

Supplemental Table 1. Prevalent self-reported physical activity in ECHO SOL

Activity	Prevalence
Vigorous sports /activities	(n=131)
American football	4(2%)
Basketball	22(15%)
Boxing	11(6%)
Lacrosse	1(0.4%)
Soccer	25(17%)
High-intensity aerobics	22(13%)
Hard lap swimming	17(12%)
Running	65(50%)
Weight lifting	38(27%)
Cycling	27 (16%)
Moderate Sports/Activities	(n=356)
Aerobic dance	38 (6%)
Baseball	22(5%)
Brisk walking	259 (75%)
Canoeing/Kayaking	5(2%)
Coaching sports	15(3%)
Light cycling	73(21%)
Weight lifting	53(14%)
Swimming laps	46(12%)
Table tennis	8(2%)
Rock climbing	1(0.2%)
Skating	4(2%)
Hunting/Fishing	20(5%)
Karate/Judo/Other Martial arts	7(1%)
Frisbee play	6(1%)
Stationary exercise	82(19%)

All proportions are weighted to account for the survey design

Supplemental Table 2. Echocardiographic measures with quartiles of light PA

Light PA	Q1: <159 Min/day	Q2: 159-208 Min/day	Q3: 208-273 Min/day	Q4: >273 Min/day	p value Q4 vs. Q1	p value Q4 vs. Q2
LVMI, g/m ^{2.7}	42.5±0.9	41.7±0.80	41.7±0.68	40.7±0.58	0.081	0.300
LVMI ^{2.7} / EDV	0.58±0.02	0.53±0.01	0.51±0.01	0.49±0.01	< 0.001	0.050
RWT, ratio	0.40±0.00	0.40±0.00	0.39±0.00	0.40±0.00	0.456	0.530
LAVI, ml/m ²	22.6±0.21	23.3±0.24	23.9±0.19	23.0±0.15	0.090	0.200
EF, %	60.0±0.34	59.7±0.34	59.9±0.39	59.8 ±0.33	0.673	0.700
E/e', ratio	10.6±0.2	9.6±0.2	9.6±0.2	9.5±0.2	<0.001	0.760
GLS, %	-17.3±0.24	-17.5±0.19	-17.3±0.19	-18.1±0.27	0.012	0.064
GCS, %	-24.0±0.53	-24.4±0.41	-23.7±0.51	-25.0±12.3	0.135	0.280
RV peak S, cm/sec	11.6±0.15	11.8±0.18	12.0±0.16	12.3± 0.19	0.010	0.050
TAPSE, cm	17.2±0.21	17.1±0.27	17.2±0.20	17.7±0.41	0.223	0.262
RV FAC, %	0.44±0.00	0.45±0.00	0.45±0.00	0.45±0.00	0.287	0.870
TRV Max, cm/sec	211.3±3.2	204.0±3.3	203.1±2.6	207.7±3.2	0.427	0.422

*Data presented in means +/- standard errors of mean

PA =physical activity, Q=quartile, LVMI =left ventricular mass index, EDV=end diastolic volume, RWT=relative valve thickness, LAVI=left atrial volume index, EF=ejection fraction, E =peak early diastolic transmitral inflow velocities, e' =average of mitral early diastolic septal and lateral annular velocities, GLS =global longitudinal strain, GCS = global circumferential strain, RV=right ventricular, RVFAC= RV fractional area change, TAPSE = tricuspid annular plane systolic excursion; TRV= tricuspid regurgitation velocity.

p value is calculated based on quartile 4 to other quartiles
p ≤ 0.01 considered significant

