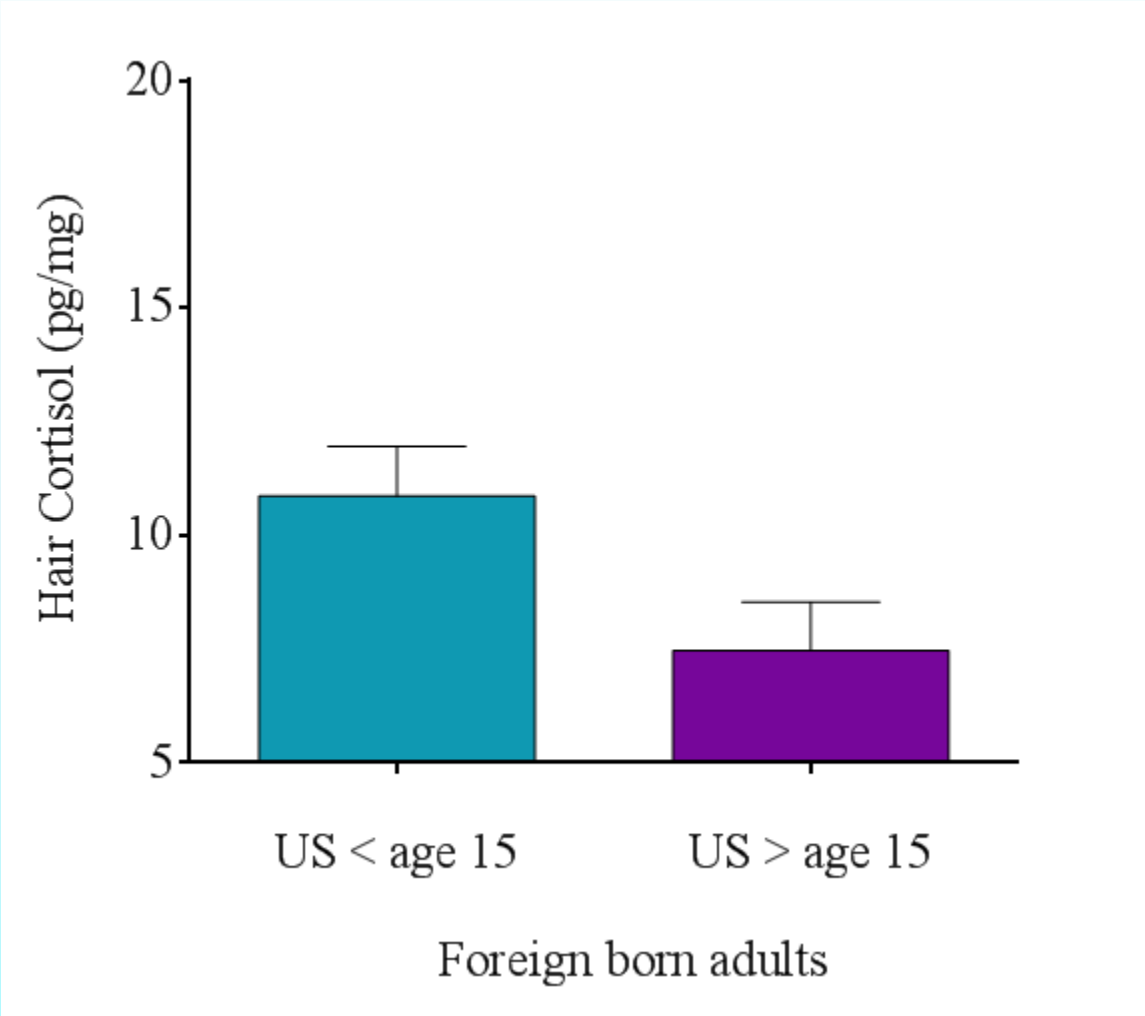
*US natives are slightly higher than the foreign born individuals*




