

Effects of a Workplace Wellness Program on Employee Health, Health Beliefs, and Medical Utilization: A Randomized Clinical Trial

Julian Reif, PhD; David Chan, MD, PhD; Damon Jones, PhD; Laura Payne, PhD; David Molitor, PhD

April 2020

This appendix provides additional analyses not reported in the main text.

Section 1. Power Calculations

We performed our power calculations using the realized 2017 data from the control group. eTable 1 presents ex-post minimum detectable effects for all outcomes reported in the main text. We required a power of 80%, that is, a probability of 0.8 that the effect will be statistically significant at the 95% level. Thus, 80% power is achieved when the minimum detectable effect is equal to 2.8 times the estimated standard error, assuming estimates are normally distributed.¹ Note that we did not use our estimated effect sizes in these calculations, since doing so can give rise to misleading results.²

Section 2. Missing Data Bias

Health beliefs, self-reported health behaviors, and biometrics were obtained only for participants who completed the on-site screening and survey in 2017 or 2018. Outcomes based on administrative health claims data were collected for all members of the study sample enrolled in Health Alliance, regardless of participation in iThrive.

To estimate causal effects on health beliefs, self-reported health behaviors, and biometrics, the statistical analysis presented in the main text of this paper assumes that there is no differential selection into the 2017 or 2018 screenings between treatment and control. We evaluate the validity of this assumption by comparing the baseline characteristics of the treatment group to the baseline characteristics of the control group, separately for the sets of participants who completed the 2017 or 2018 biometric screenings.³ eTable 2 and eTable 3 show that on average screening participant characteristics were well-balanced across both study arms. We confirmed this formally using a statistical model. For each baseline characteristic, we estimated an individual-level linear model with a binary indicator for treatment assignment as the independent variable of interest. We estimated this model first for the set of study participants who completed the biometric screening in 2017, and then estimated it again for the set of study participants who completed the biometric screening in 2018. Across all baseline characteristics, the difference between treatment and control was insignificant for both sets of participants. This balance between treatment and control groups suggests that bias from missing data is unlikely to be substantial.

Our estimates for claims-based outcomes face low risk of bias because these data were collected for all members of Health Alliance who consented to be in the study sample. eTable 2 and eTable 3 confirm this by showing that enrollment rates in Health Alliance are well balanced across treatment and control groups, in both 2017 and 2018.

Section 3. Local Mean Treatment Effects

We used a standard instrumental-variable approach (two-stage least squares) to estimate the local mean treatment effect of participating in the program, among compliers induced into participation by randomization into the treatment group.⁴⁻⁶ Participation in the program was defined as completing the first (2016) screening component, which was offered only to members of the treatment group. We report estimates of the local mean treatment effect in eTable 4, eTable 5, and eTable 6. For reference, those tables also report the estimated effects of program eligibility that were reported in the main text.

Section 4. Subgroup Analysis

For all of the outcome variables reported in the main paper, we investigated heterogeneity in program effects among the following pre-specified subgroups: males, employees age 50 and over, whites, academic professional employees, civil service employees, and employees with above-median salary (\$52,620). We tested for heterogeneity by including in our main specification an indicator for the subgroup along with an interaction between that indicator and the treatment assignment indicator. We reported estimates of the coefficient on that interaction term in eTable 7-eTable 24. For reference, those tables also report the means and estimated effects of program eligibility that were reported in the main text.

Section 5. Primary Care Physician Analysis

We investigated the effect of participating in the program on four claims-based measures of primary care physician (PCP) utilization: total PCP visits, total PCP office visits, any PCP visits, and any PCP office visits. A “PCP visit” was defined as a visit where the physician specialty code was General Practice, Family Practice, or OB-GYN. A “PCP office visit” imposes the further restriction that the place of service was an office. All four outcome variables were specified post hoc. Results are reported in eTable 25.

List of Tables

eTable 1. Ex Post Minimum Detectable Effects (MDE) ^a	5
eTable 2. Baseline Characteristics, for Participants Who Completed the 2017 Biometric Screening ^a	6
eTable 3. Baseline Characteristics, for Participants Who Completed the 2018 Biometric Screening ^a	7
eTable 4. Local Mean Treatment Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	8
eTable 5. Local Mean Treatment Effect of Wellness Program on Biometrics ^a	9
eTable 6. Local Mean Treatment Effect of Wellness Program on Medical Diagnoses and Utilization ^a	10
eTable 7. Heterogeneity: Male: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	11
eTable 8. Heterogeneity: Male: Interaction Effect of Wellness Program on Biometrics ^a	12
eTable 9. Heterogeneity: Male: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization ^a	13
eTable 10. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	14
eTable 11. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Biometrics ^a	15
eTable 12. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization ^a	16
eTable 13. Heterogeneity: White: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	17
eTable 14. Heterogeneity: White: Interaction Effect of Wellness Program on Biometrics ^a	18
eTable 15. Heterogeneity: White: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization ^a	19
eTable 16. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	20
eTable 17. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Biometrics ^a	21
eTable 18. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization ^a	22
eTable 19. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	23
eTable 20. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Biometrics ^a	24
eTable 21. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization ^a	25
eTable 22. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors ^a	26
eTable 23. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Biometrics ^a	27

eTable 24. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a 28
eTable 25. Mean Values and Effect of Wellness Program on Primary Care Physician (PCP) Utilization^a .. 29

eTable 1. Ex Post Minimum Detectable Effects (MDE)^a

Outcome	Mean	Stdev	MDE
Health beliefs			
Height, in	67.3	4.03	0.40
Weight, lbs	185.32	47.91	6.10
Chance of BMI > 30, %	46.8	39.46	5.23
Chance of high cholesterol, %	40.15	27.73	3.85
Chance of high blood pressure, %	31.63	27.11	3.64
Chance of impaired glucose, %	30.99	24	3.32
Self-reported health behaviors, %			
Has primary physician	85.88	34.85	4.43
No tobacco use	94.4	23.02	3.16
Exercise 1+ times/week	93.38	24.89	3.45
Exercise 3+ times/week	53.14	49.94	6.72
Exercise for 20 minutes	94.17	23.45	3.30
Exercise for 40 minutes	50.09	50.04	6.86
Never anxious/depressed	31.58	46.52	6.38
Never or sometimes anxious/depressed	87.1	33.55	4.56
Biometric outcomes			
Continuous measures			
Height, in	67.04	3.7	0.37
Weight, lbs	185.86	48.49	6.16
Waist, in	37.65	6.72	0.86
BMI	29.03	7.08	0.92
Blood pressure, mm Hg			
Systolic	124.87	14.94	1.86
Diastolic	75.77	8.89	1.16
Lipid panel			
Total cholesterol, mg/dL	185.91	38.75	5.32
HDL cholesterol, mg/dL	54.84	17.93	2.21
Total cholesterol / HDL cholesterol	3.64	1.14	0.15
LDL cholesterol, mg/dL	106.57	33.07	4.68
Triglycerides, mg/dL	124.53	61.3	8.78
Glucose, mg/dL	93.41	20.97	2.83
Binary measures, %			
Obesity (BMI ≥30)	33.95	47.39	6.35
Hypertension (systolic ≥130 or diastolic ≥80)	50.42	50.04	6.58
High LDL cholesterol (≥100 mg/dL)	57.71	49.44	6.85
High glucose (≥100 mg/dL)	22.47	41.77	5.68
Medical diagnoses, %			
Diabetes	6.6	24.83	1.23
Hypertension	17.36	37.9	3.04
Hyperlipidemia	18.62	38.95	3.61
Medical utilization			
Office/outpatient (# days with at least 1 claim)	3.17	3.41	0.29
Inpatient (# days with at least 1 claim)	0.08	0.62	0.07
ER (# days with at least 1 claim)	0.14	0.52	0.05

^a MDE calculated assuming 80% power, i.e., a probability of 0.8 that effect will be statistically significant at the 95% level.

eTable 2. Baseline Characteristics, for Participants Who Completed the 2017 Biometric Screening^a

