

Supplementary Digital Content: Table 2 A. Partition and isotemporal substitution models for cardiovascular mortality in less active participants, overall and by sex - the NIH-AARP Diet & Health Study

		CVD											
Less Overall Physical Activity (< 2 hrs/d)		Sedentary		Exercise		Non-exercise		Total time					
Variable Group 1		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI				
ALL Participants													
Partition		1.023	1.010, 1.037	0.483	0.411, 0.568	0.650	0.587, 0.721	-					
Replacement/substitution		-		0.472	0.402, 0.555	0.635	0.573, 0.705	1.023		1.010, 1.037			
MEN													
Partition		1.026	1.009, 1.043	0.494	0.409, 0.595	0.724	0.635, 0.825	-					
Replacement/substitution		-		0.481	0.399, 0.580	0.706	0.619, 0.805	1.026		1.009, 1.043			
WOMEN													
Partition		1.02	0.999, 1.042	0.465	0.335, 0.644	0.55	0.466, 0.649	-					
Replacement/substitution		-		0.455	0.329, 0.631	0.539	0.456, 0.637	1.02		0.999, 1.042			
Variable Group 2		Sedentary		Exercise		Household		Lawn/garden		Other walking		Total time	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
ALL Participants													
Partition		1.021	1.008, 1.035	0.48	0.409, 0.565	0.769	0.671, 0.881	0.395	0.305, 0.512	0.654	0.489, 0.875	-	
Replacement/substitution		-		0.471	0.400, 0.553	0.753	0.657, 0.863	0.387	0.299, 0.501	0.641	0.479, 0.857	1.021	1.008, 1.035
MEN													
Partition		1.023	1.009, 1.027	0.49	0.407, 0.591	0.887	0.734, 1.070	0.449	0.339, 0.595	0.849	0.601, 1.201	-	
Replacement/substitution		-		0.479	0.397, 0.578	0.867	0.717, 1.048	0.439	0.332, 0.581	0.83	0.586, 1.175	1.023	1.006, 1.040
WOMEN													
Partition		1.018	0.997, 1.039	0.478	0.345, 0.662	0.674	0.555, 0.819	0.179	0.090, 0.355	0.387	0.230, 0.652	-	
Replacement/substitution		-		0.469	0.339, 0.650	0.662	0.545, 0.806	0.176	0.088, 0.349	0.38	0.226, 0.641	1.018	0.997, 1.039
Variable Group 3		Sedentary		Light		Moderate-vigorous		Total time					
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI				
ALL Participants													
Partition		1.021	1.008, 1.035	0.774	0.673, 0.891	0.501	0.444, 0.565	-					
Replacement/substitution		-		0.758	0.658, 0.873	0.491	0.435, 0.553	1.021		1.008, 1.035			
MEN													
Partition		1.022	1.006, 1.040	0.955	0.788, 1.156	0.528	0.460, 0.608	-					
Replacement/substitution		-		0.934	0.769, 1.133	0.517	0.450, 0.594	1.022		1.006, 1.040			
WOMEN													
Partition		1.019	0.998, 1.040	0.626	0.511, 0.766	0.432	0.340, 0.548	-					
Replacement/substitution		-		0.614	0.501, 0.754	0.424	0.334, 0.538	1.019		0.998, 1.040			

Partition Models adjusted for each type of activity indicated (hrs/d), as well as Age (years), Education (< 12 yrs, high school graduate, some college, college graduate, unknown), Smoking history (never, stopped 10+ , stopped 5-9, stopped 1-4 years, stopped < 1 year, current smoker, unknown), Sleep duration (< 4, 4-5.9, 6-7.9, 8-9.9, 10+ hours/day, unknown), Overall health (excellent, very good, good, fair, poor, unknown), Body Mass Index (< 25, 25-29.9, 30+ kg/m2, unknown), and Sex among All Participants
Replacement/substitution models include each type of activity, total time (sum of active and sedentary) and the covariates listed above.

