



2022년 대한임상건강증진학회
추계학술대회

텔레워크 확산에 따른 건강과 신체활동 변화

황문현 (인천대학교)



대한임상건강증진학회
Korean Society for Health Promotion and Disease Prevention





대한임상건강증진학회
Korean Society for Health Promotion and Disease Prevention

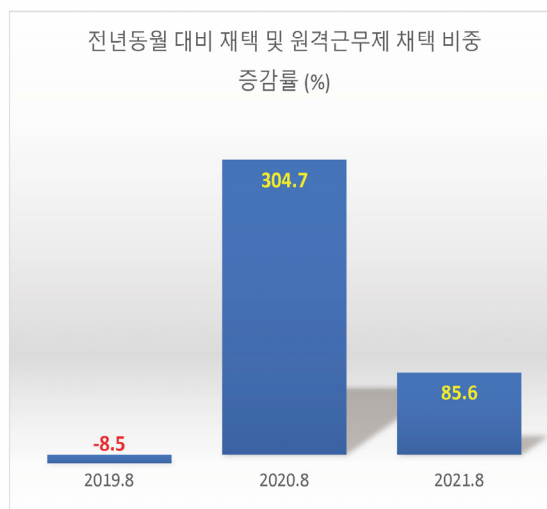
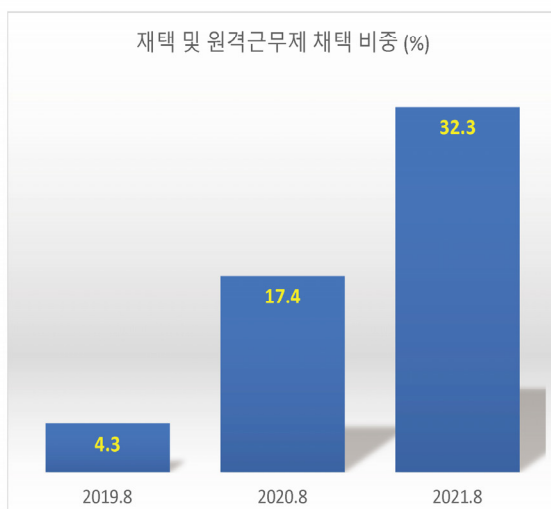
What is teleworking? – WHO definition

Telework (remote work or e-work) is defined as the use of information and communications technology (ICT) – such as desktop computers, laptops, tablets and smartphones – for work that is performed outside the employer's premises.

- Home
- A satellite office
- Another location



Work Environment Transition to Telework during COVID-19 Pandemic: 국내

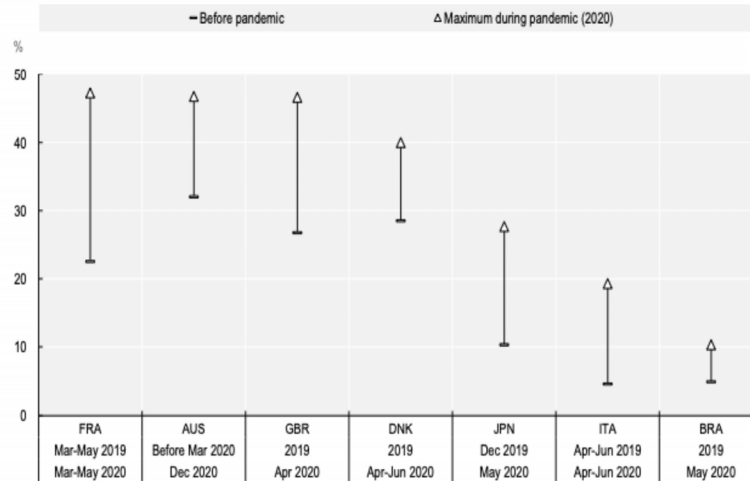


통계청, 2021

Work Environment Transition to Telework during COVID-19 Pandemic: OECD, 2021

Figure 2. Increase in teleworking during the COVID-19 pandemic as reported by individuals

Percentage of employed persons or employees



Source: OECD based on Australian Bureau of Statistics (2020[13]), Household Impacts of COVID-19 Survey, December 2020,

Work Environment Transition to Telework during COVID-19 Pandemic: US, 2022

Of job holders in the United States, 58 percent—the equivalent of 92 million people—say they can work remotely at least part of the time.

