Chicago Longitudinal Study:
Health Indicators

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Overview: The following report reviews the physical health indicators in the mid-thirties (between ages 35-37) of the participants in the Chicago Longitudinal Study (CLS). Data sources include a participant survey at age 35 and a physical health screening at age 37.

Indicators: Table 1 reports the descriptive statistics for various health outcomes from the health screening at age 37. We find that in general, the CPC program participants rated their health to be poorer than non-CPC participants. CPC program participants also reported higher levels of C-reactive protein as compared to the comparison group. No other significant differences were observed between the two groups.

We also find that study participants whose mothers had graduated from high school had higher levels of C-reactive protein, higher body mass index, and were more likely to be obese as compared to the participants whose mothers had not graduated from high school. Additionally, we find that living in poverty did not have a significant effect on any of the health measures measured in the study.

Participants who had four or more risk factors reported a higher level of triglycerides, very low-density lipids, and the cholesterol ratio (measured as total Cholesterol level divided by High-Density Lipids). Participants with a single parent reported lower levels of body mass index, high-density lipids, and C-reactive protein levels as compared to those living with both parents. Participants with a single parent were also less likely to be using drugs or alcohol.

There were significant differences between the health outcomes of male participants and the female participants, with female participants reporting significantly lower levels of glucose, cholesterol, triglycerides, high-density lipids, low-density lipids, very low-density lipids, and hemoglobin. However, female participants reported a higher body mass index, higher levels of fat-free mass, and higher levels of body fat percent as compared to male participants. Female participants were found to have a lower risk of full or hard cardiovascular events as compared to male participants on the various measures of the Framingham risk index calculated using the age 37 study, as well as the age 35 survey.

Table 2 reports the descriptive statistics for various health outcomes from the survey at age 35. We find that the CPC program participants were less likely to be diagnosed with diabetes as compared to the non-CPC participants. CPC participants were also found to have a lower risk of full or hard cardiovascular events as compared to non-CPC participants on the Framingham risk index. CPC program participants also had a higher score on AHA index as compared to the comparison group. Additionally, we find that extended participation in the program is associated with a lower risk of full or hard cardiovascular events on the Framingham risk index.

In the age 35 survey, we find that participants whose mothers had completed high school graduation had higher score on AHA index and lower scores on the Framingham risk index for a hard cardiovascular event. Additionally, participants who had four or more risk factors reported higher levels of hypertension and lower scores on AHA index. Participants with single parents also reported higher levels of hypertension as compared to participants who lived with both parents.

Gender differences were also strong in the age 35 survey, with female participants reporting higher levels of body mass index, obesity, and hypertension. However, women had lower rates of drugs and alcohol use, and lower risk of full or hard cardiovascular events on the Framingham risk index.

Correlates: Table 3 reports correlations between select health outcomes and explanatory variables. CPC program participation is negatively correlated with diabetes and chronic health problems in age 35 survey and Framingham risk scores, and positively correlated with the AHA index scores. Gender (female) is correlated with higher body mass index, obesity, body fat percent, and fat free-mass, while negatively correlated with diabetes at age 37, drug use at age 35, and Framingham risk indices. Mother's education (less than high school) is negatively correlated with body mass index and obesity at age 37, C-reactive protein levels, fat-free mass, and AHA index, while positively correlated with hard Framingham index from age 35 survey. High poverty is correlated with lower drug use, while having single parent is negatively correlated with body mass index at age 37, drug use at age 37, and C-reactive protein levels, but positively correlated with hypertension at age 35.

	Sample Size	Sample Mean	Min	Max	SD	No CPC (n=102)	CPC (n=199)	Diff	No Extended Participation (n=187)	Extended Participation (n=114)	Diff
Table 1: Descriptive Statistics of Health Outcomes, CLHS Study											
Glucose	291	101.34	70	347	36.55	103.2	100.37	2.83	100.42	102.88	-2.46
Cholesterol	291	175.06	91	319	35.42	173.33	175.96	-2.63	174.20	176.49	-2.29
Triglycerides	291	99.04	27	541	63.17	96.7	100.26	-3.56	98.54	99.87	-1.33
HDL	291	52.10	23	118	15.44	52.23	52.04	0.19	52.80	50.95	1.85
VLDL	289	19.26	5	72	10.78	19.32	19.23	0.09	19.71	18.50	1.21
LDL	289	103.52	35	243	33.18	101.78	104.43	-2.65	101.69	106.62	-4.93
Cholesterol Ratio	291	3.59	1.51	8.17	1.12	3.52	3.63	-0.12	3.53	3.70	-0.18
Hemoglobin	290	5.80	4.5	13.8	1.26	5.87	5.76	0.11	5.76	5.86	-0.10
C-reactive Protein	291	4.76	0.15	60.14	7.29	3.70	5.32	-1.62[+]	4.52	5.17	-0.65
ln CRP	291	0.86	-1.90	4.10	1.20	0.74	0.93	-0.19	0.80	0.97	-0.17
BMI	295	32.75	15.6	59.9	8.83	32.67	32.80	-0.13	32.41	33.32	-0.91
Waist Girth	299	94.20	59.5	173	17.06	93.87	94.37	-0.50	94.10	94.39	-0.31
Body Fat %	295	32.95	4.1	53.7	10.60	33.21	32.81	0.40	32.51	33.67	-1.17
Fat-Free Mass	295	72.67	5	278	40.21	72.98	72.50	0.48	72.39	73.11	-0.72
BP Systolic	299	117.84	81	194	16.00	118.11	117.71	0.40	118.15	117.34	0.81
BP Diastolic	299	75.99	48	148	13.10	76.30	75.82	0.48	75.71	76.44	-0.73
Diabetes	291	3.09%	0	1	0.17	4.00%	2.62%	0.014	0.027	0.037	-0.01
Obese	295	55.25%	0	1	0.50	6.00%	52.82%	0.072	56.52%	53.15%	3.37%
High Cholesterol Ratio	291	9.28%	0	1	0.29	8.00%	9.95%	-0.02	8.24%	11.01%	-2.77%
Hypertension	299	19.73%	0	1	0.40	19.61%	19.80%	-0.002	20.97%	17.70%	3.27%
High Cholesterol level	291	7.90%	0	1	0.27	9.00%	7.33%	0.017	8.79%	6.42%	2.37%
Drug or Alcohol use	301	7.64%	0	1	0.27	6.86%	8.04%	0.01	5.88%	10.53%	-4.64%
High CRP (>2)	291	55.67%	0	1	0.50	51.00%	58.12%	-0.07	52.75%	60.55%	7.80%
Very High CRP (>3)	291	43.30%	0	1	0.50	37.00%	46.60%	-0.10	41.76%	45.87%	4.11%
V V High CRP (>5)	291	28.52%	0	1	0.45	26.00%	29.84%	-0.04	28.02%	29.36%	1.34%
General Health	301	3.07	1	5	1.10	2.95	3.13	-0.17	2.98	3.21	-0.23[+]
General Health 2	301	3.09	1	5	1.08	2.92	3.18	-0.25*	2.99	3.25	-0.27*
Personality Inventory Form	268	0.52	0.04	2.24	0.42	0.53	0.52	0.01	0.53	0.50	0.03
AHA_ideal	293	4.06	1	6	0.94	4.01	4.09	-0.08	4.06	4.07	-0.01
AHA_sum_res	293	8.59	2	13	1.96	8.51	8.64	-0.13	8.58	8.61	-0.03
Framingham_Full	294	18.39	6	77	11.25	18.24	18.46	-0.22	18.97	17.45	1.53
Framingham_Hard	294	10.38	3	57	8.24	10.25	10.45	-0.20	10.87	9.58	0.19
Fram_BMI_Full	293	24.03	4	86	15.96	23.74	24.18	-0.44	24.02	24.06	-0.04
Fram_BMI_Hard	293	14.39	2	78	12.82	14.28	14.45	-0.17	14.43	14.32	0.11
Fram_Chol_Full	289	16.93	3	71	11.49	16.79	17.01	-0.22	16.87	17.05	-0.18
Fram_Chol_Hard	289	9.20	1	66	8.52	9.19	9.20	-0.01	9.18	9.23	-0.05

