

## SUPPLEMENTARY MATERIAL

associated with

# Widening Socioeconomic Disparities in Pain and Physical Function Among Americans Are Linked with Growing Obesity

## MEASURE OF SOCIOECONOMIC STATUS

Relative SES is based on education of the respondent (and spouse/partner, if applicable), current or most recent occupation of the respondent (and spouse/partner, if applicable), annual household income, and current net assets of the respondent and spouse. Education is based on degree completion with 12 response categories ranging from less than 8th grade to completion of a professional degree (e.g., PhD, MD, JD, etc.). We recode occupation into four groups: Farming/Construction/Maintenance/Production/Transportation/Military (=1); Service/Sales/Administrative/Office (=2); Management/Business/Financial (=3); Professional (=4). Annual household income includes all sources of income for the respondent, spouse/partner, and all other family members living in the household. Total net assets are reported for the respondent and spouse/partner combined. (See next section for more details regarding income and assets.) Because income and assets are strongly and positively skewed, we apply a square root transformation to those two items. Then we standardize all six items and calculate the mean across relevant items (e.g., six items if married/partnered and both respondent and spouse/partner have ever been employed; three items if not married/partnered and respondent has never been employed; Cronbach's  $\alpha=0.75$  at both waves). Finally, within each cross-sectional survey wave, we convert the composite score to a percentile rank, scaled to range from 0 (1st percentile) to 1 (99th percentile).

### Household Income and Assets

At both waves, income from each source (i.e., wages/salary, social security, government assistance, and all other sources such as pensions, investments, child support, or alimony) is reported in categories. We code income from each source to the mid-point of the range within each category and then sum across all sources to compute total income. In the 1995-96 wave, income from each source is top-coded at \$200,000 (except government assistance, which is top-coded at \$50,000); 1.3% of respondents have top-coded income from one or more sources. For the 2011-14 wave, income is top-coded at \$300,000; 0.8% of respondents have top-coded income from at least one source. Top-coded values are recoded to the harmonic mean of a Pareto distribution. As suggested by von Hippel (2016), we compute the harmonic mean of a Pareto distribution with  $\alpha$  equal to the maximum of one or  $\frac{\ln(n_{B-1}+n_B)-\ln(n_B)}{\ln(l_B)-\ln(l_{B-1})}$ , where  $n_B$  is the number of cases in the top category;  $n_{B-1}$  is the number of cases in the penultimate category;  $l_B$  is the lower bound of the top category; and  $l_{B-1}$  is the lower bound of the penultimate category. Restricting alpha to a minimum of one ensures that the value of the top category is no greater than twice the lower bound of that category. We are unable to make an equivalence adjustment based on household size and composition because MIDUS did not collect that information at wave 1.

Assets are also reported in categories in 1995-96 and coded to the mid-point of each range. In 2011-14, the dollar amount of assets is recorded. Total net assets are coded to zero if the respondent reports no assets or a deficit. At both waves, assets are top-coded at \$1,000,000 (2.3% of the sample in 1995-96 and 8.2% in 2011-14) and are recoded to the harmonic mean of a Pareto distribution as described above for income.

To adjust for inflation, we convert income and assets to 1995 dollars using the Consumer Price Index (CPI) provided by the Bureau of Labor Statistics (<https://data.bls.gov/cgi-bin/cpicalc.pl>). For each respondent, we determine the multiplier for income/assets based on the year in which s/he completed the phone interview and the CPI multiplier for the median month for MIDUS interviews conducted during that year (using April 1995 as the reference, which is the median month among interviews completed in 1995). Thus, the multipliers for each survey year (based on the median month for interviews in that year) are: 1995 (April)=1.0; 1996 (July)=0.97; 2011 (December)=0.67; 2012 (May)=0.66; 2013 (August)=0.65; 2014 (March)=0.64.