Availability of remote-work options, % of employed respondents (n = 13,896)¹

현재 미국의 근로자 중 58%가 remote-work이 가능한 상태

Offered remote work on a full-time basis
35

Offered remote work part-time or on occasion
23

Not offered remote-work opportunities¹
42



2019년과 비교하여 COVID-19 Pandemic 동안 remote-work이 최대 10배까지 증가

Number of workers, extrapolated²
55 million
36 million
66 million

Note: Figures may not sum, because of rounding.
¹Includes respondents who answered "I don't know" (1%).
²Of 158,105,000 employed people: US Bureau of Labor Statistics, Apr 2022.
Source: McKinsey American Opportunity Survey Spring 2022

McKinsey & Company, 2022

Work Environment Transition to Telework during COVID-19 Pandemic: WHO & ILO, 2021

- ☐ Europe
 - ☐ The proportion of teleworkers was increased from 11% before the pandemic to 48% during it.
- ☐ Latin America and the Caribbean
 - ☐ More than 23 million people transitioned to telework in the second quarter of 2020 (during the pandemic)
- ☐ Globally, most of the transition to telework occurred among workers with higher income and education levels.

Telework and Health: WHO & ILO, 2021

- ☐ Upside (Health Benefit)
 - ☐ Improved work-life balance
 - ☐ More physical activity (if proper plans and policies are prepared)
- ☐ Downside (Health Problems)
 - ☐ Feeling of isolation, burnout, depression
 - ☐ Eye strain, increased alcohol consumption
 - ☐ Unhealthy weight gain

Association of Telework with Physical Activity and Sedentary Behavior under COVID-19 Pandemic

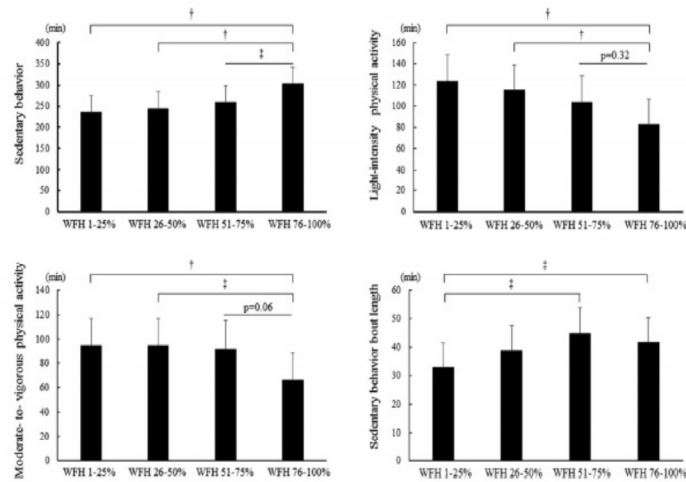
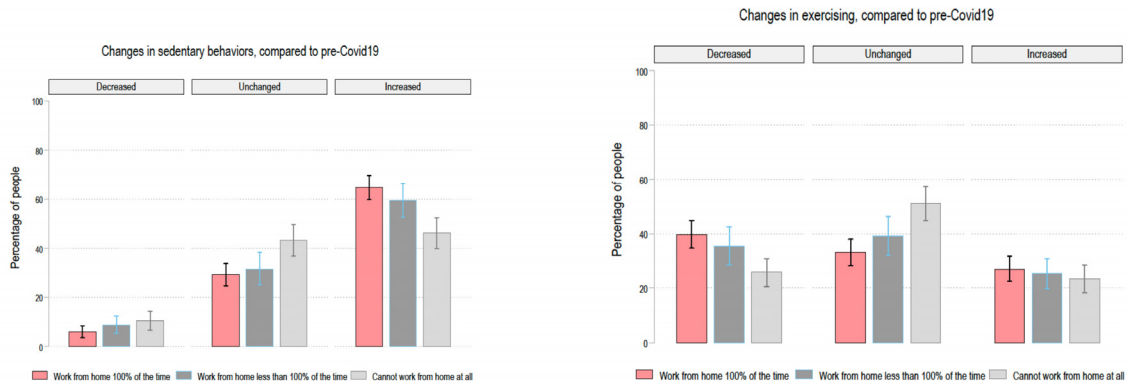