Significance Level: ***1%, **5%, +10%

	Mom HS Grad (n=136)	Mom < HS Grad (n=165)	Diff	Low Pov (n=74)	High Pov[a] (n=227)	Diff	No High Risk (n=79)	High Risk[b] (n=222)	Diff
Glucose	100.64	101.91	-1.27	99.86	103.04	-3.18	100.67	101.58	-0.91
Cholesterol	172.13	177.42	-5.29	174.55	175.63	-1.07	171.08	176.46	-5.38
Triglycerides	96.85	100.80	-3.95	101.35	96.40	4.94	86.74	103.39	-16.65[+]
HDL	51.59	52.52	-0.92	51.57	52.71	-1.15	54.62	51.21	3.40[+]
VLDL	18.15	20.14	-1.99	19.24	19.28	-0.04	17.39	19.92	-2.53[+]
LDL	101.95	104.76	-2.80	103.41	103.63	-0.22	99.07	105.10	-6.04
Cholesterol Ratio	3.53	3.64	-0.11	3.63	3.55	0.08	3.33	3.68	-0.35*
Hemoglobin	5.72	5.86	-0.14	5.75	5.86	-0.12	5.79	5.81	-0.02
C-reactive Protein	5.77	3.95	1.82*	4.21	5.39	-1.18	5.22	4.60	0.62
ln CRP	1.02	0.74	0.28*	0.82	0.92	-0.10	1.02	0.81	0.22
BMI	33.88	31.82	2.06*	32.93	32.56	0.37	33.91	32.35	1.56
Waist Girth	95.30	93.31	1.99	93.64	94.81	-1.16	95.65	93.69	1.96
Body Fat %	33.94	32.12	1.81	33.24	32.63	0.61	33.87	32.62	1.25
Fat-Free Mass	77.75	68.44	9.31*	72.85	72.46	0.39	77.01	71.13	5.88
BP Systolic	117.11	118.45	-1.34	116.72	119.06	-2.34	115.76	118.58	-2.82
BP Diastolic	76.32	75.71	0.61	75.52	76.50	-0.98	75.05	76.32	-1.27
Diabetes	30.77%	31.06%	-0.03%	2.58%	3.68%	-1.10%	3.95%	2.79%	1.16%
Obese	61.94%	49.69%	12.25%*	58.17%	52.11%	6.06%	57.14%	54.59%	2.56%
High Cholesterol Ratio	6.92%	11.18%	-4.25%	11.61%	6.62%	5.00%	3.95%	11.16%	-7.22%[+]
Hypertension	20.59%	19.02%	1.57%	17.31%	22.38%	-5.07%	15.38%	21.27%	5.88%
High Cholesterol	5.38%	9.94%	4.55%	7.10%	8.82%	-1.73%	6.58%	8.37%	1.79%
Drug or Alcohol use	5.88%	9.09%	-3.21%	7.00%	8.33%	-1.32%	8.86%	7.20%	1.65%
High CRP (>2)	59.23%	52.80%	6.44%	55.48%	55.88%	0.40%	63.16%	53.02%	10.13%
Very High CRP (>3)	50.77%	37.27%	13.50%*	43.22%	43.38%	0.16%	46.05%	42.33%	3.73%
V V High CRP (>5)	33.85%	24.22%	9.62%[+]	27.10%	30.15%	-3.05%	31.58%	27.44%	4.14%
General Health	3.13	3.01	0.12	3.10	3.03	0.07	3.22	3.01	0.20
General Health 2	3.11	3.07	0.04	3.06	3.12	-0.05	3.16	3.06	0.10
Personality Inventory Form	0.523	0.517	0.005	0.54	0.50	0.04	0.49	0.53	-0.04
AHA_ideal	4.15	3.99	0.16	4.08	4.05	0.03	4.13	4.04	0.09
AHA_sum_res	8.68	8.53	0.15	8.69	8.49	0.19	8.64	8.58	0.06
Framingham_Full	18.70	18.14	0.56	17.64	19.21	-1.57	19.28	18.07	1.21
Framingham_Hard	10.47	10.30	0.17	9.68	11.16	-1.48	11	10.16	0.84
Fram_BMI_Full	24.22	23.87	0.36	23.29	24.83	-1.54	24.46	23.88	0.58
Fram_BMI_Hard	14.46	14.33	0.12	13.63	15.21	-1.57	14.53	14.34	0.19
Fram_Chol_Full	16.59	17.21	-0.62	16.27	17.69	-1.42	15.31	17.51	-2.20
Fram_Chol_Hard	8.94	9.41	-0.47	8.65	9.82	-1.17	7.93	9.64	-1.71

