



Question: What is the relationship between acculturation and body weight?

Table 1: Summary of studies examining the association between multidimensional or multiple proxy measures of acculturation and body weight in Asian populations

Author, Year Sample Size, Data Source, Location Risk of Bias*	Race/Ethnicity Age % Female	Acculturation Measure/Proxy Body Weight Measure	Results
Longitudinal Study			
Novotny, 2012 N=1,612 Work, Weight and Wellness Study, Hawaii Risk of Bias: 4/24	Filipino (42.0%), other Asian (32.0%), Pacific Islander (13.0%), White (9.0%), African American (1.0%), other (3.0%) 46.0y (SD=10.2) 52.0% female	Acculturation scale (not validated) considered age at immigration, country of birth, English spoken at home, and highest education level Measured weight, height, waist circumference	Longitudinal analysis: <i>Change in BMI and WHR over 24 months: NS</i> Cross-sectional analysis: Acculturation associated with higher baseline BMI, (F=2.66, P=0.02)
Cross-sectional Studies			



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<p>Chen, 2012</p> <p>N=847</p> <p>Liver cancer prevention trial 2009-2010 data, Maryland</p> <p>Risk of Bias: 4/24</p>	<p>Korean (33.3%), Chinese (35.1%), Vietnamese (31.6%)</p> <p>45.0y (SD=13.5)</p> <p>58.2% female</p>	<p>Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; validated) assessed language, friendship choice, music and food preference, years education and residency in country of origin and US, respectively, and country of birth</p> <p>Proxies: Age at immigration; education in the US; self-identity; language preference; food preference at home; food preference in restaurants</p> <p>Measured height and weight</p>	<p>BMI [β(SE)] association found with increased BMI</p> <p>Higher SL-ASIA score: β=0.71 (0.28), P<0.05</p> <p>Age at arrival to US: 4y and above: Referent group</p> <p>11-40y: NS 6-10y: β=1.55 (0.78), P<0.05 0-5y: β=3.32 (0.76), P<0.01</p> <p>Language preference: NS</p> <p>Food preference at home: NS</p> <p>Education in the US (No referent group): Had any: 0.56 (0.28), P<0.05</p> <p>Food preference at restaurants: Asian cuisine: Referent group</p> <p>Equal (American and Asian): β=0.92 (0.28), P<0.01 American cuisine: NS</p> <p>Self-identity: Asian: Referent group</p> <p>Equal (American and Asian): NS American: β=1.51 (0.77), P<0.05</p>



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<p>Fu, 2012</p> <p>Migrant status analysis N=703</p> <p>Age and language analysis N=124</p> <p>Survey, Louisiana/Vietnam</p> <p>Risk of Bias: 6/24</p>	<p>Vietnamese descent (100.0%); Immigrant status: Immigrant (17.6%), returnee (19.1%), or never migrant (63.3%)</p> <p>39.0y; 23-53y</p> <p>49.8% female</p>	<p>Acculturation scale developed for Southeast Asians (validated) assessed language proficiency and preference, food and social contact preferences, length of stay in US, age at immigration</p> <p>Measured weight, height, waist circumference, and hip circumference</p>	<p>BMI, WHR continuous, being obese/overweight, having high WHR:</p> <p>Migration status (Never migrant: Referent group)</p> <p>Returnees (estimates effects of selection): BMI (NS), WHR continuous (NS), being obese/overweight (NS), having high WHR (NS)</p> <p>Immigrants: BMI ($\beta=1.40$ (SE=0.35), $P<0.001$), WHR continuous ($\beta=0.066$ (SE=0.007), $P<0.001$), being obese/overweight (OR=2.16 (1.34-3.47)), having high WHR (OR=5.09 (3.09-8.40))</p> <p>Returnees: referent group</p> <p>Immigrants (estimates effect of migration and US acculturation net of selection effects): BMI ($\beta=1.65$ (SE=0.41), $P<0.001$), WHR continuous ($\beta=0.07$ (SE=0.008), $P<0.001$), being obese/overweight (OR=2.50 (1.38-4.54)), having high WHR (OR=5.96 (3.35-10.59))</p> <p>Acculturation and weight status among Vietnamese immigrants (N=124)</p> <p><i>Age at arrival:</i> BMI ($\beta=-0.12$ (0.06), $P<0.05$), all other measures: NS</p> <p><i>English proficiency:</i> Having high WHR (OR=0.76 (0.61-0.94)), all other measures: NS</p> <p><i>Length of residency, language/social/food preference, Vietnamese proficiency, and being bilingual:</i> Not associated with weight</p>