*t(44)=1.6, p<.10,*

# Hair Cortisol

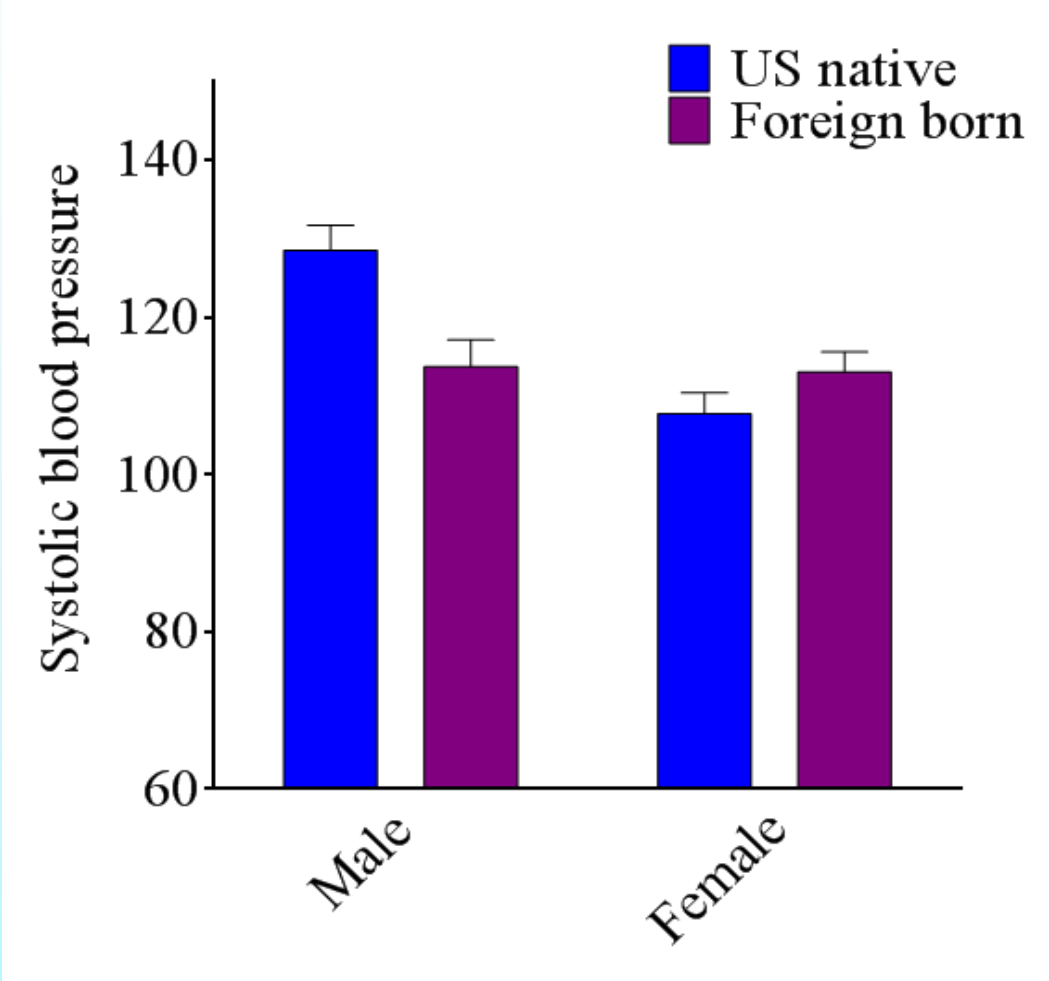
*When examining only foreign-born individuals, those who immigrated to the US before the age of 15 have higher hair cortisol.*