	Male (n=120)	Female (n=181)	Diff	No Single Parent (N=69)	Single Parent (N=232)	Diff
Table 1: Descriptive Statistics of Health Outcomes, CLHS Study						
Glucose	109.31	96.29	13.02**	105.30	100.18	5.12
Cholesterol	184.87	168.83	16.04**	178.14	174.15	3.99
Triglycerides	111.81	90.93	20.87**	96.42	99.80	-3.38
HDL	47.73	54.88	-7.16**	54.91	51.28	3.63+
VLDL	21.58	17.79	3.79**	19.27	19.25	0.02
LDL	115.48	95.94	19.54**	103.96	103.39	0.57
Cholesterol Ratio	4.12	3.25	0.87**	3.48	3.62	-0.14
Hemoglobin	5.98	5.68	0.30*	5.93	5.76	0.16
C-reactive Protein	4.46	4.96	-0.50	6.35	4.30	2.05*
ln CRP	0.73	0.95	-0.22	1.11	0.79	0.32+
BMI	31.39	33.69	32.75*	34.29	32.29	2.00+
Waist Girth	97.78	91.80	5.97**	95.82	93.72	2.10
Body Fat %	25.84	37.82	-11.97**	34.50	32.48	2.02
Fat-Free Mass	62.63	79.55	-16.92**	77.17	71.31	5.86
BP Systolic	120.83	115.87	4.97**	115.75	118.46	-2.71
BP Diastolic	74.58	76.92	-2.34	75.63	76.09	-0.46
Diabetes	5.31	1.69	3.62+	6.06%	2.22%	3.84%
Obese	50	58.86	-8.86	58.82%	54.19%	4.64%
High Cholesterol Ratio	17.70	3.93	13.77**	9.09%	9.33%	-0.24%
Hypertension	21.01	18.89	2.11	16.18%	20.78%	-4.60%
High Cholesterol	12.39	5.06	7.33*	7.58%	8.00%	-0.42%
Drug or Alcohol use	6.67	8.29	1.62	13.04%	6.03%	7.01%+
High CRP (>2)	51.33	58.43	7.10	62.12%	53.78%	8.34%
Very High CRP (>3)	38.94	46.07	7.13	51.52%	40.89%	10.63%
V V High CRP (>5)	21.24	33.15	-11.90*	36.36%	26.22%	10.14%
General Health	2.97	3.13	-0.17	3.25	3.01	0.23
General Health 2	3.03	3.13	-0.09	3.19	3.06	0.13
Personality Inventory Form	0.54	0.51	0.03	0.51	0.53	-0.02
AHA_ideal	4.17	3.99	0. mn17	3.99	4.09	-0.10
AHA_sum_res	8.89	8.39	0.50*	8.28	8.69	-0.41
Framingham_Full	23.03	15.20	7.83**	19.72	17.99	1.73
Framingham_Hard	14.13	7.79	6.34**	11.50	10.04	1.46
Fram_BMI_Full	30.56	19.56	11.00**	24.57	23.87	0.70
Fram_BMI_Hard	20.29	10.36	9.93**	14.82	14.26	0.56
Fram_Chol_Full	22.93	13.14	9.79**	16.06	17.19	-1.13
Fram_Chol_Hard	14.03	6.14	7.89**	8.74	9.33	-0.59

Significance Level: ***1%, **5%, +10%
[a]**High poverty denotes 40% or greater poverty in the census tract area**
[b]**High risk denotes 4 or more risk indicators**

Table 2: Descriptive Statistics of Health Outcomes, Age 35 Survey

	Sample Size	Sample Mean	Min	Max	SD	No CPC	CPC	Diff	No Extended Participation	Extended Participation	Diff
BMI	1065	30.49	17.34	68.14	6.89	30.86	30.29	0.57	30.65	30.22	0.43
Diabetes	1097	5.38%	0	1	0.2257	7.78%	4.14%	3.63%*	6.01%	4.34%	1.67%
Obese	1065	45.35%	0	1	0.4981	47.65%	44.18%	3.47%	46.39%	43.64%	2.75%
Hypertension	1096	16.88%	0	1	0.3747	17.16%	16.74%	0.42%	16.59%	17.35%	-0.76%
Drugs	1097	5.83%	0	1	0.2345	7.45%	4.99%	2.45%[+]	6.14%	5.33%	0.81%
Drugs or Alcohol	1100	9.09%	0	1	0.2876	9.84%	8.70%	1.14%	9.05%	9.16%	-0.11%
AHA_ideal	1042	4.00	1	7	0.99	3.89	4.05	-0.16*	3.97	4.05	-0.08
AHA_sum_res	1039	8.51	1	14	2.01	8.36	8.58	-0.22[+]	8.46	8.60	-0.14
Framingham_Full	1060	19.67	5	86	11.13	21.22	18.89	2.33**	20.25	18.73	1.52*
Framingham_Hard	1060	11.25	2	77	8.18	12.35	10.69	1.67**	11.67	10.55	1.12*

Significance Level: **1%, *5%, [+]10%

Table 2: Descriptive Statistics of Health Outcomes, Age 35 Survey

	Mom HS Grad	Mom < HS Grad	Diff	Low Pov	High Pov[a]	Diff	No High Risk	High Risk[b]	Diff
BMI	30.73	30.26	0.47	30.24	30.74	-0.50	30.58	30.45	0.13
Diabetes	4.21%	6.43%	-2.22%	5.10%	5.66%	-0.56%	4.18%	5.85%	-1.67%
Obese	46.15%	44.62%	1.53%	21.44%	21.72%	-0.28%	46.58%	44.85%	1.73%
Hypertension	14.97%	18.61%	-3.64%	17.34%	16.42%	0.91%	13.18%	18.34%	-5.16%*
Drugs	5.58%	6.07%	-0.49%	7.10%	4.56%	2.54%[+]	7.10%	5.34%	1.76%
Drugs or Alcohol	8.05%	10.04%	-1.99%	10.18%	8.00%	2.18%	9.65%	8.87%	0.77%
AHA_ideal	4.08	3.93	0.15*	4.03	3.97	0.06	4.11	3.95	0.15*
AHA_sum_res	8.61	8.42	0.19	8.58	8.44	0.14	8.70	8.43	0.27[+]
Framingham_Full	19.09	20.20	-1.11	19.26	20.09	-0.82	19.28	19.83	-0.56
Framingham_Hard	10.79	11.67	-0.88[+]	10.88	11.62	-0.74	11.14	11.29	-0.16

[a]High poverty denotes 40% or greater poverty in the census tract area
[b]High risk denotes 4 or more risk indicators

Table 2: Descriptive Statistics of Health Outcomes, Age 35 Survey

	Male	Female	Diff	No Single Parent	Single Parent	Diff
BMI	29.11	31.70	-2.59**	30.64	30.44	0.20
Diabetes	4.19%	6.38%	-2.18%	5.60%	5.31%	0.29%
Obese	38.68%	51.24%	-12.56%**	46.36%	45.02%	1.34%
Hypertension	15.20%	18.29%	-3.09%	11.94%	18.48%	6.54%*
Drugs	10.60%	1.84%	8.76%**	6.72%	5.55%	1.17%
Drugs or Alcohol	15.77%	3.51%	12.26%**	11.11%	8.43%	2.68%
AHA_ideal	3.97	4.02	-0.05	4.00	3.996	0.004
AHA_sum_res	8.58	8.44	0.14	8.45	8.53	-0.08
Framingham_Full	24.20	15.70	8.50**	19.97	19.58	0.40
Framingham_Hard	15.03	7.94	7.09**	11.57	11.14	0.43