Variable	Treatment Group (n = 1409)	Control Group (n =595)
Age group, No. (%)		
<37 yr	447 (31.7)	182 (30.6)
37-50 yr	522 (37.0)	225 (37.8)
≥50 yr	440 (31.2)	188 (31.6)
Age, mean (SD), yr	43.8 (10.7)	44.1 (10.7)
Sex, No. (%)		
Male	556 (39.5)	238 (40.0)
Female	853 (60.5)	357 (60.0)
Race, No. (%)		
White	1166 (82.8)	505 (84.9)
Non-white	243 (17.2)	90 (15.1)
Annual salary, \$, No. (%)		
<40,000	281 (19.9)	116 (19.5)
40,000 to <50,000	297 (21.1)	135 (22.7)
50,000 to <75,000	507 (36.0)	204 (34.3)
≥75,000	324 (23.0)	140 (23.5)
Employee class, No. (%)		
Faculty	215 (15.3)	95 (16.0)
Academic professional	691 (49.0)	295 (49.6)
Civil service	503 (35.7)	205 (34.5)
Health Alliance insurance, Oct 2015 to Jul 2016		
Any coverage, No. (%)	1039 (73.7)	435 (73.1)
Months of coverage, mean (SD)	7.1 (4.5)	7.0 (4.5)
	Insurance Claims Subsample (n = 1030)	Insurance Claims Subsample (n = 435)
Medical diagnoses, No. (%)		
Diabetes	45 (4.3)	23 (5.3)
Hypertension	118 (11.4)	55 (12.6)
Hyperlipidemia	160 (15.4)	66 (15.2)
Medical utilization, mean (SD), days		
Office/outpatient	2.5 (2.6)	2.8 (2.9)
Inpatient	0.0 (0.3)	0.1 (0.4)
ER	0.1 (0.5)	0.1 (0.4)

^a Age, salary, and employee class are defined as of June 2016, two months prior to the start of the intervention. Medical diagnoses and medical utilization are measured over the period October 2015 to July 2016 and are derived from the insurance claims subsample, which includes all study participants enrolled in the Health Alliance plan.

eTable 3. Baseline Characteristics, for Participants Who Completed the 2018 Biometric Screening^a

Variable	Treatment Group (n = 1205)	Control Group (n = 556)
Age group, No. (%)		
<37 yr	369 (30.6)	160 (28.7)
37-50 yr	452 (37.5)	218 (39.1)
≥50 yr	383 (31.8)	179 (32.1)
Age, mean (SD), yr	44.1 (10.6)	44.5 (10.8)
Sex, No. (%)		
Male	465 (38.6)	219 (39.3)
Female	739 (61.4)	338 (60.7)
Race, No. (%)		
White	1016 (84.4)	479 (86.0)
Non-white	188 (15.6)	78 (14.0)
Annual salary, \$, No. (%)		
<40,000	243 (20.2)	112 (20.1)
40,000 to <50,000	250 (20.8)	117 (21.0)
50,000 to <75,000	419 (34.8)	195 (35.0)
≥75,000	292 (24.3)	133 (23.9)
Employee class, No. (%)		
Faculty	176 (14.6)	86 (15.4)
Academic professional	593 (49.3)	287 (51.5)
Civil service	435 (36.1)	184 (33.0)
Health Alliance insurance, Oct 2015 to Jul 2016		
Any coverage, No. (%)	885 (73.5)	407 (73.1)
Months of coverage, mean (SD)	7.1 (4.5)	7.0 (4.5)
	Insurance Claims Subsample (n = 885)	Insurance Claims Subsample (n = 406)
Medical diagnoses, No. (%)		
Diabetes	35 (4.0)	19 (4.7)
Hypertension	102 (11.5)	43 (10.6)
Hyperlipidemia	136 (15.4)	59 (14.5)
Medical utilization, mean (SD), days		
Office/outpatient	2.6 (2.6)	2.9 (3.0)
Inpatient	0.0 (0.4)	0.1 (0.4)
ER	0.1 (0.4)	0.1 (0.4)

^a Age, salary, and employee class are defined as of June 2016, two months prior to the start of the intervention. Medical diagnoses and medical utilization are measured over the period October 2015 to July 2016 and are derived from the insurance claims subsample, which includes all study participants enrolled in the Health Alliance plan.

eTable 4. Local Mean Treatment Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility			Effect of Wellness Program Participation		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	-0.26 (-1.08 to 0.56)	.54	.96
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	0.03 (-2.22 to 2.29)	.98	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	-1.02 (-5.28 to 3.23)	.64	.96
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	-3.56 (-6.69 to -0.43)	.03	.24
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	-2.85 (-5.81 to 0.11)	.06	.41
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	-3.18 (-5.87 to -0.48)	.02	.23
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	-0.40 (-1.31 to 0.52)	.40	.94
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	-0.74 (-3.20 to 1.72)	.56	.96
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	-0.12 (-4.68 to 4.44)	.96	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	-2.09 (-5.43 to 1.25)	.22	.83
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	-3.53 (-6.59 to -0.46)	.02	.24
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	-1.21 (-4.26 to 1.84)	.44	.94
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	3.78 (0.18 to 7.38)	.04	0.42
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	0.54 (-2.03 to 3.11)	.68	>0.99
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	-0.99 (-3.80 to 1.81)	.49	>0.99
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	5.60 (0.14 to 11.05)	.04	0.43
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	-0.98 (-3.66 to 1.70)	.47	>0.99
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	-1.01 (-6.59 to 4.56)	.72	>0.99
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	0.22 (-4.96 to 5.40)	.93	>0.99
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	-0.59 (-4.29 to 3.11)	.75	>0.99
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	7.38 (3.73 to 11.03)	<.001	<0.01
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	3.13 (0.26 to 6.00)	.03	.37
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	1.52 (-2.08 to 5.11)	.41	>0.99
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	5.33 (-0.53 to 11.19)	.07	.57
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	1.08 (-2.33 to 4.49)	.54	>0.99
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	0.61 (-5.34 to 6.55)	.84	>0.99
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	0.82 (-4.76 to 6.41)	.77	>0.99
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	1.57 (-2.72 to 5.87)	.47	>0.99
Standardized treatment effect ^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		-0.08 (-0.15 to -0.01)	.02	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		0.05 (0.00 to 0.09)	.04	

^a This table reports effects of program eligibility and local mean treatment effects of program participation. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up). The sample size of the regressions ranged from 1,739 to 1,999 because fewer subjects participated in the 2018 screening than in the 2017 screening and because some outcomes were occasionally missing or illegible.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 5. Local Mean Treatment Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility		Effect of Wellness Program Participation				
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b	
Biometric outcomes, 2017									
Continuous measures									
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	0.28 (-0.48 to 1.03)	.47	>0.99	
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	-0.06 (-2.34 to 2.21)	.96	>0.99	
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	-0.43 (-2.21 to 1.34)	.63	>0.99	
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.14 (-0.89 to 0.61)	.72	>0.99	
Blood pressure, mm Hg									
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	-1.26 (-2.78 to 0.25)	.10	.89	
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	-0.40 (-1.35 to 0.54)	.40	>0.99	
Lipid panel									
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	2.00 (-2.34 to 6.34)	.37	>0.99	
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	-0.45 (-2.25 to 1.34)	.62	>0.99	
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	0.07 (-0.05 to 0.20)	.25	>0.99	
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	1.26 (-2.54 to 5.07)	.52	>0.99	
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	4.75 (-2.38 to 11.88)	.19	.98	
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	0.51 (-1.80 to 2.81)	.67	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	1.61 (-3.56 to 6.77)	.54	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	-0.74 (-6.09 to 4.61)	.79	>0.99	
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-1.25 (-6.82 to 4.31)	.66	>0.99	
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	3.01 (-1.62 to 7.63)	.20	.98	
Biometric outcomes, 2018									
Continuous measures									
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	0.03 (-0.80 to 0.85)	.95	>0.99	
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	-1.04 (-3.52 to 1.44)	.41	>0.99	
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	-0.13 (-2.13 to 1.87)	.90	>0.99	
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	-0.48 (-1.32 to 0.35)	.26	>0.99	
Blood pressure, mm Hg									
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	-0.18 (-1.75 to 1.39)	.82	>0.99	
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	0.05 (-1.08 to 1.18)	.93	>0.99	
Lipid panel									
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	0.84 (-3.75 to 5.43)	.72	>0.99	
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	-0.10 (-1.94 to 1.73)	.91	>0.99	
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	0.02 (-0.12 to 0.15)	.80	>0.99	
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	1.06 (-3.15 to 5.28)	.62	>0.99	
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	1.35 (-6.41 to 9.12)	.73	>0.99	
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	-0.63 (-2.74 to 1.49)	.56	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	-0.18 (-5.76 to 5.40)	.95	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	1.21 (-4.58 to 7.01)	.68	>0.99	
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	0.37 (-5.80 to 6.54)	.91	>0.99	
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	3.41 (-2.30 to 9.12)	.24	>0.99	
Standardized treatment effect ^c									
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83			-0.01 (-0.06 to 0.04)	.82	

^a This table reports effects of program eligibility and local mean treatment effects of program participation. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up). The sample size of the regressions ranged from 1,662 to 2,004 because fewer subjects participated in the 2018 screening than in the 2017 screening and because some outcomes were occasionally missing or illegible.