$t(21)=2.06$, $p<.052$,

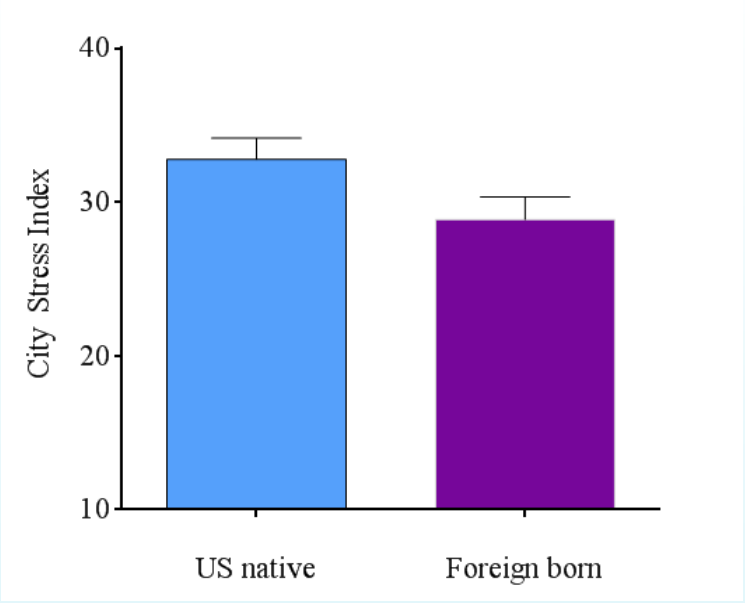
# **Blood pressure:** *Interaction Nativity x sex*