[a]High poverty denotes 40% or greater poverty in the census tract area
[b]High risk denotes 4 or more risk indicators

	CPC	Ext Group	Female	Mother < HS	High Poverty	High Risk	Single Parent
				Table 3: Pairwise Correlations of Health Outcomes			
BMI Age 35	-0.039	-0.030	0.188*	-0.034	0.037	-0.008	-0.013
BMI Age 37	0.027	0.053	0.119*	-0.135*	-0.054	-0.127*	-0.169*
Obese Age 35	-0.033	-0.027	0.126*	-0.015	0.034	-0.016	-0.012
Obese Age 37	-0.068	-0.033	0.088	-0.123*	-0.061	-0.023	-0.039
Diabetes Age 35	-0.076*	-0.036	0.048	0.049	0.012	0.033	-0.006
Diabetes Age 37	-0.038	0.026	-0.102*	0.001	0.032	-0.029	-0.093
Hypertension Age 35	-0.005	0.010	0.041	0.049	-0.012	0.062*	0.075*
Hypertension Age 37	0.002	-0.040	-0.026	-0.020	0.064	0.065	0.049
Drugs Age 35	-0.050	-0.017	-0.181*	0.010	-0.054*	-0.034	-0.021
Drugs Age 37	0.021	0.085	0.030	0.060	0.025	-0.027	-0.111*
AHA_ideal	0.076*	0.040	0.025	-0.075*	-0.028	-0.071*	-0.002
AHA_sum_res	0.052*	0.034	-0.035	-0.046	-0.035	-0.061*	0.017
Framingham_Full	-0.099*	-0.066*	-0.381*	0.050	0.037	0.023	-0.015
Framingham_Hard	-0.096*	-0.066*	-0.433*	0.054*	0.045	0.009	-0.022
Fram_BMI_Full	0.025	-0.005	-0.333*	0.003	0.001	-0.073	-0.050
Fram_BMI_Hard	0.012	-0.022	-0.379*	0.021	0.010	-0.058	-0.045
Fram_Chol_Full	0.028	0.024	-0.429*	0.056	0.041	0.051	0.022
Fram_Chol_Hard	0.025	0.013	-0.469*	0.079	0.038	0.067	0.014
CRP	0.106*	0.043	0.033	-0.125*	0.081	-0.037	-0.118*
Log CRP	0.074	0.070	0.091	-0.117*	0.040	-0.080	-0.111*
High CRP (>3)	0.092	0.040	0.070	-0.136*	0.002	-0.033	-0.090
Waist Girth	0.014	0.009	-0.172*	-0.058	0.034	-0.051	-0.052
Body Fat %	-0.018	0.053	0.556*	-0.085	-0.029	-0.052	-0.081
Fat-Free Mass	-0.006	0.009	0.207*	-0.116*	-0.005	-0.064	-0.061
Self-Rated Health Age 37	0.076	0.103*	0.074	-0.055	-0.034	-0.081	-0.090
Limited by Health Age 37	0.070	-0.008	0.044	-0.023	0.018	-0.020	0.078
Chronic Problems Age 35	-0.071*	-0.075*	-0.035	0.022	-0.002	-0.004	-0.006
*Significant at 10% level							

Variable Name	Variable Description
Glucose	Glucose level in mg/dL from the health exam
Cholesterol	Cholesterol level in mg/dL from the health exam
Triglycerides	Triglycerides level in mg/dL from the health exam
HDL	High-Density Lipoprotein (HDL) level in mg/dL from the health exam
VLDL	Very Low-Density Lipoprotein (VLDL) level in mg/dL from the health exam
LDL	Low-Density Lipoprotein (LDL) level in mg/dL from the health exam
Cholesterol Ratio	Total Cholesterol/HDL
Hemoglobin	Hemoglobin level in mg/dL from the health exam
C-reactive Protein	C-Reactive Protein level in mg/L from the health exam
ln CRP	Natural log of C-reactive protein level
BMI	Body Mass Index calculated using the height and weight from the health exam
Waist Girth	Waist Girth rounded to the nearest 0.5 cm
Body Fat %	Total body fat % measured from the health exam
Fat-Free Mass	Fat-free mass measured from the health exam
BP Systolic	Average Systolic blood pressure taken from 3 readings during the health exam
BP Diastolic	Average Diastolic blood pressure taken from 3 readings during the health exam
Diabetes	Diabetes is 1 if Glucose level is higher than 200, 0 otherwise
Obese	Obese is 1 if BMI is greater than 30, 0 otherwise
High Chol. Ratio	High Cholesterol Ratio is 1 if Cholesterol Ratio is greater than 5, 0 otherwise
Hypertension	Hypertension is 1 if Systolic blood pressure is greater than 130 or diastolic blood pressure is greater than 90
High Cholesterol	High Cholesterol Ratio is 1 if Cholesterol level is greater than 220, 0 otherwise
Drug or Alcohol use	Drug or Alcohol use is 1 if the respondent said yes to "You had personal problems with drugs or alcohol"
High CRP (>2)	High CRP is 1 if C-reactive protein level is greater than 2, 0 otherwise
Very High CRP (>3)	High CRP is 1 if C-reactive protein level is greater than 3, 0 otherwise
V V High CRP (>5)	High CRP is 1 if C-reactive protein level is greater than 5, 0 otherwise
General Health	In general, how would you describe your health on a scale of 1 (Excellent) to 5 (Poor)
General Health 2	Would you say that in general, your health is: 1 (Excellent) to 5 (Poor)
Personality Inventory Form	Average Total Score on the Personality Inventory Form
AHA_ideal	AHA_ideal is the sum of all ideal counts from each of the 7 indicators: Body-Mass Index, Blood Pressure, Smoking, Cholesterol, Diabetes, Nutrition, and Physical Activity
AHA_sum_res	AHA_sum_restrict is the sum of all 7 AHA indicators (Body-Mass Index, Blood Pressure, Smoking, Cholesterol, Diabetes, Nutrition, and Physical Activity) using simply x + y + z in SPSS – this means that those with a score will have a value for every AHA variable. This variable has a range of 0 – 14 (the AHA variables were recoded from 1-2-3 to 0-1-2 and summed).
Framingham_Full	Framingham Risk Index: 30-year risk of having a full CVD event based on Age 35 Survey
Framingham_Hard	Framingham Risk Index: 30-year risk of having a hard CVD event based on Age 35 Survey
Fram_BMI_Full	Framingham Risk Index: 30-year risk of having a full CVD event based on BMI calculated during the health exam
Fram_BMI_Hard	Framingham Risk Index: 30-year risk of having a hard CVD event based on BMI calculated during the health exam
Fram_Chol_Full	Framingham Risk Index: 30-year risk of having a full CVD event based on Cholesterol calculated during the health exam
Fram_Chol_Hard	Framingham Risk Index: 30-year risk of having a hard CVD event based on Cholesterol calculated during the health exam