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 6. Local Mean Treatment Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility			Effect of Wellness Program Participation		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	0.41 (-0.95 to 1.78)	.55	.93
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	-2.51 (-5.87 to 0.85)	.14	.50
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	0.64 (-3.35 to 4.63)	.75	.98
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	-0.15 (-1.80 to 1.51)	.86	.98
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	-2.47 (-6.13 to 1.19)	.19	.57
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	0.48 (-3.88 to 4.84)	.83	.98
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	0.08 (-0.25 to 0.40)	.63	.94
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	0.02 (-0.05 to 0.10)	.52	.94
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	-0.03 (-0.09 to 0.03)	.33	.83
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	0.13 (-0.47 to 0.72)	.68	.94
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	-0.04 (-0.30 to 0.22)	.77	.94
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	-0.04 (-0.15 to 0.08)	.55	.94
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		-0.01 (-0.07 to 0.04)	.59	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		-0.00 (-0.08 to 0.07)	.92	

^a This table reports effects of program eligibility and local mean treatment effects of program participation. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018. The sample size of the regressions ranged from 3,164 to 3,167.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 7. Heterogeneity: Male: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	-0.24 (-1.69 to 1.22)	.75	>0.99
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	-0.91 (-4.89 to 3.07)	.65	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	4.81 (-2.59 to 12.20)	.20	.87
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	5.18 (-0.29 to 10.65)	.06	.48
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	-0.93 (-6.19 to 4.33)	.73	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	0.93 (-3.79 to 5.65)	.70	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	-1.04 (-2.70 to 0.62)	.22	.87
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	2.29 (-1.92 to 6.49)	.29	.87
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	4.67 (-3.23 to 12.56)	.25	.87
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	1.35 (-4.35 to 7.06)	.64	>0.99
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	1.73 (-3.59 to 7.05)	.52	.98
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	3.47 (-1.77 to 8.72)	.19	.87
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	0.73 (-5.88 to 7.35)	.83	>0.99
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	-0.45 (-5.04 to 4.14)	.85	>0.99
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	5.02 (0.19 to 9.86)	.04	.48
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	6.72 (-2.81 to 16.26)	.17	.84
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	3.95 (-0.68 to 8.57)	.09	.72
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	5.79 (-4.04 to 15.61)	.25	.94
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	-1.39 (-10.73 to 7.95)	.77	>0.99
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	-5.55 (-11.67 to 0.56)	.08	.67
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	5.00 (-1.80 to 11.79)	.15	.84
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	0.54 (-4.59 to 5.67)	.84	>0.99
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	-1.45 (-7.41 to 4.51)	.63	>0.99
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	3.49 (-6.72 to 13.69)	.50	>0.99
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	-1.05 (-6.71 to 4.62)	.72	>0.99
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	2.95 (-7.42 to 13.32)	.58	>0.99
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	-4.21 (-14.10 to 5.67)	.40	.99
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	-2.71 (-9.96 to 4.54)	.46	.99
Standardized treatment effect^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		0.05 (-0.05 to 0.15)	.30	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		0.03 (-0.05 to 0.11)	.46	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 8. Heterogeneity: Male: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)			
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b	
Biometric outcomes, 2017									
Continuous measures									
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	-0.12 (-1.48 to 1.23)	.86	>0.99	
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	-0.92 (-4.94 to 3.11)	.66	>0.99	
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	0.42 (-2.62 to 3.47)	.79	>0.99	
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.20 (-1.46 to 1.07)	.76	>0.99	
Blood pressure, mm Hg									
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	-1.78 (-4.45 to 0.88)	.19	0.98	
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	-0.50 (-2.16 to 1.16)	.56	>0.99	
Lipid panel									
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	0.26 (-7.26 to 7.78)	.95	>0.99	
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	1.24 (-1.71 to 4.20)	.41	>0.99	
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	-0.03 (-0.26 to 0.19)	.77	>0.99	
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	0.51 (-6.08 to 7.10)	.88	>0.99	
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	-6.92 (-19.80 to 5.96)	.29	>0.99	
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	-1.41 (-5.57 to 2.76)	.51	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	-1.13 (-10.12 to 7.86)	.80	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	-10.67 (-20.01 to -1.33)	.03	0.44	
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-4.16 (-14.01 to 5.70)	.41	>0.99	
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	4.67 (-3.62 to 12.97)	.27	>0.99	
Biometric outcomes, 2018									
Continuous measures									
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	-0.07 (-1.57 to 1.43)	.93	>0.99	
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	1.79 (-2.45 to 6.02)	.41	>0.99	
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	0.86 (-2.57 to 4.30)	.62	>0.99	
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	0.63 (-0.73 to 2.00)	.36	>0.99	
Blood pressure, mm Hg									
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	1.93 (-0.75 to 4.61)	.16	0.96	
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	0.23 (-1.71 to 2.17)	.82	>0.99	
Lipid panel									
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	6.38 (-1.58 to 14.34)	.12	0.9	
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	1.03 (-2.00 to 4.06)	.50	>0.99	
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	0.11 (-0.13 to 0.35)	.38	>0.99	
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	3.69 (-3.56 to 10.94)	.32	>0.99	
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	4.10 (-9.67 to 17.87)	.56	>0.99	
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	-1.07 (-4.81 to 2.67)	.58	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	4.36 (-5.27 to 14.00)	.37	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	2.38 (-7.65 to 12.40)	.64	>0.99	
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	1.14 (-9.61 to 11.88)	.84	>0.99	
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	-3.26 (-13.09 to 6.57)	.52	>0.99	
Standardized treatment effect ^c									
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83			0.01 (-0.07 to 0.09)	.80	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 9. Heterogeneity: Male: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	2.38 (0.60 to 4.16)	<.01	.04
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	0.33 (-3.99 to 4.65)	.88	.96
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	-0.54 (-5.71 to 4.64)	.84	.96
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	1.53 (-0.58 to 3.65)	.15	.49
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	-1.93 (-6.62 to 2.77)	.42	.81
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	-2.13 (-7.78 to 3.53)	.46	.81
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	-0.30 (-0.71 to 0.10)	.15	.58
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	-0.06 (-0.16 to 0.04)	.21	.65
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	-0.02 (-0.09 to 0.06)	.66	.86
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	-0.28 (-1.03 to 0.47)	.46	.86
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	-0.14 (-0.51 to 0.23)	.45	.86
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	-0.09 (-0.25 to 0.07)	.27	.70
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		0.01 (-0.06 to 0.08)	.80	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		-0.07 (-0.16 to 0.03)	.18	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 10. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	1.67 (0.22 to 3.11)	.02	.23
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	-0.17 (-4.17 to 3.83)	.93	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	-2.21 (-10.08 to 5.66)	.58	>0.99
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	6.71 (0.66 to 12.76)	.03	.24
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	1.24 (-4.58 to 7.06)	.68	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	-1.62 (-6.79 to 3.56)	.54	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	1.50 (-0.06 to 3.05)	.06	.41
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	-1.37 (-5.79 to 3.05)	.54	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	-0.40 (-8.86 to 8.05)	.93	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	0.89 (-5.47 to 7.26)	.78	>0.99
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	-0.50 (-6.26 to 5.26)	.86	>0.99
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	-2.99 (-8.74 to 2.76)	.31	.94
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	-5.48 (-10.79 to -0.18)	.04	.43
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	0.07 (-4.66 to 4.80)	.98	>0.99
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	3.48 (-1.81 to 8.76)	.20	.91
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	-1.06 (-11.00 to 8.89)	.84	>0.99
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	3.39 (-1.73 to 8.52)	.19	.91
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	-0.18 (-10.54 to 10.18)	.97	>0.99
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	-2.29 (-12.19 to 7.61)	.65	
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	1.59 (-4.94 to 8.12)	.63	>0.99
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	-9.86 (-15.07 to -4.66)	<.001	<0.01
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	2.81 (-2.34 to 7.95)	.28	.95
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	-0.12 (-6.33 to 6.10)	.97	>0.99
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	-1.33 (-11.80 to 9.15)	.80	>0.99
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	1.47 (-4.45 to 7.38)	.63	>0.99