*Male US residents showed the highest resting SBP*

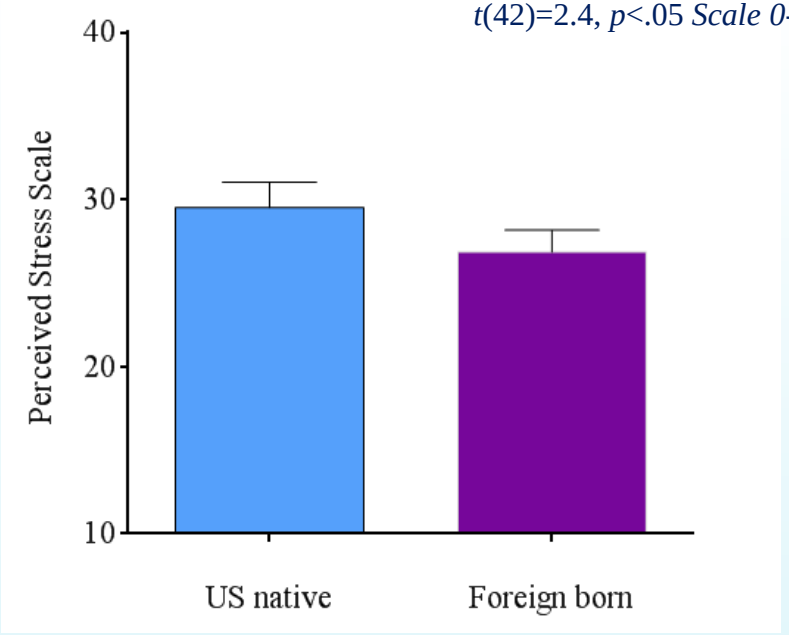



$F(1,43)=11.32$, $p<.001$

# RESULTS: *Subjective Stress*

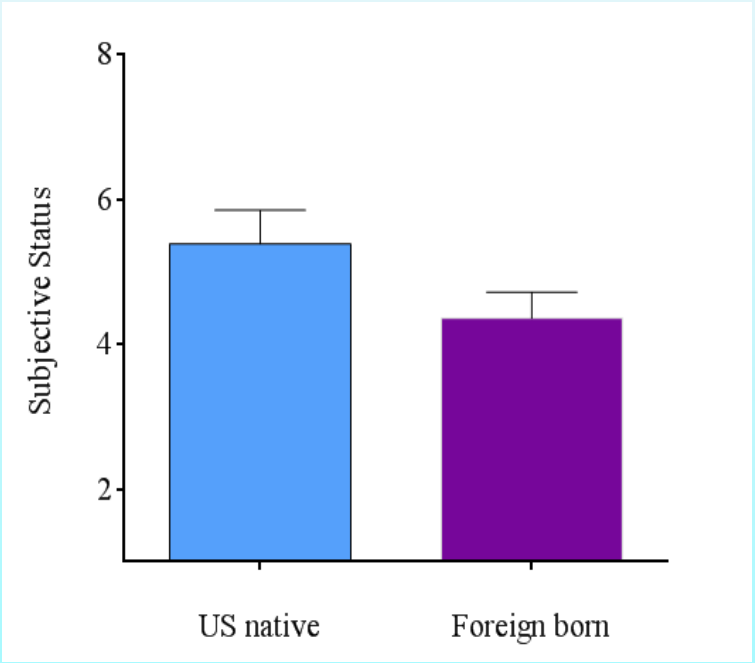



*t*(42)=2.9, *p*<.05 *Scale 16-64*

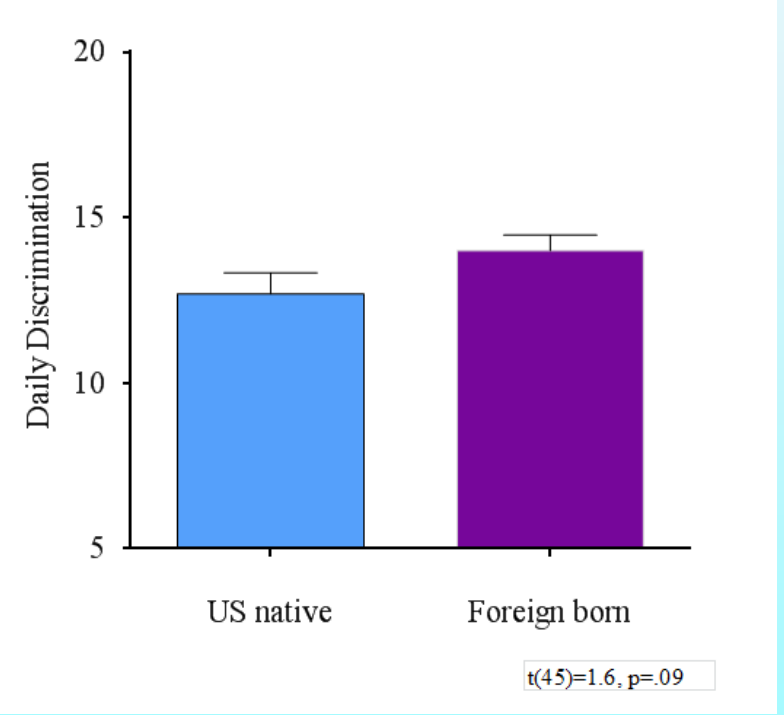



*t*(42)=2.4, *p*<.05 *Scale 0-40*

Subjective Status ladder

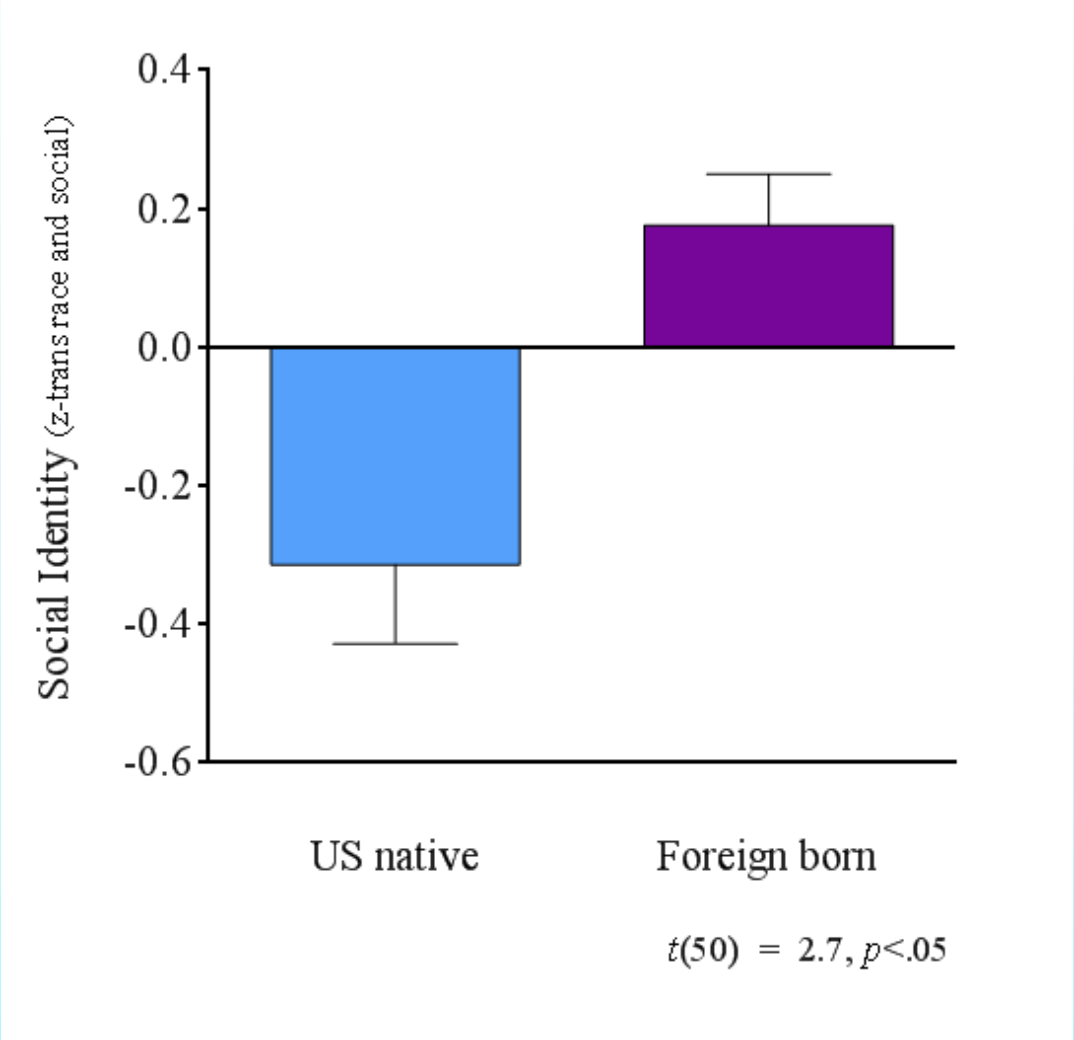



*t*(42)=3.2, *p*<.05, *Scale 1-10*

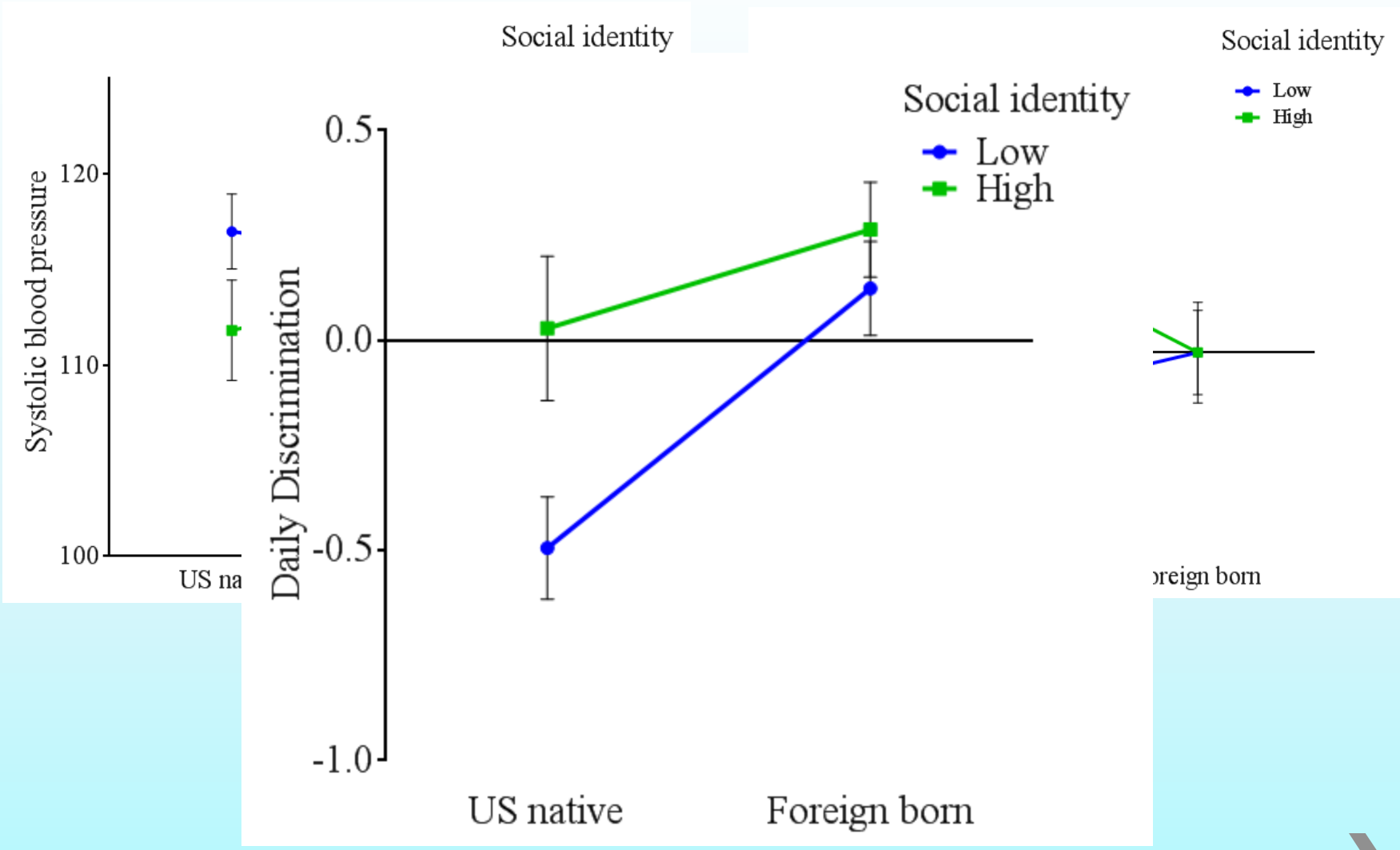


**Social identity:**

*Foreign born adults are significantly strongly in social identity. Is this protective?*



# *Is a stronger social identity protective for health outcomes and stressors?*



## SUMMARY of preliminary findings

### Objective Stress Outcomes

- *Hair cortisol values were higher* for US natives compared to foreign-born adults, living in similar high-risk neighborhoods Boston
- Although, Hair cortisol values were higher for foreign born adults who immigrated to the US *before the age of 15*.
- Resting systolic blood pressure was also significantly lower for both male and female foreign born adults

### Subjective Stress Outcomes

•Broadly, the foreign born adults rated *subjective stress as lower* than the US natives, unless they reported greater social identity.

•Although, Foreign born adults rated *subjective social status as lower* than US natives.

### Social identity

•Social identity was significantly *stronger for foreign-born adults*

•Although, the benefits of stronger social identity were found more for the US but only for objective (blood pressure) not subjective (perceived stress).

•For some, stronger social identity was related to greater negative stressors, for example, reporting of greater Daily discrimination

•*Contrary to general findings: but consistent in our samples.*

•*Argument for additional neighborhood level and community research.*

•Limitations: no comparison group. All Ps living in high-risk areas.

Thank you!

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And all CCTS!

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