Framingham variable descriptions:

The Framingham Risk Index is calculated via a variety of indicators, including sex, age, BMI, smoking, high blood pressure, treat blood pressure, and diabetes. You can find the calculators used (which were done twice) here: https://www.framinghamheartstudy.org/fhs-risk-functions/cardiovascular-disease-30-year-risk/

For the Age 35 Survey, the "BMI" calculation was used. The following variables were used to calculate the risk score using the excel sheets at the link above:

- *Age:* Calculate difference between DOB and date of survey completion
- *Sex*: sexk2n
- *Systolic Blood Pressure*:
    o If they wrote in their systolic blood pressure on the survey, that value was used. If they did not but they did respond to whether or not they currently have issues with high blood pressure or hypertension, they received a "140" for systolic blood pressure. If they said they did not have issues, they received a "119"
    o SPSS code:
        ▪ recode currenthighbp (1 = 140) (0 = 119) into bpf_le.
          compute sysbp = bpf_le.
          if ((s35q131S < 500) and (bpf_le ge 0)) sysbp = s35q131s.
          execute.
- *BMI*: BMI35_leii (see other documents for how that was computed)
- *SMOKE*:
    o on s35q104a, if they answer to any of the responses besides "never" or "missing," they receive a "1" because they are currently smoking some amount.
        ▪ Fill in 6 cases (mark as 0 if have every other indicator but missing smoke)
- *Treat blood pressure:*
    o Says if they're getting treatment or not, regardless of whether or not they "currently are bothered" by it
    o SPSS code:
        ▪ if (s35q101b = 2) treatandorbotheredbp_f = 0.
          if (s35q101b2 = 2) treatandorbotheredbp_f = 0.
          if (s35q101b2 = 1) treatandorbotheredbp_f = 1.
          if ((s35q101b1 = 1) and missing(s35q101b2)) treatandorbotheredbp_f = 0.
          if ((s35q101b1 = 2) and missing(s35q101b2)) treatandorbotheredbp_f = 0.
          execute.
- *Diabetes*:
    o Used the AHA-defined definition of poor from Age 35 survey: if they reported currently being bothered by it, regardless of treatment status.
        ▪ Fill in 2 cases (mark as 0 if have every other indicator but missing smoke)

The survey yielded **F_YourRisk**, **H_YourRisk**, and F_Opt and Norm and H_Opt and Norm. The **F_YourRisk** is the 30-year risk of having a full CVD event: meaning coronary death, myocardial infarction, coronary insufficiency, angina, ischemic stroke, hemorrhagic stroke, transient ischemic attack, peripheral artery disease, heart failure. **H_YourRisk** is your 30-year risk

of having a hard CVD event: meaning coronary death, myocardial infarction, stroke. Descriptions of these can be found on the website I linked to above.

The opt and norm variables simply refer to the optimal and normal risk scores for that person's age.

For the <u>Age 37 Health Exam</u>:

- *TCL and HDL* were taken straight from the blood results.
- *Smoke* was taken from the Age 35 survey (as above), since smoking was not asked on the health exam.
  - o *1 case only had smoking needed to calculate the Framingham missing, so it was filled in as 0.*
- *Systolic blood pressure* was taken straight from the exam as the average of the three blood pressure exams (bp_2e_sys_avg).
- *BMI* was anthro_bmi from the exam.
- *Diabetes* was assessed using AHA-defined definitions of poor:
  - o SPSS code:
    - ▪ if (Fasting_Glucose ge 126) AHA_diabetes_he = 1.
      if ((Fasting_Glucose lt 126) and (Fasting_Glucose ge 100)) AHA_diabetes_he = 2.
      if (Fasting_Glucose lt 100) AHA_diabetes_he = 3.
      execute.
    - ▪ recode AHA_diabetes_he (1=1) (2=0) (3 = 0) (else=copy) into DIABETES.
      execute.
  - o 10 cases only had diabetes missing, so they were filled in as 0 (mode).
- *Treat blood pressure* was taken from the exam data using bp_med.

The health exam yielded two pairs of results: BMI_**FYourRisk**_he and BMI_**HYourRisk**_he and CH_**FYourRisk**_he and CH_**HYourRisk**_he. The one beginning with "BMI" was calculated using the "BMI" calculator; the one beginning with "CH" was calculated using the cholesterol (lipids) calculator.

Relevant files used for calculation:

Bmi and cholest HE fram.sav

(all can be found in Lauren's staff folder → Framingham)

Final variables found in LE Health Survey and Exam Vars 2020.09.29.sav in Data files → Health

The AHA Index uses 7 different metrics to compute an overall index score (between 1 and 7). Below are the descriptions of each metric – not just the simple count metric, but also how the continuous variables were measured. These definitions are based off of the AHA (https://www.ahajournals.org/doi/pdf/10.1161/CIR.0000000000000659) definitions (see table below). However, because we don't have exact metrics on all of these measures, approximate measures were used for the variables to define them into ideal, intermediate, or poor. See below for details.

Table 2-1. Definitions of Poor, Intermediate, and Ideal Cardiovascular Health for Each Metric in the AHA 2020 Goals

	Level of Cardiovascular Health for Each Metric		
	Poor	**Intermediate**	**Ideal**
Current smoking			
Adults ≥20 y of age	Yes	Former ≥12 mo	Never or quit >12 mo
Children 12–19 y of age*	Tried during the prior 30 d	…	Never tried; never smoked whole cigarette
BMI†			
Adults ≥20 y of age	≥30 kg/m²	25–29.9 kg/m²	<25 kg/m²
Children 2–19 y of age	>95th percentile	85th–95th percentile	<85th percentile
Physical activity			
Adults ≥20 y of age	None	1–149 min/wk moderate or 1–74 min/wk vigorous or 1–149 min/wk moderate + 2× vigorous	≥150 min/wk moderate or ≥75 min/wk vigorous or ≥150 min/wk moderate + 2× vigorous
Children 12–19 y of age	None	>0 and <60 min of moderate or vigorous every day	≥60 min of moderate or vigorous every day
Healthy diet pattern, No. of components (AHA diet score)‡			
Adults ≥20 y of age	<2 (0–39)	2–3 (40–79)	4–5 (80–100)
Children 5–19 y of age	<2 (0–39)	2–3 (40–79)	4–5 (80–100)
Total cholesterol, mg/dL			
Adults ≥20 y of age	≥240	200–239 or treated to goal	<200
Children 6–19 y of age	≥200	170–199	<170
Blood pressure			
Adults ≥20 y of age	SBP ≥140 mm Hg or DBP ≥90 mm Hg	SBP 120–139 mm Hg or DBP 80–89 mm Hg or treated to goal	<120 mm Hg/<80 mm Hg
Children 8–19 y of age	>95th percentile	90th–95th percentile or SBP ≥120 mm Hg or DBP ≥80 mm Hg	<90th percentile
Fasting plasma glucose, mg/dL			
Adults ≥20 y of age	≥126	100–125 or treated to goal	<100
Children 12–19 y of age	≥126	100–125	<100