## MULTIPLE IMPUTATION

We used the *ice* command in Stata 16.1 (StataCorp, 2019) to implement multiple imputation for missing data (Rubin, 1996; Schafer, 1999). Among the pooled sample, the only analysis variables with more than 5% missing data were waist circumference (7%) and two components of the SES index—household income (18%) and assets (13%). The set of predictors for multiple imputation included all the analysis variables as well as several auxiliary variables (i.e., self-assessed health status, perceived economic distress, negative affect, psychological well-being, and social well-being). After performing five imputations, we used the “mim” prefix command to re-estimate the model for each imputation and combine the five sets of estimates using Rubin’s rules (Royston et al., 2009).

## SENSITIVITY ANALYSES

Because smoking confounds the relationship between obesity and health, we first restricted the analysis sample to 2,926 respondents who never smoked. The results from that analysis generally showed a stronger period effect (i.e., stronger increase over time among never smokers than among the population as a whole). Compared with the results presented in eTables 2-6, the estimates for SES widening were generally larger. The effect of BMI became slightly stronger, while the effect of waist circumference was somewhat attenuated. The percentage of the period effect and SES widening explained by obesity was generally smaller. Overall, the results suggest that declines over time (and across cohorts) in smoking may have tempered the period increase in pain and physical limitations and, to some extent, reduced the effect of SES widening.

Second, because of the possibility that serious illness may have induced recent weight loss, we re-estimated the models after excluding 2088 respondents who ever had cancer or heart trouble or in the past 12 months had: a stroke; diabetes (high blood sugar); asthma, bronchitis, emphysema, tuberculosis, or other lung problems; lupus or another autoimmune disorder; or multiple sclerosis, epilepsy, or another neurological disorder. Among the remaining 3544 respondents, there was little change in the period effect, the degree of SES widening, or the effects of obesity. The percentage of SES widening explained by obesity was somewhat smaller, except for having a major physical limitation.

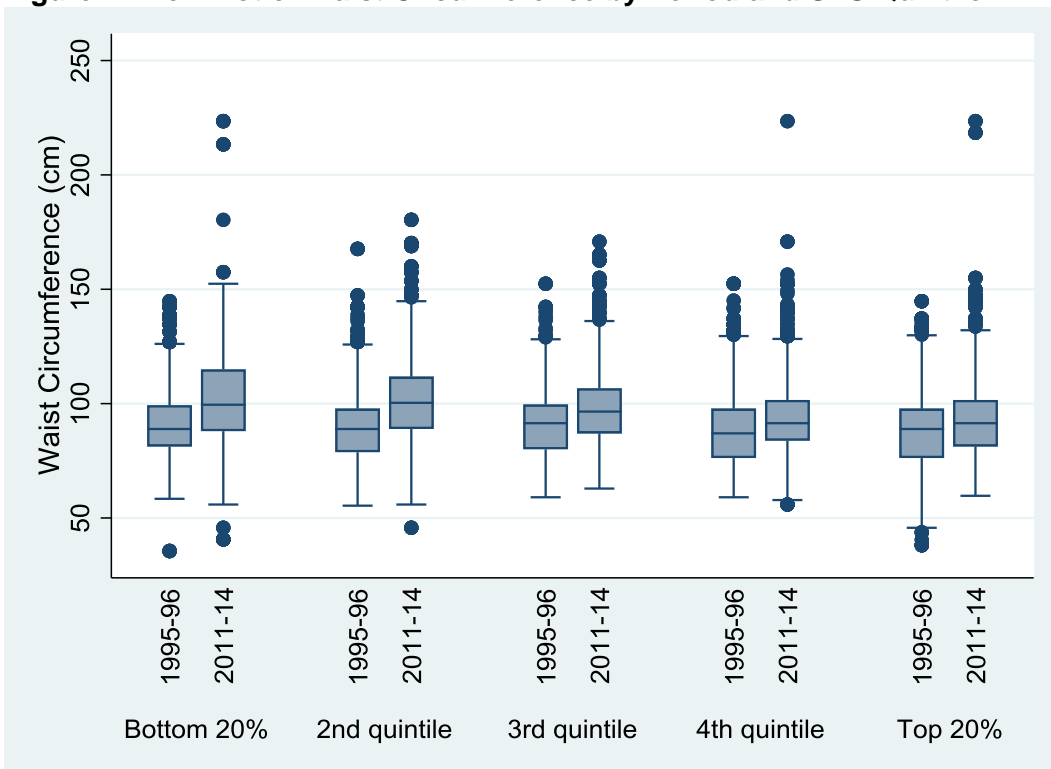
Third, we excluded six respondents with exceptionally high values of BMI (>70) or waist circumference (>200cm) as well as another 66 underweight respondents (i.e., BMI<18.5) who may have experienced wasting as a result of serious illness. Among the remaining 5,560 respondents, there were virtually no substantive changes in the results.