FIGURE 1 Comparisons of SB, intensity-specific PA, and SB bout length during work among the different degree of WFH groups. SB, sedentary behavior; PA, physical activity; WFH, work from home. Values are presented as estimated means and standard error by analysis of covariance (ANCOVA), adjusted for age, gender, smoking, drinking frequency, body mass index (BMI), residential area, educational attainment, self-rated health, job characteristics, industrial classification, and working time. Post hoc comparisons were examined using the Bonferroni method. † $<.001$, ‡ $<.05$

Fukushima et al., JOH, 2021

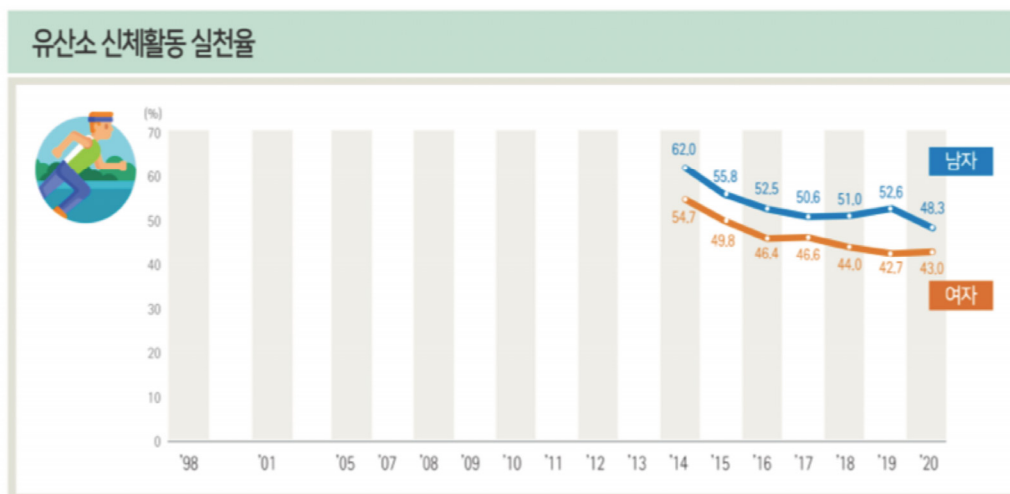
Association of Telework with Physical Activity and Sedentary Behavior under COVID-19 Pandemic

Figure 2: Work-from-home correlates with increases in sedentary behaviors compared to pre-COVID19 time period
Figure 3: Work-from-home correlates with decreases in exercise, compared to pre-COVID19 time period



Streeter et al., Stanford Center of Longevity, 2021

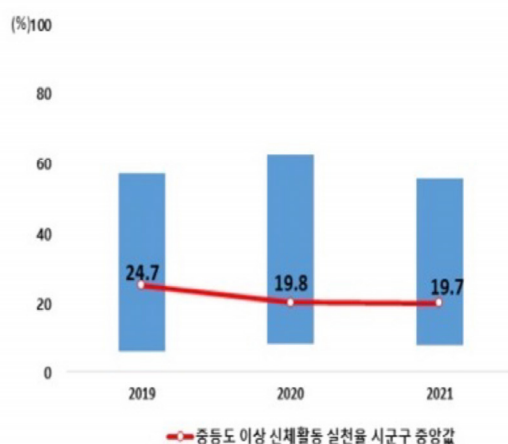
Changes in Health-related Index during COVID-19 Pandemic: Physical Activity - 국내