AHA indicates American Heart Association; BMI, body mass index; DBP, diastolic blood pressure; ellipses (…), data not available; and SBP, systolic blood pressure.
*Age ranges in children for each metric depend on guidelines and data availability.
†Represents appropriate energy balance, that is, appropriate dietary quantity and physical activity to maintain normal body weight.
‡In the context of a healthy dietary pattern that is consistent with a Dietary Approaches to Stop Hypertension (DASH)–type eating pattern, to consume ≥4.5 cups/d of fruits and vegetables, ≥2 servings/wk of fish, and ≥3 servings/d of whole grains and no more than 36 oz/wk of sugar-sweetened beverages and 1500 mg/d of sodium. The consistency of one's diet with these dietary targets can be described using a continuous AHA diet score, scaled from 0 to 100 (see chapter on Nutrition). Modified from Lloyd-Jones et al.[1] Copyright © 2010, American Heart Association, Inc.

Components of AHA and this document:

- BMI
- Smoking

- [Diabetes](#)
- [Cholesterol](#)
- [Blood pressure](#)
- [Nutrition](#)
- [Physical activity](#)
- [Final AHA description variables](#)

BMI:

- A BMI calculation was previously conducted using height and weight measurements from the Age 35 Survey. Two of these weights were considered extreme outliers, so they were adjusted using the average weight change between age 18 and age 35 by sex for student IDs 29171068 and 27089755. → *weightkg_le*
- 1051 participants total had a complete BMI score from Age 35; of these 1051, 10 were pregnant at the time (responded "1" to s35q87 → *pregnant*) so they were excluded from calculating the final BMI score.
- Heights:
  - For all participants who were missing age 35 OR age 18 heights, their weight at one age was used for the other (for example: if a participant said they were 5'2" at age 18 but didn't report an age 35 height, we used 5'2" for their age 35 height after seeing that there wasn't much height change between ages 18 and 35).
    - → *heightm_le* is age 35 heights using this method. 1 case was added with a complete BMI from this data (BMI35_le).
    - → *heightm18_le* is age 18 heights using this method. 29 cases were added (but only 6 with a now complete BMI)
- **BMI35_le** and **BMI18_le** were both calculated using heightm_le and heightm18_le and weightkg_le and weightkg18 (weight / height^2)
  - BMI35_le should have N = 1042; BMI18_le should have N = 1031.
- *weightchange* was calculated using (weightkg-weightkg18)/weightkg18 to get the percentage gained overall.
- *weightchange_leii* is essentially a sub-group mean-imputed variable for the weight change between 18 and 35 to capture more participants in this variable. This was only done for females, as no males had one weight but not the other that would enable us to compute BMI. The 50% percentile of weightkg18 was calculated for females (63.50). For any females below this value, the average weight change was .3377; for any above, it was .227. weightchange_leii inputted this percentage into calculating a new weight at age 35 (*weightkg_leii*). From there, a new BMI score was calculated using these new values, yielding a 1065 sample (**BMI35_leii).**
- **BMI_35_all**: Age 35 BMI that includes BMIs for incarcerated, even if did not complete age 35 survey (incarcerated record takes precedence over survey) – taken from incarcerated records
- **BMI_35comp:** Age 35 BMI that includes BMIs for all incarcerated ONLY if completed/participated in age 35 survey (incarcerated record takes precedence)
- *Weightchange_18imp* is essentially a sub-group mean-imputed variable for the weight change between 18 and 35 to capture more participants in this variable. The 50% percentile of weightkg_le was calculated for males and females. For any males or females below this value, the average weight change was computed (for females, .2031; for males, .1423); for any above, it was .3893 for females and .2756 for males. weightchange_18imp inputted this percentage into calculating a new weight at age 18 (*weight18kg_leii*). From there, a new BMI score was calculated using these new values, yielding a 1065 sample (**BMI18_leii).**
- *THE BMI CALCULATIONS WERE NOT CONDUCTED FOR ANY PARTICIPANT WHO WAS PREGNANT AT THE TIME OF THE SURVEY*
- *Bmi35_overweighti, bmi35_obesei, and bmi35_obese_severei* are cut-point variables to classify each of the 1065 participants into a "category." If their BMI is ≥ 25, they receive a "1" on bmi35_overweighti; if their

BMI is ≥ 30, they receive a 1 on bmi35_obesei; if their BMI is ≥ 35, they receive a "1" on bmi35_obese_severei. This was all calculated using the bmi35_leii variable. A participant could theoretically receive "1"s on all three variables if they are severely obese.

- AHA-related variables:
    - o *BMI_id*: participants received a "1" if their BMI was less than 25.
    - o *BMI_int*: participants received a "1" if their BMI was greater than or equal to 25 or less than 30.
    - o *BMI_poor*: participants received a "1" if their BMI was greater than or equal to 30.
    - o *AHA_BMI:* AHA-defined categories for BMI; participants received a "1" if it was poor, "2" for intermediate, and "3" for ideal. This follows the exact definition provided by the AHA.

Smoking:

- Because we did not have the exact questions as the AHA, smoking was calculated a little differently than the AHA definition.
- Based on s35q104 in the age 35 survey, people were classified as follows:
    - o *Smoking_poor:* Poor = "Yes, I have smoked more than 100 cigarettes"
        - ▪ Also poor if on s35q105A they respond that they currently use tobacco products (for any frequency greater than or equal to less than once a month)
    - o *Smoking_int:* Intermediate = "Yes, I have smoked less than 100 cigarettes in my life"
    - o *Smoking_id:* Ideal = "No, I have never smoked cigarettes"
- *AHA_smoking*: AHA-defined categories for smoking; participants received a "1" if it was poor, "2" for intermediate, and "3" for ideal.