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	5.32 (-5.48 to 16.12)	.33	.95
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	5.72 (-4.59 to 16.03)	.28	.95
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	4.53 (-3.15 to 12.20)	.25	.95
Standardized treatment effect^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		0.02 (-0.08 to 0.13)	.67	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		0.02 (-0.06 to 0.10)	.65	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 11. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Biometric outcomes, 2017								
Continuous measures								
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	1.42 (0.05 to 2.79)	.04	0.57
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	-0.37 (-4.40 to 3.66)	.86	>0.99
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	-0.40 (-3.61 to 2.81)	.81	>0.99
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.57 (-1.92 to 0.77)	.40	>0.99
Blood pressure, mm Hg								
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	0.06 (-2.76 to 2.87)	.97	>0.99
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	0.51 (-1.14 to 2.15)	.55	>0.99
Lipid panel								
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	1.25 (-6.87 to 9.38)	.76	>0.99
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	0.17 (-3.28 to 3.62)	.93	>0.99
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	0.00 (-0.23 to 0.23)	.98	>0.99
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	1.07 (-6.17 to 8.31)	.77	>0.99
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	1.35 (-11.47 to 14.17)	.84	>0.99
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	0.98 (-3.13 to 5.09)	.64	>0.99
Binary measures, %								
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	-1.84 (-11.57 to 7.90)	.71	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	0.35 (-9.56 to 10.25)	.95	>0.99
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-4.60 (-14.86 to 5.66)	.38	>0.99
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	-2.66 (-12.07 to 6.75)	.58	>0.99
Biometric outcomes, 2018								
Continuous measures								
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	1.05 (-0.41 to 2.52)	.16	0.93
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	-1.81 (-6.28 to 2.66)	.43	>0.99
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	-0.58 (-4.33 to 3.17)	.76	>0.99
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	-0.84 (-2.36 to 0.68)	.28	>0.99
Blood pressure, mm Hg								
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	1.19 (-1.76 to 4.14)	.43	>0.99
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	1.64 (-0.40 to 3.68)	.11	0.88
Lipid panel								
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	6.34 (-2.01 to 14.69)	.14	0.91
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	2.18 (-1.27 to 5.63)	.21	0.98
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	-0.02 (-0.26 to 0.23)	.90	>0.99
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	8.48 (0.63 to 16.33)	.03	0.5
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	-19.21 (-33.87 to -4.55)	.01	0.22
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	1.59 (-2.33 to 5.52)	.43	>0.99
Binary measures, %								
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	-3.88 (-14.19 to 6.43)	.46	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	2.82 (-7.76 to 13.40)	.60	>0.99
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	12.64 (1.48 to 23.80)	.03	0.43
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	-5.91 (-16.06 to 4.24)	.25	0.99
Standardized treatment effect ^c								
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83		0.02 (-0.07 to 0.10)	.66	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 12. Heterogeneity: Age 50 and Over: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	0.33 (-1.59 to 2.24)	.74	.98
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	-3.48 (-8.57 to 1.61)	.18	.64
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	-0.22 (-6.27 to 5.84)	.94	>0.99
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	0.02 (-2.32 to 2.36)	.98	>0.99
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	-2.26 (-7.59 to 3.07)	.41	.90
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	-1.50 (-7.87 to 4.87)	.64	.97
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	0.37 (-0.10 to 0.84)	.12	.47
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	0.06 (-0.04 to 0.16)	.24	.68
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	-0.04 (-0.12 to 0.04)	.33	.74
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	0.14 (-0.73 to 1.02)	.75	.94
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	0.12 (-0.18 to 0.42)	.44	.80
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	0.02 (-0.12 to 0.17)	.73	.94
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		-0.03 (-0.11 to 0.05)	.47	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		0.04 (-0.06 to 0.13)	.45	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 13. Heterogeneity: White: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	1.23 (-0.77 to 3.22)	.23	.93
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	1.43 (-4.27 to 7.13)	.62	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	0.08 (-9.77 to 9.92)	.99	>0.99
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	0.59 (-7.09 to 8.27)	.88	>0.99
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	0.51 (-7.27 to 8.29)	.90	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	-0.06 (-6.89 to 6.78)	.99	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	-0.07 (-2.35 to 2.20)	.95	>0.99
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	-1.09 (-7.77 to 5.58)	.75	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	2.14 (-9.00 to 13.27)	.71	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	4.64 (-3.89 to 13.16)	.29	.96
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	1.44 (-6.88 to 9.75)	.74	>0.99
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	-0.68 (-8.24 to 6.88)	.86	>0.99
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	-0.10 (-10.34 to 10.15)	.99	>0.99
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	0.94 (-4.51 to 6.38)	.74	>0.99
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	-5.24 (-14.15 to 3.68)	.25	.98
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	-8.87 (-21.45 to 3.71)	.17	.94
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	-2.99 (-11.18 to 5.20)	.47	>0.99
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	-2.27 (-15.55 to 11.01)	.74	>0.99
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	-5.69 (-18.73 to 7.35)	.39	>0.99
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	4.03 (-2.79 to 10.84)	.25	.98
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	-1.44 (-10.73 to 7.86)	.76	>0.99
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	-1.22 (-8.29 to 5.85)	.73	>0.99
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	-0.62 (-10.11 to 8.87)	.90	>0.99
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	-8.90 (-22.33 to 4.53)	.19	.95
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	-5.70 (-14.90 to 3.51)	.22	.97
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	-5.62 (-20.03 to 8.78)	.44	>0.99
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	3.23 (-10.99 to 17.45)	.66	>0.99
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	3.49 (-6.16 to 13.14)	.48	>0.99
Standardized treatment effect ^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		0.03 (-0.10 to 0.17)	.62	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		-0.06 (-0.17 to 0.05)	.29	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 14. Heterogeneity: White: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Biometric outcomes, 2017								
Continuous measures								
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	2.17 (0.30 to 4.04)	.02	0.4
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	0.57 (-5.19 to 6.34)	.84	>0.99
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	-0.41 (-4.59 to 3.77)	.85	>0.99
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.70 (-2.55 to 1.16)	.46	>0.99
Blood pressure, mm Hg								
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	-2.27 (-5.90 to 1.35)	.22	0.99
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	0.26 (-1.99 to 2.52)	.82	>0.99
Lipid panel								
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	2.97 (-7.26 to 13.20)	.57	>0.99
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	-0.18 (-4.04 to 3.68)	.93	>0.99
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	0.04 (-0.27 to 0.34)	.82	>0.99
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	0.76 (-8.28 to 9.81)	.87	>0.99
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	10.66 (-6.70 to 28.01)	.23	0.99
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	-4.54 (-9.90 to 0.82)	.10	0.88
Binary measures, %								
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	-0.12 (-12.40 to 12.17)	.99	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	-6.29 (-18.83 to 6.25)	.33	>0.99
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-1.56 (-14.81 to 11.69)	.82	>0.99
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	-2.95 (-14.17 to 8.27)	.61	>0.99
Biometric outcomes, 2018								
Continuous measures								
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	0.26 (-1.91 to 2.43)	.81	>0.99
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	-0.78 (-7.47 to 5.92)	.82	>0.99
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	0.66 (-4.04 to 5.37)	.78	>0.99
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	-0.47 (-2.63 to 1.68)	.67	>0.99
Blood pressure, mm Hg								
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	0.46 (-3.74 to 4.65)	.83	>0.99
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	-0.63 (-3.82 to 2.56)	.70	>0.99
Lipid panel								
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	2.28 (-8.91 to 13.47)	.69	>0.99
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	3.30 (-0.58 to 7.17)	.10	0.88
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	-0.12 (-0.45 to 0.21)	.48	>0.99
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	1.16 (-9.52 to 11.85)	.83	>0.99
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	-16.27 (-35.88 to 3.33)	.10	0.88
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	-0.30 (-5.82 to 5.22)	.91	>0.99
Binary measures, %								
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	8.34 (-5.28 to 21.95)	.23	0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	-6.56 (-20.08 to 6.96)	.34	>0.99
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	4.95 (-9.75 to 19.66)	.51	>0.99
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	2.91 (-10.59 to 16.41)	.67	>0.99
Standardized treatment effect ^c								
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83				