Supplemental table 3. Echocardiographic measures with quartiles of MVPA

MVPA	Q1: <5 Min/day	Q2: 5-13 Min/day	Q3: 13-27 Min/day	Q4: >27 Min/day	p value Q4 vs. Q1	p value Q4 vs. Q2
LVMI, g/m ^{2.7}	43.8±0.80	41.7±0.88	41.0±0.68	41.2±0.62	0.127	0.688
LVMI ^{2.7} / EDV	0.58±0.02	0.54±0.01	0.51±0.01	0.48±0.01	< 0.001	0.001
RWT, ratio	0.41±0.00	0.40±0.00	0.40±0.00	0.39±0.00	0.031	0.150
LAVI, ml/m ²	22.7±0.2	22.8±0.2	23±0.2	24.2±0.2	< 0.001	< 0.001
EF, %	60.1±0.36	59.6±0.51	60.3±0.34	59.5±0.40	0.248	0.888
E/e', ratio	10.6±0.2	10.1±0.2	9.4±0.2	9.4±0.2	< 0.001	0.005
GLS, %	-17.6±0.24	-17.3±0.21	-17.8±0.21	-17.6±0.28	0.868	0.300
GCS, %	-23.4±0.6	23.7± 0.4	-24.9± 0.4	25.2 ±0.6	0.010	0.024
RV peak S, cm/sec	11.6±0.18	11.6±0.15	12.1± 0.15	12.2± 0.17	0.010	0.003
TAPSE, cm	17.5±0.24	17.2±0.24	17.1±0.22	17.5±0.42	0.983	0.642
RV FAC, %	0.44±0.01	0.44±0.00	0.45±0.00	0.46±0.00	0.033	0.031
TRV Max, cm/sec	209.1±3.6	208.6±3.4	206.±0 2.6	208.6±3.5	0.920	0.211

*Data presented in means +/- standard errors of mean

MVPA = moderate to vigorous-intensity physical activity; Q=quartile, LVMI =left ventricular mass index, EDV=end diastolic volume, RWT=relative valve thickness, LAVI=left atrial volume index, EF=ejection fraction, E =peak early diastolic transmitral inflow velocities, e' =average of mitral early diastolic septal and lateral annular velocities, GLS =global longitudinal strain, GCS = global circumferential strain, RV=right ventricular, RVFAC= RV fractional area change, TAPSE = tricuspid annular plane systolic excursion; TRV= tricuspid regurgitation velocity.

p value is calculated based on quartile 4 to other quartiles
p ≤ 0.01 considered significant

Supplemental Table 4. Echocardiographic measures with quartiles of sedentary behavior

Sedentary behavior	Q1: < 604 min/day	Q2: 604-748 min/day	Q3: 748-884 min day	Q4: > 884 min/day	p value Q4 vs. Q1	p value Q4 vs. Q2
LVMI, g/m ^{2.7}	41±0.6	40.4±0.6	41.8±0.7	44.0±0.9	0.008	0.002
LVMI ^{2.7} / EDV	0.52±0.01	0.51±0.01	0.53±0.01	0.56±0.01	0.029	0.020
RWT, ratio	0.40±0.00	0.40±0.00	0.40±0.00	0.40±0.00	0.314	0.530
LAVI, ml/m ²	23.5±0.6	23.1±0.19	22.9±0.23	23.2±0.3	0.381	0.851
EF, %	59.8±0.49	59.7±0.36	60.1±0.34	60.0±0.32	0.804	0.552
E/e', ratio	9.6±0.23	10.0±0.18	9.9±0.19	10.0±0.16	0.117	0.837
GLS, %	-17.5±0.25	-17.6±0.26	-17.6±0.21	-17.3±0.18	0.620	0.476
GCS, %	-23.4±0.51	-24.1±0.62	-24.8± 0.40	-25.1±0.51	0.010	0.190
RV peak S, cm/sec	11.5±0.17	11.8±0.19	12.3±0.16	12.0±0.19	0.080	0.364
TAPSE, cm	17.5±0.19	17.6±0.37	17.4±0.23	16.6±0.26	0.022	0.042
RV FAC, %	0.44±0.00	0.45±0.00	0.46±0.00	0.45±0.00	0.357	0.780
TRV Max, cm/sec	205.4±2.4	211.2±3.3	203.5±3.2	205.5±3.6	0.984	0.255

*Data presented in means +/- standard errors of mean

Q=quartile, LVMI =left ventricular mass index, EDV=end diastolic volume, RWT=relative valve thickness, LAVI=left atrial volume index, EF=ejection fraction, E =peak early diastolic transmitral inflow velocities, e' =average of mitral early diastolic septal and lateral annular velocities, GLS =global longitudinal strain, GCS = global circumferential strain, RV=right ventricular, RVFAC= RV fractional area change, TAPSE = tricuspid annular plane systolic excursion; TRV= tricuspid regurgitation velocity.