Finally, we refit Model 3 including only the four health conditions expected to be strongly associated with obesity: diabetes, heart problems, stroke, and arthritis/rheumatism/other bone/joint disease. The effects of period, SES widening, and obesity remained similar, but heart trouble and arthritis were more strongly associated with pain and physical function than when the model also controlled for the other health conditions. The percentage of SES widening accounted for by obesity and health conditions was somewhat smaller.

## REFERENCES

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**eFigure 1. Box Plot of Waist Circumference by Period and SES Quintile**



Note: In this plot, the box represents the 25<sup>th</sup> (p25), 50<sup>th</sup> (p50), and 75<sup>th</sup> (p75) percentiles of the distribution. The whiskers extend to the lower (p25-1.5\*IQR, where IQR=p75-p25) and upper (p75+1.5\*IQR) adjacent values. Values outside of the lower and upper adjacent values are represented by circles.

**eTable 1. Pain, physical limitations, obesity, and health conditions by socioeconomic status (SES, low vs. high) and survey wave, Americans aged 25-74**

	Low SES (below the median)			High SES (above the median)		
	1995-96 (1)	2011-14 (2)	Difference (2)-(1)	1995-96 (1)	2011-14 (2)	Difference (2)-(1)
<b>Pain</b>						
Frequent headaches, %	4.0	4.7	0.8	2.6	2.2	-0.4
Frequent lower backaches, %	11.3	23.0	11.7	6.8	8.9	2.1
Frequent joint aches/stiffness, %	15.3	29.3	13.9	10.7	17.3	6.5
<b>Physical limitations</b>						
Any limitation, <sup>a</sup> %	70.9	78.5	7.6	59.9	63.4	3.5
Major limitation, <sup>b</sup> %	29.7	37.8	8.1	15.9	17.9	2.0
<b>Obesity</b>						
BMI (9.4-93.0), mean (SD)	27.7 (6.2)	32.0 (8.7)	4.3	27.0 (5.4)	28.5 (6.9)	1.6
Underweight (<18.5), %	2.0	0.3	-1.7	1.3	1.2	-0.1
Normal (18.5-24.9), %	33.6	19.1	-14.5	38.5	31.5	-7.0
Overweight (25-29.9), %	37.1	29.6	-7.5	37.5	34.5	-3.0
Obese class I (30-34.9), %	16.4	23.3	6.9	15.1	19.0	3.8
Obese class II (35-39.9), %	6.4	13.3	6.8	4.6	8.1	3.6
Obese class III (40+), %	4.5	14.5	10.0	3.0	5.7	2.7
Waist circumference (35.6-223.5), mean (SD)	90.3 (15.1)	101.6 (19.6)	11.2	88.9 (15.0)	94.1 (15.9)	5.2
<b>Health conditions</b>						
Diabetes in past 12 months, %	7.3	17.5	10.2	3.5	6.2	2.7
Ever had heart trouble, %	14.6	15.6	1.0	10.4	11.3	0.8
Neurological disorder in past 12 months, %	2.1	3.3	1.2	1.4	1.7	0.4
Autoimmune disorder in past 12 months, %	0.9	1.8	0.9	1.4	1.4	0.1
Arthritis/rheumatism/other bone/joint disease in past 12 months, %	22.5	23.9	1.4	16.0	15.5	-0.5
Lung problems in past 12 months, %	15.7	18.9	3.2	13.9	10.7	-3.2
Ever had cancer, %	7.5	10.0	2.4	5.3	11.1	5.7
Stroke in past 12 months, %	1.5	1.4	-0.1	0.5	0.4	-0.1
Recurring stomach trouble in past 12 months, %	21.5	20.9	-0.6	18.5	14.1	-4.4
Gallbladder trouble in past 12 months, %	3.1	2.4	-0.7	1.8	1.1	-0.7
Persistent foot trouble in past 12 months, %	13.7	12.3	-1.4	9.4	7.2	-2.2