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Gomez, 2004 N=3,965 Kaiser Permanente Medical Care Program bone health case-control study, California Risk of Bias: 5/24	White (79.8%), Chinese (6.6%), Japanese (2.5%), Filipino (6.8%), other Asian (2.3%), multiple-race Asian (2.0%) >45y 75.9% female	Proxies: Country of birth, age at which family moved to the US, generation, language Self-reported weight and height	Overweight/obesity (BMI >25) analyzed by subgroup: Birthplace (US-Born as referent group) <i>Chinese: NS</i> <i>Japanese: NS</i> <i>Filipino: NS</i> <i>Other Asian: NS</i> <i>Multi-racial Asian: NS</i> Language preference (English as referent group): No significant relationships
Parikh, 2009 Final N=517 New York City Chinese Health Survey, New York Risk of Bias: 4/24	Chinese (100%) 63.5y (SE=0.38); 55-75y 42.2% female	Acculturation score (invalidated) considered length of time in US and language usage Self-reported weight and height	Overweight/obesity (BMI >25) association with acculturation: NS in men and women Overweight/obesity (BMI >25) association with percent of time in US: NS in men and women



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<p>Song, 2004</p> <p>N=3,330</p> <p>Survey, California/South Korea</p> <p>Risk of Bias: 4/24</p>	<p>Korea-descent (100%)</p> <p>>18y</p> <p>~50% female</p>	<p>Suinn-Lew Asian Self-Identity Acculturation Scale (considers language, music, food, self-identification, father's identification, and social linkages including ethnicity of peers, and preferred associations)</p> <p>Acculturation groups established using cluster analysis</p> <p>Self-reported weight and height</p>	<p>Obesity (Seoul residents as reference)</p> <p><i>Men</i></p> <p>“Traditional”: 3.59 (0.84-15.41)</p> <p>“Bicultural”: 2.57 (0.47-14.21)</p> <p>“Acculturated”: 14.8 (3.11-70.25)</p> <p><i>Women</i></p> <p>“Traditional”: 2.27 (0.29-17.65)</p> <p>“Bicultural”: 3.24 (0.29-36.48)</p> <p>“Acculturated”: 6.40 (0.38-107.8)</p> <p>Overweight (Seoul residents as reference)</p> <p><i>Men</i></p> <p>“Traditional”: 2.39 (1.65-3.47)</p> <p>“Bicultural”: 2.60 (1.66-4.07)</p> <p>“Acculturated”: 2.40 (1.08-8.42)</p> <p><i>Women</i></p> <p>“Traditional”: 1.37 (0.78-2.38)</p> <p>“Bicultural”: 1.30 (0.59-2.87)</p> <p>“Acculturated”: 3.02 (1.08-8.42)</p>



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Wang, 2011 N=5,074 2005 and 2007 California Health Interview Study (CHIS), California Risk of Bias: 4/24	Chinese (56%), Korean (19%), Vietnamese (25%) 43.6y 57.3% female	Proxies: Nativity and language proficiency 3 acculturation groups: <i>"Traditional"</i> : Foreign-born/poor English <i>"Bicultural"</i> : Foreign-born/ good English; or US-born/spoke and use Asian language at home/answered the interview in an Asian language <i>"Acculturated"</i> : US-born/good English; or answered the interview in English, and did not speak an Asian language at home. Self-reported weight and height	Overweight/obesity (BMI >25) Acculturation status (Referent group: "Traditional"): <i>Men:</i> "Bicultural": NS "Acculturated": OR=2.11 [95% CI=1.25-3.55] <i>Women:</i> "Bicultural": NS "Acculturated": OR=2.38 [95% CI=1.41-4.01] Overweight/obesity (BMI >25) Acculturation status (Referent group: "Bicultural"): <i>Men:</i> "Acculturated" OR=2.13 [95% CI=1.40-3.23] <i>Women:</i> "Acculturated" OR=3.28 [95% CI=2.14-5.04]

*Risk of Bias as determined using the Nutrition Evidence Library Bias Assessment Tool