Diabetes:

- *Treatdiabetes*: Participants received a "1" on this measure if they reported that they are NOT currently bothered by diabetes but ARE receiving treatment or services (s35q101c = 1, s35c101c1 = 2, and s35q101c2 = 1).
- *Currentdiabetes*: Participants received a "1" on this measure if they reported that they ARE currently bothered by diabetes, regardless of their treatment status (s35q101c = 1 and s35q101c1 = 1).
- *Pastdiabetesnotreat:* Participants received a "1" on this measure if they reported that they were once diagnosed with diabetes (s35q101c = 1), but they are not currently being treated for it OR bothered by it (both s35q101c1 and s35q101c2 = 2).
- *Neverdiabetes:* Participants received a "1" if they reported they've never been diagnosed with diabetes (s35q101c = 2).
- *AHA_diabetes*: Participants were placed into the following categories
    - o Poor: if they are currently bothered by diabetes (currentdiabetes = 1)
    - o Intermediate: if they are currently being treated by diabetes, but aren't bothered by it (treatdiabetes = 1)
    - o Ideal: if:
        - ▪ Currentdiabetes = 0 (aren't currently bothered by diabetes)
        - ▪ Or pastdiabetesnotreat = 1 (did have diabetes, but aren't currently bothered or treated for it)
        - ▪ Or neverdiabetes = 1
        - ▪ Participants receive an ideal score if they aren't currently bothered OR treated for diabetes
    - o *diab_poor:* poor on AHA_diabetes (34)
    - o *diab_int:* Intermediate on AHA_diabetes (8)
    - o *diab_id:* Ideal on AHA_diabetes (1053)

o One participant responded that they were once diagnosed with diabetes, but did not indicate whether or not they currently are bothered or treated for it, so they did not receive a score.

Cholesterol

- Cholesterol is different from a lot of other health variables in that it wasn't specifically asked about until the end of survey collection.
- *Treatcholest*: Participants received a "1" on this measure if they reported that they are NOT currently bothered by cholesterol but ARE receiving treatment or services (s35q101p = 1, s35q101p1 = 2, and s35q101p2 = 1). 3 participants also wrote in that they are bothered by cholesterol when asked if there were any other conditions they wanted to mention, which is denoted by writeinhighcholest_CON1 (writeinhighholest_CON1 = 1, s35q101l1 = 2, and s35q101l2 = 1).
- *Currentcholest*: Participants received a "1" on this measure if they reported that they ARE currently bothered by cholesterol, regardless of their treatment status (s35q101p = 1 and s35q101p1 = 1 OR writeinhighcholest_CON1 = 1 and s35q101l1 = 1).
- *Pastcholestsnotreat:* Participants received a "1" on this measure if they reported that they were once diagnosed with cholesterol (s35q101p = 1 or writeinhighcholest_CON1 = 1), but they are not currently being treated for it OR bothered by it (s35q101p1 and s35q101p2 = 2 or s35q101l1 = 2 and s35q101l2 = 2).
- *Nevercholest:* Participants received a "1" if they reported they've never been diagnosed with cholesterol (s35q101p= 2 and writeinhighcholest_CON1 = 0).
- *AHA_cholest*: Participants were placed into the following categories:
    o Poor (1): if they are currently bothered by diabetes (currentcholest = 1)
    o Intermediate (2): if they are currently being treated for cholesterol, but aren't bothered by it (treatcholest = 1)
    o Ideal (3) if:
        ▪ Or pastcholestnotreat = 1 (did have cholesterol, but aren't currently bothered or treated for it)
        ▪ Or nevercholest = 1
        ▪ Participants receive an ideal score if they aren't currently bothered OR treated for cholesterol
    o *cholest_poor:* poor on AHA_cholest (n = 7)
    o *cholest_int:* Intermediate on AHA_cholest (n = 3)
    o *cholest_id:* Ideal on AHA_cholest (n = 273)
- *AHA_cholest_i* is an imputed variation of AHA_cholest – it fills in cases as "ideal" if they didn't respond to any of the questions about cholesterol AND did not write in "cholesterol" when asked if they have any other problems.
    o *cholest_poor_i:* poor on AHA_cholest (n = 7)
    o *cholest_int_i:* Intermediate on AHA_cholest (n = 3)
    o *cholest_id_i:* Ideal on AHA_cholest (n = 1114)

Hypertension/Blood Pressure:

- Similar to diabetes, hypertension wasn't directly asked about on the survey until after data collection had already begun. Thus, some people wrote in that they suffered from hypertension/high blood pressure in the write-in section of the survey, so I went through and coded those as "1" into *writeinhighbp_CON1* and *writeinhighbp_CON2*.
- *Srhighbp* (self-report high blood pressure)*:* at the end of the survey, some participants were asked to report if they know their blood pressure, and if not if they know if it was high or low. 3 is poor, 2 is intermediate, and 1 is ideal following the AHA definitions outlined above. Additionally, some participants reported they

have normal blood pressure (777) so they received an ideal score; and some reported it was high (666) so they received a poor score.
- o SPSS syntax:
    - if (s35q131s lt 120) srhighbp = 3.
      if (s35q131d lt 80) srhighbp = 3.
      if (s35q131s = 777) srhighbp = 3.
      if (s35q131d = 777) srhighbp = 3.
      if (s35q131s ge 120) and (s35q131s lt 140) srhighbp = 2.
      if (s35q131d ge 80) and (s35q131d lt 90) srhighbp = 2.
      if (s35q131s ge 140) & (s35q131s lt 500) srhighbp = 1.
      if (s35q131d ge 90) & (s35q131d lt 500) srhighbp = 1.
      if (s35q131s = 666) srhighbp = 1.
      if (s35q131d = 666) srhighbp = 1.

- *Currenthighbp* (current high blood pressure): Participants received a "1" on this measure if they reported that they ARE currently bothered by high blood pressure or hypertension (s35q101b = 1 and s35q101b1 = 1, writeinhighbp_CON1 = 1 and s35q101l1 = 1, or writeinhighbp_CON2 = 1 and s35q101m1 = 1), regardless of their treatment status. This also includes srhighbp as part of the calculation, which takes precedence over whatever else they reported in the survey (if srhighbp = 1, currenthighbp = 1).
- *Treathighbp*: Participants received a "1" on this measure if they reported that they are NOT currently bothered by high blood pressure but ARE receiving treatment or services. This used s35q101b, s35q101b1, and writeinhighbp_CON1 and 2 to calculate.
- *pasthighbpnotreat:* Participants received a "1" on this measure if they reported that they were once diagnosed with hypertension or high blood pressure (s35q101b = 1), but they are not currently being treated for it OR bothered by it.
- *Neverhighbp:* Participants received a "1" if they reported they've never been diagnosed with high blood pressure.
- *Everhighbp* is the inverse of neverhighbp.
- *AHA_highbp*: Participants were placed into the following categories:
    - o Poor (1): if they are currently bothered by high blood pressure (currenthighbp = 1)
    - o Intermediate (2): if they are currently being treated for high blood pressure, but aren't bothered by it (treathighbp = 1 or srhighbp = 2). Because we have the blood pressure measures at the end of the survey, srhighbp was used via the AHA categories to take precedence over what they reported.
    - o Ideal (3) if:
        - Or pastnighbpnotreat = 1 (did have high blood pressure, but aren't currently bothered or treated for it)
        - Or neverhighbp = 1
        - Or srhighbp = 3
        - Participants receive an ideal score if they aren't currently bothered OR treated for cholesterol
    - o *BP_poor:* poor on AHA_cholest (n = 112)
    - o *BP_int:* Intermediate on AHA_cholest (n = 82)
    - o *BP_id:* Ideal on AHA_cholest (n = 901)