*Note.* The unweighted (weighted) number of respondents in each subgroup as are follows: Low SES,  $N=1327$  (weighted  $N=1524$ ) in 1995-96 and  $N=974$  (weighted  $N=1304$ ) in 2011-14; High SES,  $N=1707$  (weighted  $N=1510$ ) in 1995-96 and  $N=1624$  (weighted  $N=1294$ ) in 2011-14. SES = Socioeconomic status.

<sup>a</sup> The respondent reported any limitation (even “a little”) on at least one of eight physical tasks.

<sup>b</sup> The respondent reported “a lot” of limitation on any of those same eight physical tasks.

**eTable 2. Odds ratios (and 95% confidence intervals) from logit models predicting frequent headaches, Americans aged 25-74, MIDUS Waves 1995-96 and 2011-14 (N=5632)**

	(1)	(2)	(3)
Male	0.49*** (0.33 - 0.72)	0.48*** (0.32 - 0.73)	0.54** (0.35 - 0.82)
Age - 40	0.99 (0.98 - 1.00)	0.99 (0.98 - 1.00)	0.98* (0.96 - 0.99)
White	--	--	--
Black	0.51 (0.23 - 1.16)	0.48 (0.21 - 1.09)	0.47 (0.19 - 1.16)
Other race	0.73 (0.37 - 1.46)	0.77 (0.38 - 1.53)	0.73 (0.35 - 1.50)
Never smoked	--	--	--
Former smoker	1.09 (0.71 - 1.67)	1.06 (0.69 - 1.63)	0.98 (0.62 - 1.55)
Current smoker	1.22 (0.77 - 1.93)	1.35 (0.86 - 2.13)	1.12 (0.69 - 1.83)
Relative SES <sup>a</sup>	3.26** (1.37 - 7.74)	2.82* (1.16 - 6.85)	2.38 (0.95 - 5.92)
Period 1995-96	--	--	--
Period 2011-14 <sup>b</sup>	0.92 (0.42 - 2.03)	0.88 (0.39 - 1.95)	1.02 (0.45 - 2.31)
Period 2011-14 x SES <sup>c</sup>	1.39 (0.36 - 5.30)	1.08 (0.29 - 4.02)	0.90 (0.24 - 3.44)
BMI<18.5	--	0.42 (0.06 - 3.23)	0.38 (0.04 - 3.33)
BMI 18.5-24.9	--	--	--
BMI 25-29.9	--	1.01 (0.60 - 1.70)	0.94 (0.55 - 1.61)
BMI 30-34.9	--	1.58 (0.88 - 2.84)	1.39 (0.75 - 2.58)
BMI 35-39.9	--	1.40 (0.60 - 3.26)	1.24 (0.54 - 2.89)
BMI 40+	--	2.12 (0.75 - 6.01)	1.51 (0.51 - 4.44)

	(1)	(2)	(3)
Waist circumference	--	1.13 (0.87 - 1.47)	1.12 (0.86 - 1.46)
Ever had heart trouble	--	--	1.37 (0.88 - 2.12)
Ever had cancer	--	--	1.43
<b>Health conditions in the past 12 months:</b>			(0.82 - 2.50)
Stroke	--	--	1.06 (0.17 - 6.76)
Diabetes	--	--	1.05 (0.53 - 2.07)
Arthritis/rheumatism/other bone/joint disease	--	--	1.28 (0.81 - 2.00)
Lung problems	--	--	2.30*** (1.48 - 3.57)
Gall bladder trouble	--	--	1.14 (0.43 - 2.99)
Autoimmune disorder	--	--	1.24 (0.43 - 3.54)
Neurological disorder	--	--	2.28 (0.97 - 5.35)
Recurring stomach trouble	--	--	1.96** (1.31 - 2.94)
Persistent foot trouble	--	--	1.41 (0.82 - 2.42)

<sup>a</sup> Reverse-coded and rescaled from 0 (top percentile) to 1 (bottom percentile). Because the models include an interaction between SES and period, the main effect of SES represents the odds ratio for a person in the bottom 1% relative to the top 1% of the SES in 1995-96.