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 15. Heterogeneity: White: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	-0.02 (-1.55 to 1.51)	.98	.98
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	-0.74 (-6.90 to 5.43)	.81	.97
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	-3.53 (-9.86 to 2.81)	.28	.82
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	1.70 (-1.38 to 4.77)	.28	.82
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	2.63 (-4.63 to 9.89)	.48	.88
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	-2.94 (-10.49 to 4.62)	.45	.88
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	0.08 (-0.44 to 0.60)	.75	.90
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	0.07 (-0.12 to 0.25)	.49	.82
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	0.08 (-0.04 to 0.21)	.19	.68
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	-0.03 (-0.99 to 0.92)	.95	.95
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	0.54 (-0.64 to 1.72)	.37	.79
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	0.29 (-0.13 to 0.72)	.18	.66
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		-0.01 (-0.10 to 0.08)	.85	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		0.13 (-0.09 to 0.35)	.25	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 16. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	-0.46 (-1.87 to 0.95)	.52	>0.99
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	-1.20 (-5.08 to 2.68)	.55	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	-3.02 (-10.35 to 4.30)	.42	>0.99
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	-2.90 (-8.29 to 2.48)	.29	.97
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	1.20 (-3.91 to 6.30)	.65	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	-0.45 (-5.10 to 4.20)	.85	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	-0.29 (-1.84 to 1.27)	.72	>0.99
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	-0.70 (-4.87 to 3.47)	.74	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	-1.49 (-9.23 to 6.24)	.71	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	-0.72 (-6.40 to 4.96)	.80	>0.99
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	1.72 (-3.48 to 6.93)	.52	>0.99
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	2.33 (-2.86 to 7.52)	.38	.99
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	1.91 (-4.30 to 8.12)	.55	>0.99
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	5.00 (0.59 to 9.42)	.03	.29
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	0.49 (-4.34 to 5.32)	.84	>0.99
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	-2.49 (-11.90 to 6.93)	.60	>0.99
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	-0.54 (-5.16 to 4.08)	.82	>0.99
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	2.05 (-7.56 to 11.67)	.68	>0.99
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	-0.29 (-9.23 to 8.64)	.95	>0.99
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	2.63 (-3.75 to 9.01)	.42	>0.99
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<.01	8.13 (2.00 to 14.26)	<.01	.14
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	4.05 (-0.85 to 8.96)	.11	.73
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	-1.01 (-7.11 to 5.09)	.74	>0.99
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	-2.99 (-12.92 to 6.94)	.55	>0.99
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	-0.28 (-6.07 to 5.50)	.92	>0.99
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	-1.75 (-11.82 to 8.32)	.73	>0.99
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	3.04 (-6.43 to 12.52)	.53	>0.99
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	1.62 (-5.67 to 8.91)	.66	>0.99
Standardized treatment effect^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		-0.02 (-0.11 to 0.08)	.71	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		0.04 (-0.03 to 0.12)	.26	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 17. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Biometric outcomes, 2017								
Continuous measures								
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	-0.21 (-1.51 to 1.09)	.75	>0.99
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	-0.61 (-4.53 to 3.31)	.76	>0.99
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	0.94 (-2.11 to 4.00)	.54	>0.99
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.03 (-1.32 to 1.26)	.97	>0.99
Blood pressure, mm Hg								
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	-0.82 (-3.43 to 1.78)	.54	>0.99
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	-1.54 (-3.16 to 0.09)	.06	0.71
Lipid panel								
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	-1.75 (-9.20 to 5.70)	.65	>0.99
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	-0.22 (-3.31 to 2.88)	.89	>0.99
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	-0.05 (-0.27 to 0.16)	.62	>0.99
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	0.47 (-6.09 to 7.03)	.89	>0.99
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	-7.60 (-19.89 to 4.69)	.23	0.98
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	0.16 (-3.81 to 4.13)	.94	>0.99
Binary measures, %								
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	-1.15 (-10.05 to 7.75)	.80	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	-8.07 (-17.27 to 1.13)	.09	0.79
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-4.73 (-14.33 to 4.86)	.33	>0.99
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	7.74 (-0.21 to 15.68)	.06	0.68
Biometric outcomes, 2018								
Continuous measures								
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	-0.53 (-1.94 to 0.87)	.46	>0.99
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	-0.43 (-4.64 to 3.77)	.84	>0.99
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	0.07 (-3.32 to 3.46)	.97	>0.99
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	0.10 (-1.32 to 1.51)	.89	>0.99
Blood pressure, mm Hg								
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	0.71 (-1.96 to 3.39)	.60	>0.99
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	-0.38 (-2.30 to 1.53)	.70	>0.99
Lipid panel								
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	-10.43 (-18.20 to -2.66)	<.01	0.19
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	-1.11 (-4.23 to 2.01)	.48	>0.99
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	-0.12 (-0.35 to 0.11)	.30	>0.99
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	-11.02 (-18.18 to -3.87)	<.01	0.06
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	4.40 (-8.84 to 17.65)	.51	>0.99
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	1.07 (-2.55 to 4.70)	.56	>0.99
Binary measures, %								
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	-0.67 (-10.15 to 8.80)	.89	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	-2.93 (-12.76 to 6.89)	.56	>0.99
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	-11.96 (-22.45 to -1.47)	.03	0.42
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	-1.95 (-11.64 to 7.75)	.69	>0.99
Standardized treatment effect ^c								
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83		-0.05 (-0.13 to 0.03)	.23	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 18. Heterogeneity: Academic Professional Employees: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	0.21 (-1.59 to 2.01)	.82	>0.99
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	2.01 (-2.24 to 6.26)	.35	.84
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	1.57 (-3.49 to 6.63)	.54	.93
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	1.06 (-1.03 to 3.15)	.32	.84
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	0.60 (-4.08 to 5.28)	.80	>0.99
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	0.35 (-5.18 to 5.89)	.90	>0.99
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	-0.05 (-0.46 to 0.36)	.82	>0.99
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	-0.01 (-0.10 to 0.09)	.88	>0.99
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	-0.00 (-0.07 to 0.07)	.98	>0.99
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	0.10 (-0.66 to 0.85)	.80	>0.99
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	0.08 (-0.24 to 0.40)	.62	.99
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	0.01 (-0.13 to 0.15)	.86	>0.99
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		0.03 (-0.04 to 0.10)	.43	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		0.01 (-0.09 to 0.10)	.91	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 19. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	0.98 (-0.46 to 2.41)	.18	.82
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	1.91 (-2.28 to 6.09)	.37	.96
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	0.62 (-7.07 to 8.31)	.87	>0.99
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	3.93 (-1.76 to 9.63)	.18	.82
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	-1.02 (-6.46 to 4.41)	.71	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	0.49 (-4.52 to 5.50)	.85	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	1.48 (-0.17 to 3.12)	.08	.56
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	1.35 (-3.18 to 5.89)	.56	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	0.47 (-7.62 to 8.57)	.91	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	1.97 (-4.15 to 8.10)	.53	>0.99
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	-3.38 (-9.01 to 2.25)	.24	.88
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	-0.33 (-6.00 to 5.35)	.91	>0.99
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	-0.52 (-6.82 to 5.77)	.87	>0.99
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	-5.31 (-10.66 to 0.03)	.05	.49
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	-0.36 (-5.49 to 4.78)	.89	>0.99
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	6.14 (-3.83 to 16.11)	.23	.91