○ 20대 남성에서 가장 큰 폭의 감소가 나타남

국민건강영양조사, 2021

Changes in Health-related Index during COVID-19 Pandemic: Physical Activity - 국내

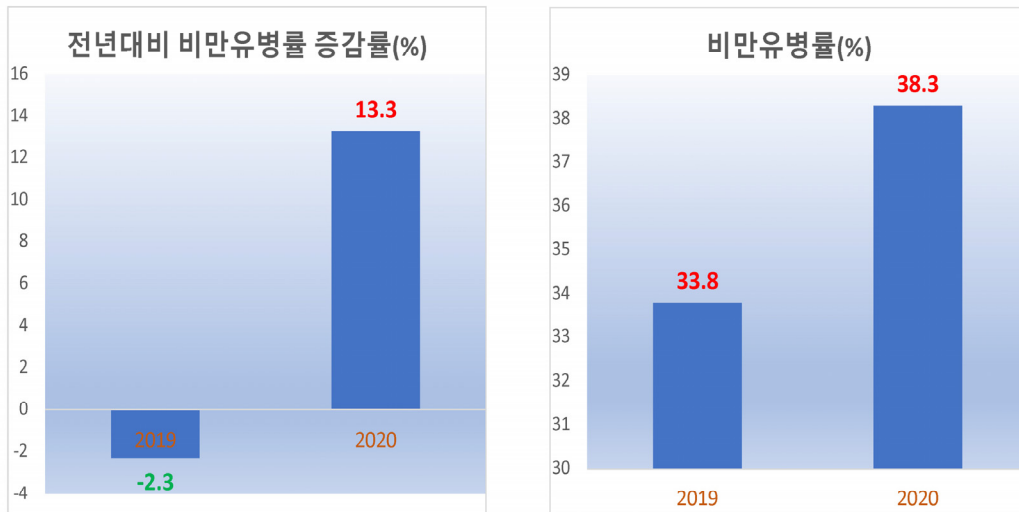


<중등도 이상 신체활동 실천율¹⁾, '19-'21>

1) 최근 1주일 동안 격렬한 신체활동을 1일 20분 이상 주 3일 이상 또는 중등도 신체활동을 1일 30분 이상 주 5일 이상 실천한 사람의 비율