<sup>b</sup> The main effect of period represents the odds ratio for 2011-14 relative to 1995-96 among those in top percentile of SES. To obtain the period effect for those in the bottom percentile of SES, we would multiply the odds ratio for period and the odds ratio for the interaction between period and SES.

<sup>c</sup> The interaction represents the degree to which the SES disparity widened between 1995-96 and 2011-14.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

**eTable 3. Odds ratios (and 95% confidence intervals) from logit models predicting frequent lower backaches, Americans aged 25-74, MIDUS Waves 1995-96 and 2011-14 (N=5632)**

	(1)	(2)	(3)
Male	0.84 (0.68 - 1.03)	0.80 (0.63 - 1.02)	0.91 (0.70 - 1.18)
Age - 40	1.01*** (1.01 - 1.02)	1.01** (1.00 - 1.02)	1.00 (0.99 - 1.01)
White	--	--	--
Black	0.72 (0.47 - 1.09)	0.71 (0.47 - 1.08)	0.71 (0.46 - 1.11)
Other race	0.94 (0.65 - 1.36)	0.97 (0.66 - 1.42)	0.89 (0.60 - 1.32)
Never smoked	--	--	--
Former smoker	1.37** (1.08 - 1.73)	1.35* (1.06 - 1.72)	1.30* (1.01 - 1.66)
Current smoker	1.34* (1.01 - 1.78)	1.43* (1.08 - 1.91)	1.25 (0.93 - 1.68)
Relative SES <sup>a</sup>	3.17*** (1.90 - 5.28)	2.97*** (1.76 - 5.00)	2.37** (1.38 - 4.08)
Period 1995-96	--	--	--
Period 2011-14 <sup>b</sup>	1.06 (0.69 - 1.62)	1.03 (0.66 - 1.59)	1.24 (0.79 - 1.95)
Period 2011-14 x SES <sup>c</sup>	2.69** (1.33 - 5.46)	2.42* (1.18 - 4.97)	2.26* (1.06 - 4.80)
BMI<18.5	--	0.46 (0.09 - 2.35)	0.41 (0.08 - 2.19)
BMI 18.5-24.9	--	--	--
BMI 25-29.9	--	1.15 (0.86 - 1.55)	1.08 (0.80 - 1.47)
BMI 30-34.9	--	1.22 (0.85 - 1.76)	1.03 (0.70 - 1.52)
BMI 35-39.9	--	1.04 (0.62 - 1.76)	0.80 (0.47 - 1.37)
BMI 40+	--	1.45 (0.71 - 2.96)	1.03 (0.48 - 2.23)



	(1)	(2)	(3)
Waist circumference	--	1.12 (0.92 - 1.37)	1.11 (0.90 - 1.36)
Ever had heart trouble	--	--	1.27 (0.96 - 1.68)
Ever had cancer	--	--	0.93 (0.65 - 1.33)
<b>Health conditions in the past 12 months:</b>			
Stroke	--	--	0.67 (0.22 - 2.06)
Diabetes	--	--	1.07 (0.74 - 1.55)
Arthritis/rheumatism/other bone/joint disease	--	--	3.12*** (2.43 - 4.01)
Lung problems	--	--	1.30 (0.97 - 1.75)
Gall bladder trouble	--	--	1.82* (1.00 - 3.33)
Autoimmune disorder	--	--	1.88 (0.99 - 3.58)
Neurological disorder	--	--	1.43 (0.74 - 2.74)
Recurring stomach trouble	--	--	1.50** (1.17 - 1.93)
Persistent foot trouble	--	--	1.58** (1.18 - 2.11)

<sup>a</sup> Reverse-coded and rescaled from 0 (top percentile) to 1 (bottom percentile). Because the models include an interaction between SES and period, the main effect of SES represents the odds ratio for a person in the bottom 1% relative to the top 1% of the SES in 1995-96.