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	0.83 (-4.13 to 5.78)	.74	>0.99
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	7.53 (-2.56 to 17.62)	.14	.81
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	-2.05 (-11.51 to 7.42)	.67	>0.99
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	-1.89 (-8.77 to 5.00)	.59	>0.99
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	-8.07 (-13.93 to -2.20)	<.01	.09
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	-4.09 (-9.87 to 1.70)	.17	.84
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	3.02 (-3.63 to 9.67)	.37	.94
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	5.57 (-4.99 to 16.13)	.30	.92
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	3.10 (-3.23 to 9.43)	.34	.92
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	6.44 (-4.17 to 17.05)	.23	.91
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	-5.94 (-16.09 to 4.21)	.25	.91
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	-0.18 (-8.16 to 7.80)	.97	>0.99
Standardized treatment effect ^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		0.04 (-0.06 to 0.14)	.47	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		-0.01 (-0.09 to 0.07)	.85	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 20. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)			
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b	
Biometric outcomes, 2017									
Continuous measures									
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	1.01 (-0.35 to 2.38)	.15	0.93	
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	1.18 (-3.03 to 5.40)	.58	>0.99	
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	-0.61 (-3.93 to 2.72)	.72	>0.99	
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.01 (-1.42 to 1.40)	.99	>0.99	
Blood pressure, mm Hg									
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	0.37 (-2.46 to 3.20)	.80	>0.99	
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	1.34 (-0.34 to 3.01)	.12	0.88	
Lipid panel									
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	1.13 (-6.66 to 8.93)	.78	>0.99	
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	0.36 (-2.89 to 3.61)	.83	>0.99	
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	-0.01 (-0.24 to 0.22)	.94	>0.99	
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	0.40 (-6.62 to 7.42)	.91	>0.99	
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	3.06 (-9.91 to 16.04)	.64	>0.99	
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	-1.34 (-6.08 to 3.39)	.58	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	1.04 (-8.67 to 10.75)	.83	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	2.87 (-6.89 to 12.63)	.56	>0.99	
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	5.12 (-4.97 to 15.21)	.32	>0.99	
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	-7.90 (-16.57 to 0.76)	.07	0.75	
Biometric outcomes, 2018									
Continuous measures									
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	1.35 (-0.12 to 2.82)	.07	0.75	
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	0.97 (-3.61 to 5.55)	.68	>0.99	
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	0.12 (-3.60 to 3.84)	.95	>0.99	
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	-0.18 (-1.75 to 1.39)	.82	>0.99	
Blood pressure, mm Hg									
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	-1.15 (-4.11 to 1.81)	.45	>0.99	
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	0.22 (-1.83 to 2.27)	.84	>0.99	
Lipid panel									
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	9.36 (1.30 to 17.42)	.02	0.37	
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	2.38 (-0.90 to 5.65)	.16	0.93	
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	0.01 (-0.23 to 0.25)	.91	>0.99	
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	10.09 (2.59 to 17.60)	<.01	0.17	
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	-8.35 (-23.10 to 6.39)	.27	0.99	
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	-0.35 (-4.61 to 3.91)	.87	>0.99	
Binary measures, %									
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	0.73 (-9.61 to 11.06)	.89	>0.99	
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	-0.39 (-10.80 to 10.03)	.94	>0.99	
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	14.13 (3.13 to 25.13)	.01	0.22	
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	1.16 (-9.11 to 11.44)	.82	>0.99	
Standardized treatment effect ^c									
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83			0.04 (-0.04 to 0.13)	.35	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 21. Heterogeneity: Civil Service Employees: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	0.28 (-1.43 to 2.00)	.75	>0.99
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	-1.78 (-6.27 to 2.70)	.44	.94
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	-1.61 (-6.87 to 3.66)	.55	.98
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	0.23 (-1.96 to 2.43)	.83	>0.99
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	-0.09 (-4.97 to 4.78)	.97	>0.99
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	0.01 (-5.73 to 5.74)	>.99	>0.99
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	0.07 (-0.37 to 0.51)	.75	.96
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	-0.01 (-0.11 to 0.09)	.82	.96
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	-0.03 (-0.11 to 0.06)	.51	.94
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	0.23 (-0.58 to 1.04)	.58	.96
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	-0.11 (-0.51 to 0.29)	.58	.96
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	-0.05 (-0.22 to 0.13)	.61	.96
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		-0.01 (-0.08 to 0.06)	.74	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		-0.02 (-0.13 to 0.09)	.75	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 22. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Health Beliefs and Self-Reported Health Behaviors^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Health beliefs, 2017								
Height, cm	170.5 (9.8)	170.9 (10.2)	-0.22 (-0.92 to 0.49)	.55	.96	0.42 (-1.00 to 1.84)	.56	>0.99
Weight, kg	83.9 (21.7)	84.1 (21.7)	0.03 (-1.91 to 1.97)	.98	>0.99	-0.27 (-4.18 to 3.65)	.89	>0.99
Chance of BMI > 30, %	46.2 (40.1)	46.8 (39.5)	-0.87 (-4.53 to 2.80)	.64	.96	0.56 (-6.77 to 7.90)	.88	>0.99
Chance of high cholesterol, %	37.1 (28.2)	40.2 (27.7)	-3.01 (-5.70 to -0.31)	.03	.24	-2.45 (-7.84 to 2.94)	.37	.99
Chance of high blood pressure, %	29.0 (26.0)	31.6 (27.1)	-2.41 (-4.96 to 0.14)	.06	.41	-2.08 (-7.19 to 3.02)	.42	>0.99
Chance of impaired glucose, %	28.3 (24.3)	31.0 (24.0)	-2.68 (-5.01 to -0.36)	.02	.22	0.10 (-4.56 to 4.76)	.97	>0.99
Health beliefs, 2018								
Height, cm	170.4 (10.1)	170.8 (10.9)	-0.33 (-1.11 to 0.45)	.40	.95	0.66 (-0.92 to 2.23)	.41	>0.99
Weight, kg	83.5 (21.4)	83.9 (22.1)	-0.61 (-2.70 to 1.47)	.56	.96	2.17 (-2.05 to 6.40)	.31	.98
Chance of BMI > 30, %	46.2 (40.1)	46.1 (39.4)	-0.10 (-3.97 to 3.78)	.96	>0.99	2.57 (-5.19 to 10.33)	.52	>0.99
Chance of high cholesterol, %	37.3 (27.6)	39.2 (28.5)	-1.74 (-4.57 to 1.09)	.23	.83	-1.00 (-6.71 to 4.72)	.73	>0.99
Chance of high blood pressure, %	29.4 (25.5)	32.4 (26.5)	-2.93 (-5.53 to -0.33)	.03	.24	2.22 (-3.03 to 7.48)	.41	>0.99
Chance of impaired glucose, %	28.4 (25.3)	29.5 (25.2)	-1.00 (-3.59 to 1.58)	.45	.95	1.07 (-4.16 to 6.30)	.69	>0.99
Self-reported health behaviors, 2017, %								
Has primary physician	89.4 (30.8)	85.9 (34.8)	3.20 (0.09 to 6.30)	.04	.42	-1.02 (-7.29 to 5.24)	.75	>0.99
No tobacco use	94.8 (22.3)	94.4 (23.0)	0.46 (-1.76 to 2.67)	.69	>0.99	2.36 (-2.11 to 6.84)	.30	.97
Exercise 1+ times/week	92.6 (26.2)	93.4 (24.9)	-0.84 (-3.26 to 1.58)	.50	>0.99	0.43 (-4.43 to 5.28)	.86	>0.99
Exercise 3+ times/week	57.6 (49.4)	53.1 (49.9)	4.73 (0.03 to 9.44)	.05	.43	-5.17 (-14.62 to 4.27)	.28	.97
Exercise for 20 minutes	93.4 (24.9)	94.2 (23.5)	-0.83 (-3.14 to 1.48)	.48	>0.99	0.57 (-4.08 to 5.21)	.81	>0.99
Exercise for 40 minutes	49.2 (50.0)	50.1 (50.0)	-0.86 (-5.66 to 3.95)	.73	>0.99	-11.04 (-20.65 to -1.44)	.02	.27
Never anxious/depressed	32.1 (46.7)	31.6 (46.5)	0.18 (-4.28 to 4.65)	.94	>0.99	3.89 (-5.05 to 12.82)	.39	.98
Never or sometimes anxious/depressed	86.9 (33.8)	87.1 (33.6)	-0.50 (-3.69 to 2.69)	.76	>0.99	-1.01 (-7.47 to 5.45)	.76	>0.99
Self-reported health behaviors, 2018, %								
Has primary physician	92.2 (26.9)	86.1 (34.6)	6.13 (3.04 to 9.22)	<.001	<0.01	-2.49 (-8.74 to 3.75)	.43	.98
No tobacco use	95.2 (21.5)	93.0 (25.6)	2.60 (0.16 to 5.04)	.04	.38	3.53 (-1.42 to 8.49)	.16	.86
Exercise 1+ times/week	91.0 (28.7)	89.9 (30.1)	1.26 (-1.79 to 4.31)	.42	>0.99	-3.66 (-9.84 to 2.51)	.25	.95
Exercise 3+ times/week	52.3 (50.0)	47.8 (50.0)	4.42 (-0.55 to 9.39)	.08	.58	-2.06 (-12.02 to 7.91)	.69	>0.99
Exercise for 20 minutes	92.1 (27.0)	91.2 (28.3)	0.89 (-2.00 to 3.78)	.54	>0.99	-2.90 (-8.77 to 2.97)	.33	.97
Exercise for 40 minutes	46.8 (49.9)	46.5 (49.9)	0.50 (-4.53 to 5.54)	.84	>0.99	-7.50 (-17.57 to 2.58)	.14	.84
Never anxious/depressed	32.6 (46.9)	31.5 (46.5)	0.68 (-4.05 to 5.42)	.78	>0.99	0.78 (-8.69 to 10.26)	.87	>0.99
Never or sometimes anxious/depressed	85.8 (35.0)	84.6 (36.1)	1.31 (-2.33 to 4.95)	.48	>0.99	-1.18 (-8.58 to 6.22)	.75	>0.99
Standardized treatment effect^c								
Health beliefs			-0.07 (-0.12 to -0.01)	.02		0.02 (-0.08 to 0.11)	.74	
Self-reported health behaviors			0.04 (-0.00 to 0.08)	.05		-0.03 (-0.11 to 0.04)	.41	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 2 reported in the main text. All regressions included stratification variables as controls. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 12 hypotheses in the health beliefs domain and 16 hypotheses in the self-reported health behaviors domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. The standardized treatment effect for health beliefs excludes height and weight.