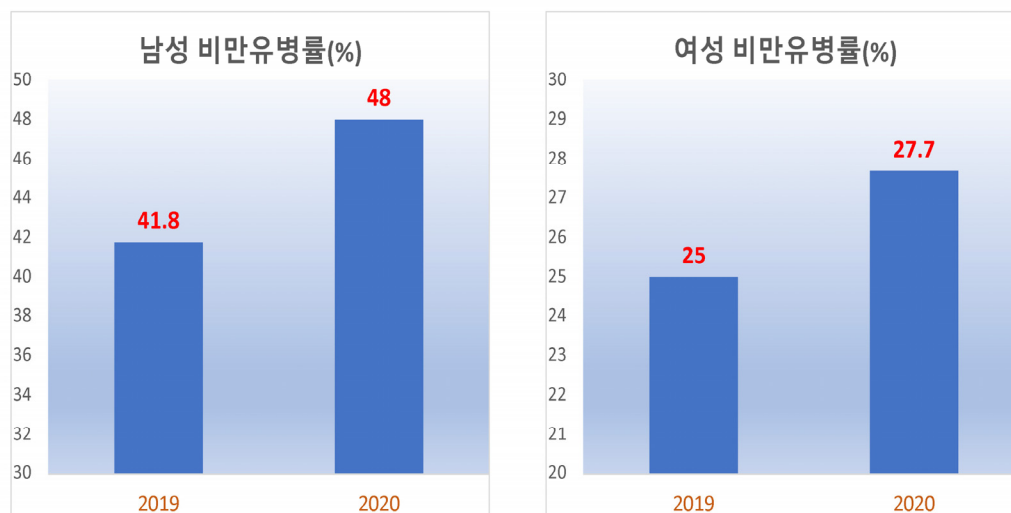
KCDC, 2022

Changes in Health-related Index during COVID-19 Pandemic: Obesity - 국내



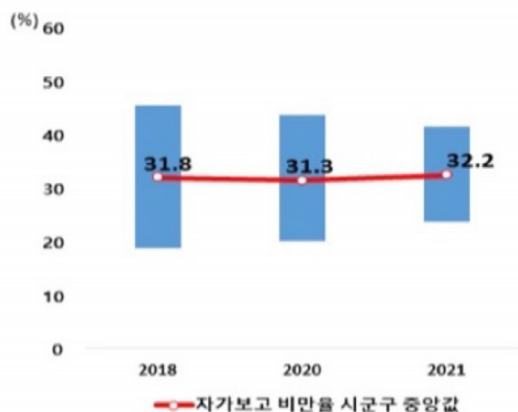
국민건강영양조사, 2020

Changes in Health-related Index during COVID-19 Pandemic: Obesity - 국내



국민건강영양조사, 2020

Changes in Health-related Index during COVID-19 Pandemic: Obesity - 국내

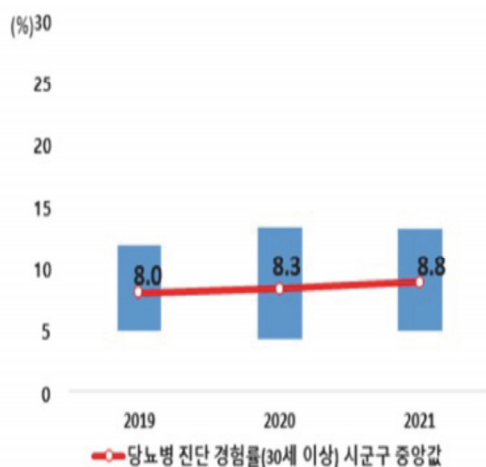


<자가보고 비만을¹⁾, '18*, '20, '21>

1) 체질량지수(kg/m²)가 25 이상인 사람의 분율.

KCDC, 2022

Changes in Health-related Index during COVID-19 Pandemic: Diabetes - 국내



<당뇨병 진단 경험률¹⁾, '19-'21>

1) 의사에게 당뇨병을 진단받은 30세 이상 사람의 분율

KCDC, 2022

Changes in Health-related Index during COVID-19 Pandemic: Hypertension - 국내

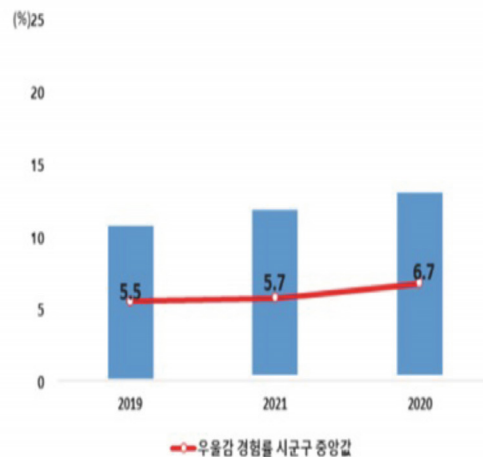


〈고혈압 진단 경험률²⁾, '19-'21〉

2) 의사에게 고혈압을 진단받은 30세 이상 사람의 비율

KCDC, 2022

Changes in Health-related Index during COVID-19 Pandemic: Depression - 국내



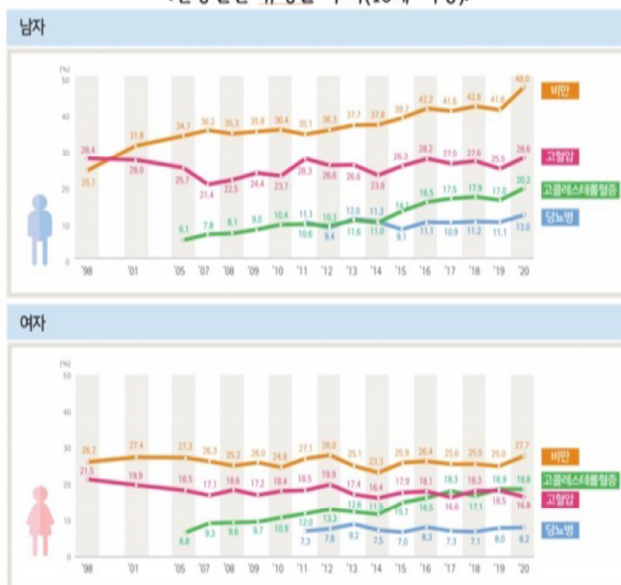
〈우울감 경험률¹⁾, '19-'21〉

1) 최근 1년 동안 연속적으로 2주 이상 일상생활에 지장이 있을 정도의 우울감(슬픔이나 절망감 등)을 경험한 사람의 비율

KCDC, 2022

Changes in Health-related Index during COVID-19 Pandemic: Chronic Disease Incident Rate - 국내