<sup>b</sup> The main effect of period represents the odds ratio for 2011-14 relative to 1995-96 among those in top percentile of SES. To obtain the period effect for those in the bottom percentile of SES, we would multiply the odds ratio for period and the odds ratio for the interaction between period and SES.

<sup>c</sup> The interaction represents the degree to which the SES disparity widened between 1995-96 and 2011-14.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

**eTable 4. Odds ratios (and 95% confidence intervals) from logit models predicting frequent joint aches, Americans aged 25-74, MIDUS Waves 1995-96 and 2011-14 (N=5632)**

	(1)	(2)	(3)
Male	0.70*** (0.59 - 0.84)	0.67*** (0.54 - 0.82)	0.77* (0.60 - 0.98)
Age - 40	1.04*** (1.03 - 1.05)	1.04*** (1.03 - 1.05)	1.02*** (1.01 - 1.02)
White	--	--	--
Black	0.63* (0.42 - 0.93)	0.58** (0.39 - 0.85)	0.55* (0.35 - 0.88)
Other race	0.73 (0.52 - 1.02)	0.75 (0.53 - 1.06)	0.66* (0.45 - 0.97)
Never smoked	--	--	--
Former smoker	1.40*** (1.15 - 1.70)	1.37** (1.13 - 1.68)	1.34* (1.06 - 1.68)
Current smoker	1.17 (0.92 - 1.49)	1.37* (1.07 - 1.74)	1.11 (0.85 - 1.46)
Relative SES <sup>a</sup>	2.24*** (1.50 - 3.35)	1.95** (1.29 - 2.95)	1.50 (0.94 - 2.41)
Period 1995-96	--	--	--
Period 2011-14 <sup>b</sup>	1.28 (0.93 - 1.78)	1.22 (0.87 - 1.71)	1.65** (1.14 - 2.39)
Period 2011-14 x SES <sup>c</sup>	2.06* (1.17 - 3.65)	1.64 (0.92 - 2.93)	1.60 (0.84 - 3.04)
BMI<18.5	--	0.86 (0.30 - 2.51)	0.66 (0.23 - 1.91)
BMI 18.5-24.9	--	--	--
BMI 25-29.9	--	1.72*** (1.33 - 2.23)	1.70*** (1.27 - 2.27)
BMI 30-34.9	--	2.06*** (1.50 - 2.81)	1.78** (1.23 - 2.57)
BMI 35-39.9	--	2.46*** (1.64 - 3.69)	1.89* (1.16 - 3.08)
BMI 40+	--	3.60*** (2.02 - 6.42)	2.81** (1.36 - 5.80)

	(1)	(2)	(3)
Waist circumference	--	1.09 (0.93 - 1.29)	1.09 (0.88 - 1.34)
Ever had heart trouble	--	--	1.27 (0.98 - 1.64)
Ever had cancer	--	--	1.20 (0.89 - 1.62)
<b>Health conditions in the past 12 months:</b>			
Stroke	--	--	0.71 (0.19 - 2.68)
Diabetes	--	--	0.81 (0.59 - 1.13)
Arthritis/rheumatism/other bone/joint disease	--	--	7.34*** (5.90 - 9.13)
Lung problems	--	--	1.02 (0.77 - 1.35)
Gall bladder trouble	--	--	1.68 (0.89 - 3.17)
Autoimmune disorder	--	--	2.03 (0.90 - 4.57)
Neurological disorder	--	--	2.09 (0.93 - 4.71)
Recurring stomach trouble	--	--	1.57*** (1.25 - 1.98)
Persistent foot trouble	--	--	1.73*** (1.30 - 2.30)

<sup>a</sup> Reverse-coded and rescaled from 0 (top percentile) to 1 (bottom percentile). Because the models include an interaction between SES and period, the main effect of SES represents the odds ratio for a person in the bottom 1% relative to the top 1% of the SES in 1995-96.