eTable 23. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Biometrics^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Biometric outcomes, 2017								
Continuous measures								
Height, cm	170.3 (9.4)	170.3 (9.4)	0.24 (-0.41 to 0.89)	.48	>0.99	0.50 (-0.80 to 1.80)	.45	>0.99
Weight, kg	84.1 (21.9)	84.3 (22.0)	-0.05 (-2.01 to 1.91)	.96	>0.99	-0.42 (-4.37 to 3.54)	.84	>0.99
Waist, cm	95.2 (16.8)	95.6 (17.1)	-0.37 (-1.89 to 1.16)	.64	>0.99	0.81 (-2.28 to 3.89)	.61	>0.99
BMI	28.9 (7.0)	29.0 (7.1)	-0.12 (-0.76 to 0.53)	.72	>0.99	-0.23 (-1.54 to 1.07)	.73	>0.99
Blood pressure, mm Hg								
Systolic	123.8 (13.7)	124.9 (14.9)	-1.07 (-2.37 to 0.24)	.11	.89	-1.74 (-4.35 to 0.87)	.19	0.96
Diastolic	75.5 (9.1)	75.8 (8.9)	-0.34 (-1.16 to 0.47)	.41	>0.99	-1.77 (-3.39 to -0.15)	.03	0.5
Lipid panel								
Total cholesterol, mg/dL	187.4 (41.2)	185.9 (38.8)	1.69 (-2.04 to 5.41)	.37	>0.99	-5.71 (-13.17 to 1.76)	.13	0.91
HDL cholesterol, mg/dL	54.4 (17.3)	54.8 (17.9)	-0.38 (-1.93 to 1.17)	.63	>0.99	0.24 (-2.84 to 3.33)	.88	>0.99
Total cholesterol / HDL cholesterol	3.7 (1.2)	3.6 (1.1)	0.06 (-0.05 to 0.17)	.26	>0.99	-0.14 (-0.36 to 0.07)	.19	0.96
LDL cholesterol, mg/dL	107.4 (34.6)	106.6 (33.1)	1.07 (-2.21 to 4.35)	.52	>0.99	-4.24 (-10.82 to 2.34)	.21	0.96
Triglycerides, mg/dL	129.1 (70.1)	124.5 (61.3)	4.02 (-2.12 to 10.17)	.20	.98	-4.13 (-16.48 to 8.22)	.51	>0.99
Glucose, mg/dL	94.1 (20.5)	93.4 (21.0)	0.43 (-1.56 to 2.41)	.67	>0.99	-1.34 (-5.36 to 2.68)	.51	>0.99
Binary measures, %								
Obesity (BMI ≥30)	35.5 (47.9)	33.9 (47.4)	1.36 (-3.09 to 5.81)	.55	>0.99	-0.97 (-9.92 to 7.98)	.83	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.8 (50.0)	50.4 (50.0)	-0.63 (-5.23 to 3.98)	.79	>0.99	-9.24 (-18.47 to -0.01)	.05	0.62
High LDL cholesterol (≥100 mg/dL)	56.4 (49.6)	57.7 (49.4)	-1.06 (-5.86 to 3.74)	.66	>0.99	-9.40 (-19.00 to 0.21)	.06	0.66
High glucose (≥100 mg/dL)	25.1 (43.4)	22.5 (41.8)	2.54 (-1.44 to 6.52)	.21	.98	0.22 (-7.76 to 8.20)	.96	>0.99
Biometric outcomes, 2018								
Continuous measures								
Height, cm	170.2 (9.5)	170.2 (9.6)	0.02 (-0.68 to 0.72)	.95	>0.99	0.70 (-0.71 to 2.10)	.33	>0.99
Weight, kg	84.1 (21.7)	84.8 (22.2)	-0.86 (-2.97 to 1.24)	.42	>0.99	1.86 (-2.40 to 6.12)	.39	>0.99
Waist, cm	95.2 (17.3)	95.3 (17.4)	-0.11 (-1.80 to 1.59)	.90	>0.99	0.26 (-3.20 to 3.71)	.88	>0.99
BMI	29.0 (6.9)	29.3 (7.5)	-0.40 (-1.11 to 0.31)	.27	>0.99	0.53 (-0.91 to 1.96)	.47	>0.99
Blood pressure, mm Hg								
Systolic	122.3 (13.8)	122.4 (14.0)	-0.15 (-1.48 to 1.18)	.83	>0.99	1.45 (-1.22 to 4.13)	.29	0.99
Diastolic	76.3 (9.8)	76.2 (9.8)	0.04 (-0.91 to 1.00)	.93	>0.99	0.11 (-1.81 to 2.02)	.91	>0.99
Lipid panel								
Total cholesterol, mg/dL	178.8 (40.6)	178.3 (37.8)	0.70 (-3.19 to 4.59)	.72	>0.99	-7.87 (-15.65 to -0.09)	.05	0.62
HDL cholesterol, mg/dL	54.1 (16.7)	54.0 (17.1)	-0.09 (-1.64 to 1.47)	.91	>0.99	-1.82 (-4.93 to 1.28)	.25	0.98
Total cholesterol / HDL cholesterol	3.5 (1.1)	3.5 (1.2)	0.01 (-0.10 to 0.13)	.80	>0.99	-0.01 (-0.24 to 0.21)	.90	>0.99
LDL cholesterol, mg/dL	101.7 (35.1)	101.2 (33.7)	0.89 (-2.71 to 4.48)	.63	>0.99	-5.04 (-12.24 to 2.15)	.17	0.95
Triglycerides, mg/dL	120.2 (65.0)	119.4 (62.6)	1.13 (-5.48 to 7.74)	.74	>0.99	0.87 (-12.62 to 14.35)	.90	>0.99
Glucose, mg/dL	103.4 (18.7)	103.8 (17.6)	-0.52 (-2.32 to 1.27)	.57	>0.99	-0.09 (-3.70 to 3.53)	.96	>0.99
Binary measures, %								
Obesity (BMI ≥30)	36.5 (48.2)	36.3 (48.1)	-0.15 (-4.88 to 4.59)	.95	>0.99	-1.53 (-11.07 to 8.02)	.75	>0.99
Hypertension (systolic ≥130 or diastolic ≥80)	49.3 (50.0)	47.8 (50.0)	1.01 (-3.91 to 5.92)	.69	>0.99	1.86 (-8.00 to 11.72)	.71	>0.99
High LDL cholesterol (≥100 mg/dL)	47.5 (50.0)	48.1 (50.0)	0.31 (-4.94 to 5.57)	.91	>0.99	-8.41 (-18.94 to 2.12)	.12	0.88
High glucose (≥100 mg/dL)	55.3 (49.7)	52.8 (50.0)	2.83 (-2.01 to 7.68)	.25	>0.99	4.68 (-5.06 to 14.43)	.35	>0.99
Standardized treatment effect ^c								
Biometric outcomes			-0.00 (-0.05 to 0.04)	.83		-0.04 (-0.12 to 0.04)	.30	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 3 reported in the main text. All outcome variables were obtained during the on-site screening in either 2017 (12-month follow-up) or 2018 (24-month follow-up).