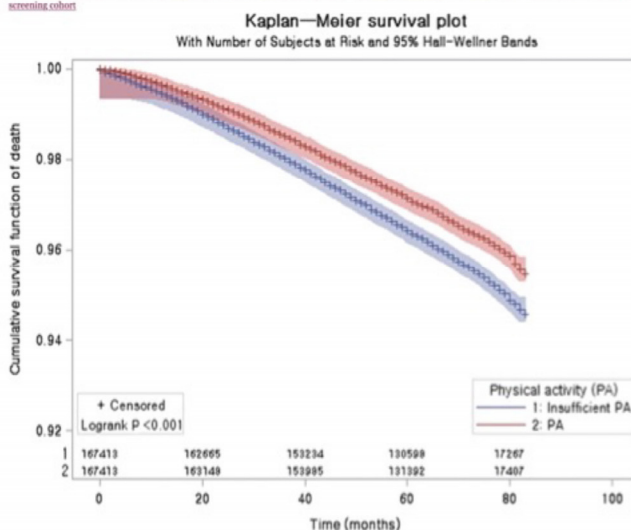
<만성질환 유병률 추이(19세 이상)>



국민건강영양조사, 2021

Physical Inactivity and Mortality: 국내 장기 추적 연구

From: Mortality and cause of death in physical activity and insufficient physical activity participants: a longitudinal follow-up study using a national health screening cohort



Kaplan-Meier survival analysis and the log-rank test. The cumulative survival rate was lower in the insufficient physical activity (PA) group than in the PA group

Min et al., BMC Public Health, 2020

Physical Inactivity and Chronic Disease Mortality: 적정 신체활동과 비활동간 비교 - 국내

From: [Mortality and cause of death in physical activity and insufficient physical activity participants: a longitudinal follow-up study using a national health screening cohort](#)

Cause of death	Total participants		Odds ratio (95% CI)	P-value
	PA (n=167,413)	Insufficient PA (n=167,413)		
All-cause death (n,%)	5483 (100.0)	6781 (100.0)	0.80 (0.77-0.83)	<0.001*
Infection (n,%)	110 (2.0)	142 (2.1)	0.78 (0.60-0.99)	0.057
Neoplasm (n,%)	2425 (44.2)	2781 (41.0)	0.87 (0.82-0.92)	<0.001*
Metabolic disease (n,%)	165 (3.0)	202 (3.0)	0.82 (0.67-1.00)	0.063
Mental disease (n,%)	33 (0.6)	71 (1.1)	0.47 (0.31-0.70)	0.001*
Neurologic disease (n,%)	110 (2.0)	155 (2.3)	0.71 (0.56-0.91)	0.010*
Circulatory disease (n,%)	1011 (18.4)	1311 (19.3)	0.77 (0.71-0.84)	<0.001*
Respiratory disease (n,%)	372 (6.8)	567 (8.4)	0.66 (0.58-0.75)	<0.001*
Digestive disease (n,%)	171 (3.1)	215 (3.2)	0.80 (0.65-0.97)	0.036*
Muscular disease (n,%)	30 (0.6)	35 (0.5)	0.86 (0.53-1.40)	0.535
Genitourinary disease (n,%)	79 (1.4)	87 (1.3)	0.91 (0.67-1.23)	0.535
Abnormal finding (n,%)	283 (5.2)	365 (5.4)	0.78 (0.66-0.91)	0.002*
Trauma (n,%)	669 (12.2)	801 (11.8)	0.84 (0.75-0.93)	0.002*
Others (n,%)	25 (0.5)	49 (0.7)	0.51 (0.32-0.83)	0.009*

Abbreviation: PA physical activity

* Chi-square test. Significance at false discovery rate-adjusted $P < 0.05$

Min et al., BMC Public Health, 2020

Physical Inactivity and Mortality - 미국

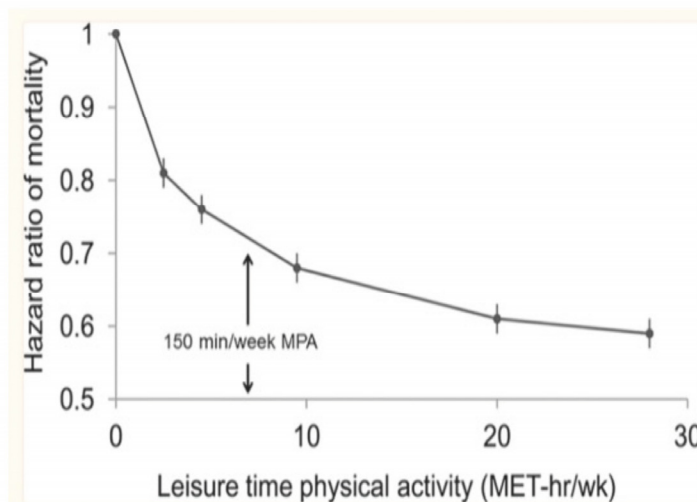


Figure 2.