Nutrition

- This definition does *not* exactly follow the AHA definition of good nutrition, since the exact measures weren't asked on the survey.
- For all 5 nutrition items that were asked (q95a, b, c, d, and e), participants received "credit" for that nutrition item (i.e., 1) *only* if they always or never had the item in the house (always for healthy items like fruits, vegetables, and milk, never for unhealthy items like soft drinks and salty snacks).

- Q95a, q95b, and q95d were first recorded so the healthy option (in the case of the healthy items, "always"), is the highest score of 5. The two unhealthy items (q95c and q95e) were left as is (so 5 = never, which is the healthiest option).
- *Q95ar_a, q95br_a, q95c_a, q95dr_a,* and *q95e_a* all reflect the "all or nothing" use of this measure. Participants received a "1" if they had a "5" on these items (so they always had fruits, vegetables, and/or milk in the house and never had salty snacks and soft drinks).
- *Nutrition_always*: the sum of q95ar_a, q95br_a, q95c_a, q95dr_a, and q95e_a (range from 0 to 5).
- *AHA_nutrition_always* uses *nutrition_always* to create 3 categories for AHA nutrition. Participants received poor (1) if they had 0, 1, or 2 on nutrition_always; intermediate (2) if they had 3 on nutrition_always; and ideal (3) if they had 4 or 5 on nutrition_always.
  - *Nut_poor_a:* poor on AHA_nutrition_always (n = 779)
  - *Nut_int_a:* Intermediate on AHA_nutrition_always (n = 273)
  - *Nut_ind_a:* Ideal on AHA_nutrition_always (n = 41)

Physical activity

- This uses participant-reported moderate and vigorous activity in a week.
- First, the limit on number of hours they spent working out per day was capped at 15 (recode s35q93ch into s35q93ch_c) since one person put they worked out for 24 hours.
- 1 participant reported that they worked out for more than 0 hours per week, but they had "99" (missing) in the "hours" column. Those were changed to 0s in s35q93ch_c. The same was done for s35q93fh into s35q93fh_c.
- Modminutes and vigminutes were then created by multiplying the number of hours times 60 and adding the minutes for each value (for example, modminutes = s35q93ch_c*60 + s35q93cm.
- If participants knew they worked out for more than 0 minutes but weren't sure for how long (s35q93ch_c = 88 or 99 or system missing for s35q93ch_c or s35q93fh_c), the number of minutes was filled in as "10."
- Some participants had system missing values for the number of days they spent working out moderately or vigorously; they were filled in with 3 days (into s35q93b_c and s35q93e_c.)
- *Moderateactivity* was created by multiplying modminutes by s35q93b_c (so number of minutes spent on moderate activity per day times number of days per week). Moderateactivity equals the *total number of minutes* spent on moderate activity per week. If participants reported "2" to s35q93 or s35q93a, moderateactivity = 0.
- *vigactivity* was created by multiplying vigminutes by s35q93e_c (so number of minutes spent on vigorous activity per day times number of days per week). Vigactivity equals the *total number of minutes* spent on vigorous activity per week. If participants reported "2" to s35q93 or s35q93d, vigactivity = 0.
- To make the next calculation work, vigactivity and moderateactivity were filled in as "0" if they had a score for one, but not the other.
- *Totalactivityperweek* is the sum of moderateactivity and vigactivity.
- Following the exact AHA definition, *AHA_PA* groups participants into poor if they have done no activity throughout the week; intermediate if they have done 1-149 minutes of moderate or 1-74 minutes vigorous or 1-149 min mod + vig activity; and ideal if they report 150+minutes of moderate or 75+ min vigorous or 150+ min mod + vig activity.
  - *PA_poor* if participants received a "1" on AHA_PA
  - *PA_int* if participants received a "2" on AHA_PA
  - *PA_id* if participants received a "3" on AHA_PA
- Because the reported physical activity on the above measure was much, much higher than the national average, we also created a definition that *just* uses the vigorous physical activity definition. *AHA_PA_vig* indicates that participants received poor if they had 0 minutes of vigorous activity; intermediate if they had 1-74 minutes of vigorous activity; and ideal if they had 75+ minutes of vigorous activity.
  - *PA_poor_vig* if participants received a "1" on AHA_PA_vig (n = 593)

- *PA_int_vig* if participants received a "2" on AHA_PA_vig (n = 89)
- *PA_id_vig* if participants received a "3" on AHA_PA_vig (n = 408)

General AHA definitions

- *AHA_ideal* is the sum of all ideal counts from each of the 7 indicators (using imputed cholesterol and the real AHA definition of physical activity): nut_id_a + BMI_id + BP_id + PA_id + smoking_id + cholest_id_i + diab_id
- *AHA_poor* and *AHA_int* are the same as above, but with poor and intermediate counts.
- *AHA_ideal_vig* is the sum of all ideal counts from each of the 7 indicators (using imputed cholesterol and the VIGOROUS AHA definition of physical activity): nut_id_a + BMI_id + BP_id + PA_id_vig + smoking_id + cholest_id_i + diab_id
- *AHA_sum_all* is the sum of all AHA indicators using the sum() function in SPSS – this means that <u>anyone</u> with a score at <u>any data point</u> gets a score. I don't recommend using this, as we imputed most of the cholesterol data – so even if people got a default of 0 for that and only that variable, they would be included in this analysis. This variable has a range of 0 – 14 (the AHA variables were recoded from 1-2-3 to 0-1-2 and summed).
- *AHA_sum_restrict* is the sum of all AHA indicators using simply x + y + z in SPSS – this means that <u>those with a score will have a value for every AHA variable</u>. This variable has a range of 0 – 14 (the AHA variables were recoded from 1-2-3 to 0-1-2 and summed).