<sup>b</sup> The main effect of period represents the odds ratio for 2011-14 relative to 1995-96 among those in top percentile of SES. To obtain the period effect for those in the bottom percentile of SES, we would multiply the odds ratio for period and the odds ratio for the interaction between period and SES.

<sup>c</sup> The interaction represents the degree to which the SES disparity widened between 1995-96 and 2011-14.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

**eTable 5. Odds ratios (and 95% confidence intervals) from logit models predicting any physical limitation, Americans aged 25-74, MIDUS Waves 1995-96 and 2011-14 (N=5632)**

	(1)	(2)	(3)
Male	0.65*** (0.57 - 0.75)	0.51*** (0.43 - 0.61)	0.56*** (0.47 - 0.68)
Age – 40	1.06*** (1.05 - 1.06)	1.05*** (1.05 - 1.06)	1.04*** (1.03 - 1.05)
White	--	--	--
Black	0.90 (0.68 - 1.19)	0.80 (0.60 - 1.06)	0.86 (0.63 - 1.16)
Other race	0.98 (0.75 - 1.27)	1.03 (0.78 - 1.37)	1.04 (0.76 - 1.42)
Never smoked	--	--	--
Former smoker	1.23* (1.04 - 1.45)	1.19* (1.00 - 1.41)	1.11 (0.93 - 1.34)
Current smoker	1.50*** (1.23 - 1.83)	1.78*** (1.44 - 2.20)	1.57*** (1.24 - 1.99)
Relative SES <sup>a</sup>	2.23*** (1.61 - 3.09)	1.87*** (1.34 - 2.61)	1.64* (1.14 - 2.36)
Period 1995-96	--	--	--
Period 2011-14 <sup>b</sup>	0.71** (0.56 - 0.91)	0.65*** (0.51 - 0.84)	0.75* (0.57 - 0.99)
Period 2011-14 x SES <sup>c</sup>	2.79*** (1.65 - 4.73)	1.90* (1.09 - 3.29)	1.70 (0.93 - 3.10)
BMI<18.5	--	1.61 (0.86 - 3.01)	1.54 (0.75 - 3.16)
BMI 18.5-24.9	--	--	--
BMI 25-29.9	--	1.10 (0.91 - 1.33)	1.08 (0.88 - 1.33)
BMI 30-34.9	--	1.60*** (1.21 - 2.12)	1.51* (1.11 - 2.05)
BMI 35-39.9	--	3.18*** (1.97 - 5.12)	3.05*** (1.81 - 5.14)
BMI 40+	--	3.37*** (1.66 - 6.85)	2.75* (1.29 - 5.85)

	(1)	(2)	(3)
Waist circumference	--	1.54*** (1.32 - 1.79)	1.53*** (1.29 - 1.80)
Ever had heart trouble	--	--	1.99*** (1.49 - 2.66)
Ever had cancer	--	--	1.36 (1.00 - 1.87)
<b>Health conditions in the past 12 months:</b>			
Stroke	--	--	2.10 (0.40 - 11.02)
Diabetes	--	--	0.78 (0.50 - 1.22)
Arthritis/rheumatism/other bone/joint disease	--	--	3.74*** (2.83 - 4.95)
Lung problems	--	--	1.88*** (1.44 - 2.47)
Gall bladder trouble	--	--	1.20 (0.60 - 2.39)
Autoimmune disorder	--	--	1.26 (0.54 - 2.92)
Neurological disorder	--	--	4.59** (1.78 - 11.78)
Recurring stomach trouble	--	--	1.74*** (1.38 - 2.19)
Persistent foot trouble	--	--	2.32*** (1.64 - 3.28)

<sup>a</sup> Reverse-coded and rescaled from 0 (top percentile) to 1 (bottom percentile). Because the models include an interaction between SES and period, the main effect of SES represents the odds ratio for a person in the bottom 1% relative to the top 1% of the SES in 1995-96.

<sup>b</sup> The main effect of period represents the odds ratio for 2011-14 relative to 1995-96 among those in top percentile of SES. To obtain the period effect for those in the bottom percentile of SES, we would multiply the odds ratio for period and the odds ratio for the interaction between period and SES.