Relationships of Moderate-to-Vigorous Physical Activity to All-Cause Mortality, with Highlighted Characteristics Common to Studies of This Type.

- 저강도: 3 METs 미만
- 중강도: 3-6 METs
- 고강도: 6 METs 이상

Kraus et al., Med Sci Sports Exerc., 2019

Physical Inactivity and Mortality - 미국

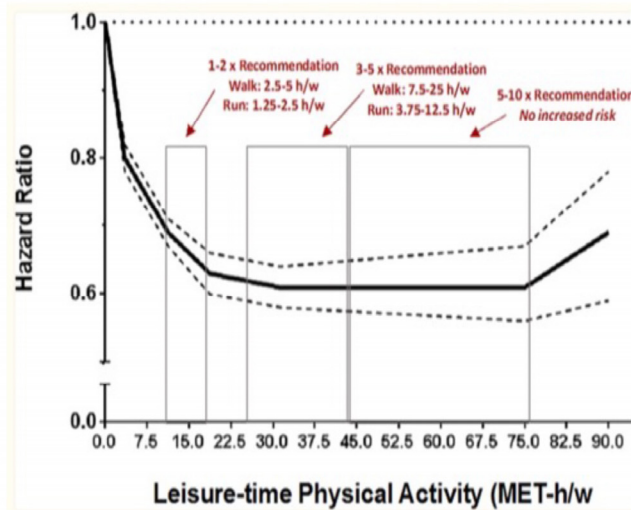


Figure 3.

Relationships of Moderate-to-Vigorous Physical Activity to All-Cause Mortality, with Highlighted Characteristics Common to Studies of This Type.

Kraus et al., Med Sci Sports Exerc., 2019

Physical Inactivity and Chronic Disease Risk - 미국

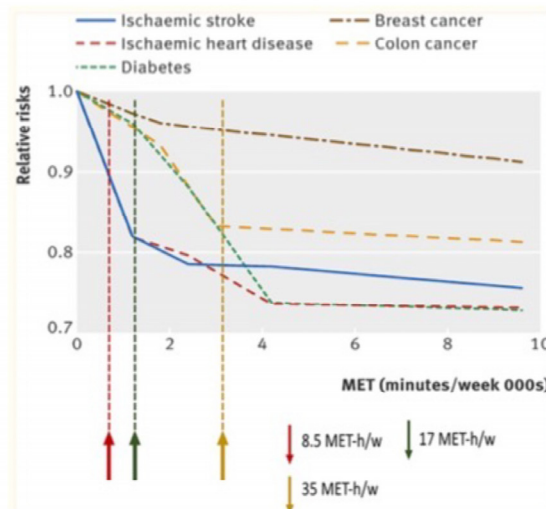


Figure 5.

Dose-Response Relationships Between Total Physical Activity and Risk of Breast Cancer, Colon Cancer, Diabetes, Ischaemic Heart Disease, and Ischaemic Stroke Events Using 174 Studies (43 For Ischaemic Heart Disease, and 26 For Ischaemic Stroke).

Kraus et al., Med Sci Sports Exerc., 2019

Staying Active Teleworking (from Penn Medicine)

- ❑ Schedule daily exercise: 규칙적인 운동을 루틴화(daily planner 활용)
- ❑ Get up every hour: 한시간 마다 책상에서 일어나서 잠시동안 움직이기
- ❑ Sneak in extra movement: 전화통화 하면서 걷기 또는 매시간마다 책상에서 일어나서 집 구석구석을 돌아다니기
- ❑ Go digital: 유튜브 또는 스마트폰 앱을 활용해서 요가, 필라테스, 킥복싱, 재즈댄스 등과 같은 다양한 수준별 신체활동 프로그램에 참여
- ❑ Use what you have: 체육관에 가지 않더라도 집이나 주변에서 손쉽게 할 수 있는 다양한 신체활동(푸쉬업, 싯업, 요가, 체중부하 저항성 운동, 야외 걷기나 조깅 등)을 실천하기