Supplementary Table 2 B. Partition and isotemporal substitution models for cardiovascular mortality in more active participants, overall and by sex - the NIH-AARP Diet & Health Study

Less Overall Physical Activity (< 2 hrs/d)

CVD

Variable Group 1

	Sedentary		Exercise		Non-exercise		Total time	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
ALL Participants								
Partition	1.026	1.011, 1.041	0.858	0.800, 0.920	1.027	0.989, 1.067	-	
Replacement/substitution	-		0.836	0.778, 0.898	1.001	0.961, 1.043	1.026	1.011, 1.041
MEN								
Partition	1.014	0.994,1.034	0.847	0.777, 0.924	1.032	0.983, 1.083	-	
Replacement/substitution	-		0.836	0.765, 0.913	1.018	0.966, 1.073	1.014	0.994, 1.034
WOMEN								
Partition	1.044	1.021, 1.067	0.877	0.777, 0.990	1.016	0.955, 1.081	-	
Replacement/substitution	-		0.840	0.743, 0.950	0.974	0.911, 1.040	1.044	1.021, 1.067

Variable Group 2

	Sedentary		Exercise		Household		Lawn/garden		Other walking		Total time	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
ALL Participants												
Partition	1.025	1.010, 1.040	0.861	0.802, 0.923	1.085	1.026, 1.148	0.944	0.869, 1.025	0.99	0.881, 1.114	-	
Replacement/substitution	-		0.840	0.781, 0.902	1.059	0.999, 1.123	0.921	0.847, 1.001	0.966	0.858, 1.089	1.025	1.010, 1.040
MEN												
Partition	1.012	0.992, 1.032	0.851	0.781, 0.928	1.141	1.062, 1.225	0.9	0.815, 0.994	0.975	0.834, 1.139	-	
Replacement/substitution	-		0.841	0.770, 0.919	1.127	1.046, 1.215	0.89	0.805, 0.983	0.963	0.823, 1.128	1.012	0.992, 1.032
WOMEN												
Partition	1.044	1.021, 1.067	0.876	0.775, 0.989	1.005	0.919, 1.100	1.037	0.890, 1.208	1.027	0.857, 1.231	-	
Replacement/substitution	-		0.839	0.741, 0.949	0.963	0.877, 1.057	0.993	0.852, 1.158	0.983	0.818, 1.182	1.044	1.021, 1.067

Variable Group 3

	Sedentary		Light		Moderate-vigorous		Total time	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
ALL Participants								
Partition	1.024	1.010, 1.040	1.112	1.035, 1.195	0.951	0.910, 0.993	-	
Replacement/substitution	-		1.086	1.008, 1.170	0.928	0.887, 0.972	1.024	1.010, 1.040
MEN								
Partition	1.01	0.990, 1.030	1.222	1.116, 1.337	0.923	0.873, 0.977	-	
Replacement/substitution	-		1.210	1.101, 1.329	0.914	0.862, 0.970	1.01	0.990, 1.030
WOMEN								
Partition	1.045	1.022, 1.068	0.957	0.852, 1.076	0.998	0.931, 1.069	-	
Replacement/substitution	-		0.917	0.813, 1.034	0.955	0.888, 1.027	1.045	1.022, 1.068

Partition Models adjusted for each type of activity indicated (hrs/d), as well as Age (years), Education (< 12 yrs, high school graduate, some college, college graduate, unknown), Smoking history (never, stopped 10+ , stopped 5-9, stopped 1-4 years, stopped < 1 year, current smoker, unknown), Sleep duration (< 4, 4-5.9, 6-7.9, 8-9.9, 10+ hours/day, unknown), Overall health (excellent, very good, good, fair, poor, unknown), Body Mass Index (< 25, 25-29.9, 30+ kg/m2, unknown), and Sex among All Participants
Replacement/substitution models include each type of activity, total time (sum of active and sedentary) and the covariates listed above.