<sup>c</sup> The interaction represents the degree to which the SES disparity widened between 1995-96 and 2011-14.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

**eTable 6. Odds ratios (and 95% confidence intervals) from logit models predicting a major limitation, Americans aged 25-74, MIDUS Waves 1995-96 and 2011-14 (N=5632)**

	(1)	(2)	(3)
Male	0.57*** (0.48 - 0.67)	0.50*** (0.41 - 0.61)	0.52*** (0.42 - 0.64)
Age - 40	1.05*** (1.04 - 1.05)	1.05*** (1.04 - 1.06)	1.03*** (1.02 - 1.04)
White	--	--	--
Black	1.33 (0.97 - 1.83)	1.25 (0.91 - 1.74)	1.35 (0.95 - 1.92)
Other race	1.19 (0.90 - 1.58)	1.30 (0.96 - 1.76)	1.29 (0.92 - 1.79)
Never smoked	--	--	--
Former smoker	1.36*** (1.13 - 1.63)	1.33** (1.10 - 1.60)	1.23* (1.01 - 1.51)
Current smoker	1.37** (1.10 - 1.70)	1.66*** (1.32 - 2.08)	1.43** (1.12 - 1.82)
Relative SES <sup>a</sup>	4.16*** (2.92 - 5.91)	3.65*** (2.53 - 5.27)	3.24*** (2.19 - 4.80)
Period 1995-96	--	--	--
Period 2011-14 <sup>b</sup>	0.76 (0.56 - 1.03)	0.68* (0.50 - 0.94)	0.76 (0.54 - 1.06)
Period 2011-14 x SES <sup>c</sup>	2.23** (1.30 - 3.83)	1.63 (0.92 - 2.88)	1.41 (0.77 - 2.57)
BMI<18.5	--	1.08 (0.47 - 2.48)	0.95 (0.40 - 2.28)
BMI 18.5-24.9	--	--	--
BMI 25-29.9	--	1.22 (0.96 - 1.53)	1.17 (0.91 - 1.50)
BMI 30-34.9	--	1.78*** (1.33 - 2.36)	1.60** (1.17 - 2.17)
BMI 35-39.9	--	2.32*** (1.57 - 3.43)	1.98** (1.28 - 3.04)
BMI 40+	--	2.73*** (1.60 - 4.64)	2.01* (1.13 - 3.59)

	(1)	(2)	(3)
Waist circumference	--	1.36*** (1.17 - 1.57)	1.36*** (1.16 - 1.59)
Ever had heart trouble	--	--	2.20*** (1.76 - 2.75)
Ever had cancer	--	--	1.65*** (1.24 - 2.18)
<b>Health conditions in the past 12 months:</b>			
Stroke	--	--	1.76 (0.58 - 5.34)
Diabetes	--	--	1.30 (0.94 - 1.79)
Arthritis/rheumatism/other bone/joint disease	--	--	2.58*** (2.10 - 3.16)
Lung problems	--	--	1.57*** (1.23 - 1.99)
Gall bladder trouble	--	--	0.84 (0.44 - 1.60)
Autoimmune disorder	--	--	1.74 (0.80 - 3.78)
Neurological disorder	--	--	4.78*** (2.73 - 8.37)
Recurring stomach trouble	--	--	1.39** (1.13 - 1.72)
Persistent foot trouble	--	--	1.32* (1.01 - 1.72)

<sup>a</sup> Reverse-coded and rescaled from 0 (top percentile) to 1 (bottom percentile). Because the models include an interaction between SES and period, the main effect of SES represents the odds ratio for a person in the bottom 1% relative to the top 1% of the SES in 1995-96.

<sup>b</sup> The main effect of period represents the odds ratio for 2011-14 relative to 1995-96 among those in top percentile of SES. To obtain the period effect for those in the bottom percentile of SES, we would multiply the odds ratio for period and the odds ratio for the interaction between period and SES.

<sup>c</sup> The interaction represents the degree to which the SES disparity widened between 1995-96 and 2011-14.

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$