^b Adjusted *P* values account for the 32 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes. It excludes height, BMI, total cholesterol / HDL cholesterol, LDL cholesterol, and the four binary measures.

eTable 24. Heterogeneity: Above Median Salary: Interaction Effect of Wellness Program on Medical Diagnoses and Utilization^a

Outcome	Group Mean (SD)		Effect of Wellness Program Eligibility (Main Effect)			Effect of Wellness Program Eligibility (Interaction Effect)		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
Medical diagnoses, 2017, %								
Diabetes	5.6 (23.0)	6.8 (25.2)	0.26 (-0.61 to 1.12)	.56	.93	0.53 (-1.24 to 2.31)	.56	.88
Hypertension	15.3 (36.0)	18.1 (38.5)	-1.57 (-3.70 to 0.56)	.15	.50	-1.91 (-6.18 to 2.37)	.38	.88
Hyperlipidemia	18.7 (39.0)	19.5 (39.6)	0.40 (-2.13 to 2.93)	.76	.98	0.66 (-4.40 to 5.73)	.80	.88
Medical diagnoses, 2018, %								
Diabetes	6.3 (24.3)	7.8 (26.9)	-0.09 (-1.14 to 0.96)	.86	.98	0.88 (-1.25 to 3.02)	.42	.88
Hypertension	19.6 (39.7)	22.5 (41.8)	-1.55 (-3.87 to 0.77)	.19	.57	-4.12 (-8.77 to 0.53)	.08	.34
Hyperlipidemia	25.5 (43.6)	26.5 (44.2)	0.30 (-2.47 to 3.07)	.83	.98	2.03 (-3.50 to 7.56)	.47	.88
Medical utilization, 2017								
Office/outpatient (# days with at least 1 claim)	3.20 (3.28)	3.31 (3.44)	0.05 (-0.16 to 0.26)	.64	.96	0.29 (-0.13 to 0.70)	.17	.60
Inpatient (# days with at least 1 claim)	0.09 (0.68)	0.08 (0.59)	0.02 (-0.03 to 0.06)	.52	.96	0.00 (-0.09 to 0.10)	.94	>0.99
ER (# days with at least 1 claim)	0.13 (0.47)	0.15 (0.53)	-0.02 (-0.06 to 0.02)	.34	.87	0.00 (-0.07 to 0.08)	.93	>0.99
Medical utilization, 2018								
Office/outpatient (# days with at least 1 claim)	6.46 (6.16)	6.67 (6.54)	0.08 (-0.30 to 0.46)	.68	.95	0.46 (-0.31 to 1.22)	.24	.68
Inpatient (# days with at least 1 claim)	0.20 (1.41)	0.23 (2.59)	-0.03 (-0.19 to 0.14)	.77	.96	0.03 (-0.32 to 0.38)	.88	>0.99
ER (# days with at least 1 claim)	0.26 (0.79)	0.28 (1.13)	-0.02 (-0.10 to 0.05)	.56	.96	0.03 (-0.13 to 0.18)	.75	.99
Standardized treatment effect ^c								
Medical diagnoses			-0.01 (-0.04 to 0.02)	.59		-0.01 (-0.07 to 0.06)	.88	
Medical utilization			-0.00 (-0.05 to 0.04)	.92		0.03 (-0.06 to 0.13)	.49	

^a This table reports interaction effects for the effect of the wellness program. For reference, the table also includes the group means and effects of program eligibility from Table 4 reported in the main text. All regressions included stratification variables, baseline medical diagnoses, and baseline medical utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the number of hypotheses tested in each domain. We tested 6 hypotheses in the medical diagnoses domain and 6 hypotheses in the medical utilization domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

eTable 25. Mean Values and Effect of Wellness Program on Primary Care Physician (PCP) Utilization^a

Outcome	Mean Value		Effect of Wellness Program Eligibility			Effect of Wellness Program Participation		
	Treatment	Control	Effect (95% CI)	P Value	Adjusted P Value ^b	Effect (95% CI)	P Value	Adjusted P Value ^b
PCP utilization, 2017								
Continuous measures								
Total PCP visits	1.0 (2.2)	1.1 (2.3)	-0.06 (-0.22 to 0.11)	.50	.97	-0.09 (-0.34 to 0.17)	.50	.96
Total PCP office visits	0.5 (2.0)	0.6 (2.2)	-0.08 (-0.22 to 0.06)	.27	.76	-0.13 (-0.35 to 0.10)	.27	.76
Binary measures, %								
Any PCP visits	37.2	38.4	-0.52 (-3.98 to 2.94)	.77	.98	-0.83 (-6.28 to 4.62)	.77	.98
Any PCP office visits	11.6	11.6	-0.36 (-2.37 to 1.65)	.72	.98	-0.58 (-3.74 to 2.59)	.72	.98
PCP utilization, 2018								
Continuous measures								
Total PCP visits	2.1 (4.1)	2.1 (4.2)	-0.01 (-0.30 to 0.28)	.95	.98	-0.01 (-0.47 to 0.44)	.95	.98
Total PCP office visits	1.1 (3.8)	1.1 (4.0)	-0.07 (-0.33 to 0.19)	.59	.97	-0.11 (-0.52 to 0.29)	.59	.97
Binary measures, %								
Any PCP visits	52.6	52.9	0.69 (-2.91 to 4.29)	.71	.98	1.09 (-4.57 to 6.76)	.70	.98
Any PCP office visits	15.0	15.1	-0.65 (-2.85 to 1.55)	.56	.97	-1.03 (-4.49 to 2.43)	.56	.97
Standardized treatment effect ^c								
PCP utilization			-0.01 (-0.07 to 0.05)	.76		-0.01 (-0.11 to 0.08)	.76	

^a This table reports effects of program eligibility and local mean treatment effects of program participation. All regressions included stratification variables as controls. All regressions included stratification variables and baseline PCP utilization as controls. All regressions and means were weighted by the employee's number of months of insurance coverage in the post-intervention period. The 2017 period is defined as August 2016 to July 2017, and the 2018 period is defined as August 2016 to July 2018.

^b Adjusted *P* values account for the 8 hypotheses tested in this domain.

^c The standardized treatment effect gives equal weight to each outcome within a domain and includes both the 2017 and 2018 outcomes.

References

1. Ioannidis JP, Stanley TD, Doucouliagos H. The power of bias in economics research. *The Economic Journal*. 2017.
2. Gelman A. Don't calculate post-hoc power using observed estimate of effect size. *Annals of Surgery*. 2019;269(1):e9-e10.
3. Gerber A, Green D. *Field Experiments: Design, Analysis, and Interpretation*. W. W. Norton; 2012.
4. Song Z, Baicker K. Effect of a workplace wellness program on employee health and economic outcomes: a randomized clinical trial. *JAMA*. 2019;321(15):1491-1501.
5. Baicker K, Taubman SL, Allen HL, et al. The Oregon experiment—effects of Medicaid on clinical outcomes. *New England Journal of Medicine*. 2013;368(18):1713-1722.
6. Angrist JD, Imbens GW, Rubin DB. Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*. 1996;91(434):444-455.