p value is calculated based on quartile 4 to other quartiles
p ≤ 0.01 considered significant

Supplemental Table 5. Unadjusted Associations Between Physical Activity and Echocardiographic Measures

	Sedentary time/day		MVPA/day		Light PA/day	
	Estimate	p-value	Estimate	p-value	Estimate	p-value
LVMI, g/m ^{2.7}	0.0721	0.003	-0.0002	0.999	-0.0892	0.012
RWT	0.0001	0.367	-0.0013	0.291	-0.0004	0.172
LVMI ^{2.7} /EDV	0.0011	0.004	-0.0007	0.005	-0.0033	<0.001
LAVI	-0.0042	0.481	0.1568	<0.001	0.0081	0.334
EF %	0.0003	0.973	-0.0200	0.810	-0.0057	0.748
E/e'	0.0065	0.268	-0.0696	0.244	-0.0396	<0.001
GLS, %	0.0006	0.345	-0.0279	0.494	-0.0280	0.023
GCS, %	-0.0350	0.011	-0.2244	0.015	-0.0348	0.242
SV, ml	0.0086	0.842	0.6841	0.093	-0.0165	0.812
Lat peak S	-0.0028	0.596	0.0271	0.257	0.0092	0.248
RV peak S	0.0072	0.136	0.0893	0.005	0.0211	0.016
RV FAC	0.0001	0.600	0.0017	0.125	0.0004	0.185
TRV, cm/sec	0.0004	0.959	0.3446	0.507	-0.1817	0.311
RV VTI	-0.0196	0.005	0.0088	0.861	0.0256	0.158
TAPSE, cm	-0.0012	0.137	0.0121	0.026	0.0045	<0.001

***p-value <0.01 considered significant**
Values are per 10 min/day of PA

LVMI =left ventricular mass index, RWT=relative valve thickness, EDV=end diastolic volume, LAVI=left atrial volume index, EF=ejection fraction, E =peak early diastolic transmitral inflow velocities, e' =average of mitral early diastolic septal and lateral annular velocities, LS =global longitudinal strain, GLS =global longitudinal strain, GLS = global circumferential strain, SV =stroke volume, RV=right ventricular, RVFAC= RV fractional area change, TR= tricuspid regurgitation, TAPSE = tricuspid annular plane systolic excursion, MVPA = moderate to vigorous-intensity PA, PA= physical activity

Supplemental Table 6: Multivariable Linear Regression for the Association between MVPA, Light PA, SB and Echocardiographic Measures in Healthy-Subgroup

Outcome	MVPA	Light PA	SB
LVMI, g/m ²	-0.053	0.053	-0.037*
LVMI ^{2.7} / EDV	-0.0015	0.0008	-0.0005
LAVI, ml/m ²	0.0371^	0.0065 ^	-0.0079^
EF %	0.0001	-0.0004	0.0003
E/e' ratio	0.0184^	0.0008*	-0.0022^
GLS, %	-0.0079^	-0.0023^	0.0024^
SV, ml	0.1743^	0.0038	-0.0188^
RV peak S, cm/sec	0.0056^	-0.0026	0.0015
RV FAC,%	0.0000	0.0000	0.0000
TRV Max, cm/sec	0.1234	0.0165	-0.0248*
TAPSE, cm	0.0018^	0.0006^	-0.0006^

Regression model adjusted for demographics (age and sex), systolic blood pressure, antihypertensive med use, other cardiovascular disease modifiable factors (diabetes mellitus, glycosylated hemoglobin, current smoking, and high-density lipoprotein).

*p-value < 0.01

^p value < 0.001

Values are per 10 min/day light MVPA/light PA/SB

MVPA = moderate to vigorous physical activity (PA); SB =sedentary behavior; LVMI =left ventricular mass index, EDV=end diastolic volume, LAVI=left atrial volume index, EF=ejection fraction, E =peak early diastolic transmitral inflow velocities, e' =average of mitral early diastolic septal and lateral annular velocities, GLS =global longitudinal strain, SV =stroke volume, RV=right ventricular, RVFAC= RV fractional area change, TRV= tricuspid regurgitation velocity, TAPSE = tricuspid annular plane systolic excursion