



Nature, Physical Activity and Health

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Professor and Director

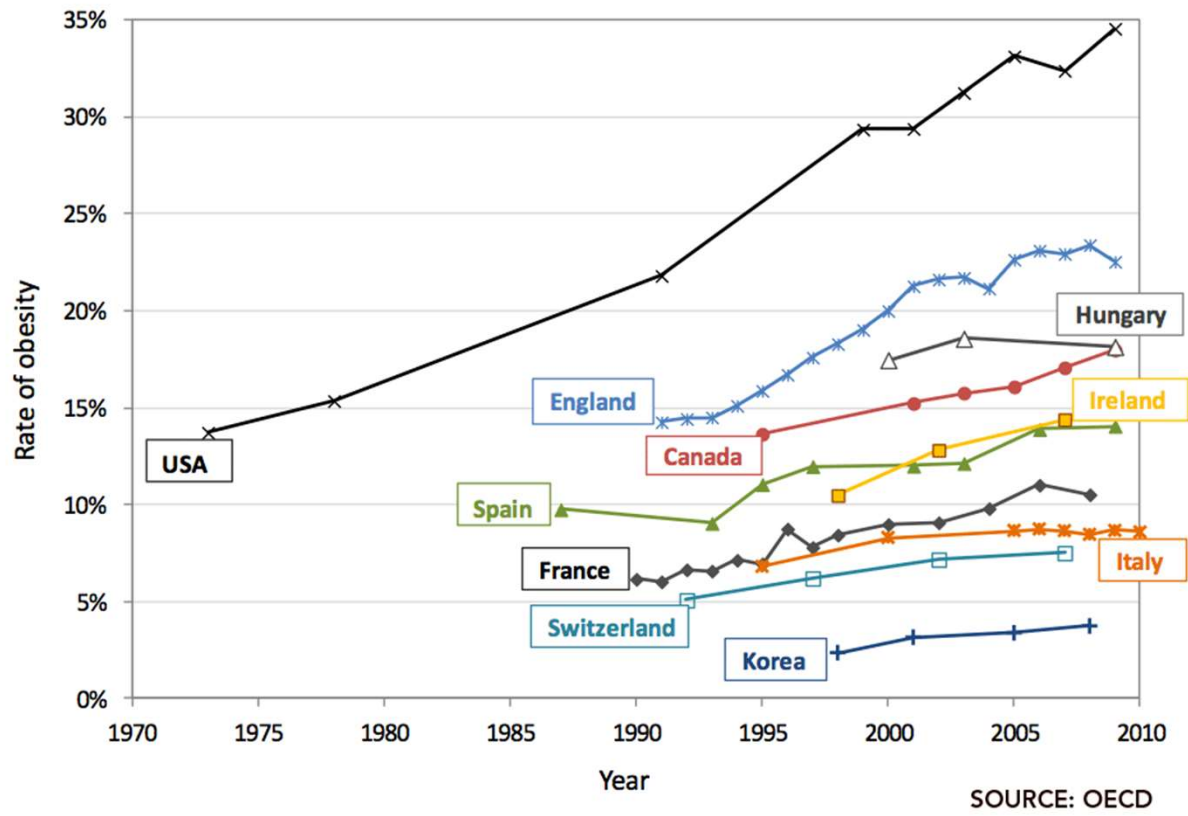
Center for Health & Nature

Nature and Physical Activity

- <https://www.youtube.com/watch?v=GuENAWds5B0>



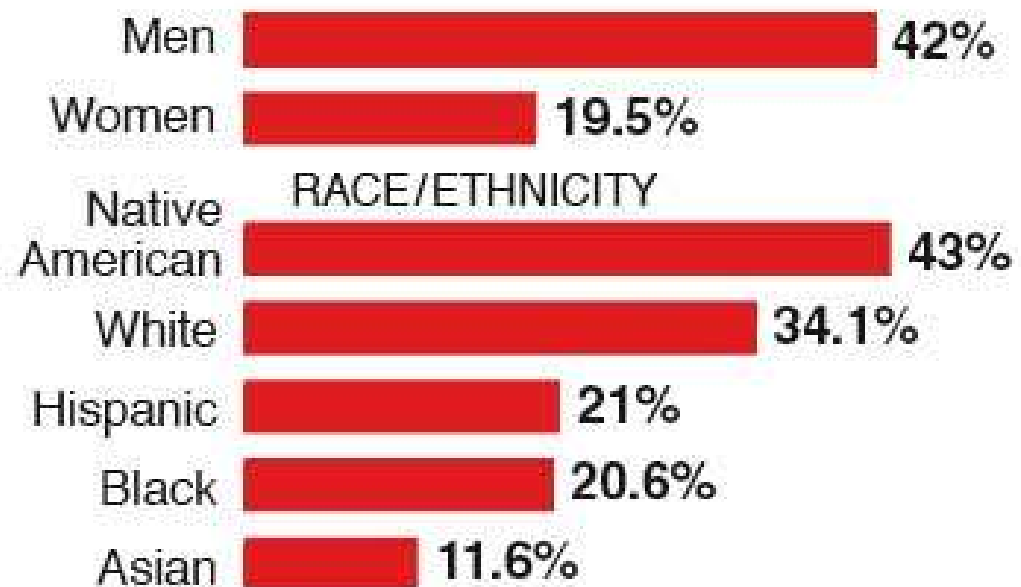
Obesity Rates



Alcohol abuse high

Rates for alcohol abuse and alcoholism were found to be highest in men and in Native Americans, as reported in a new government study.

Percentage of Americans suffering from alcohol abuse or alcoholism in their lifetime



SOURCE: American Medical Association

AP

SOURCE: THE AMERICAN PSYCHOLOGICAL ASSOCIATION

MORE THAN 8 IN 10 AMERICANS



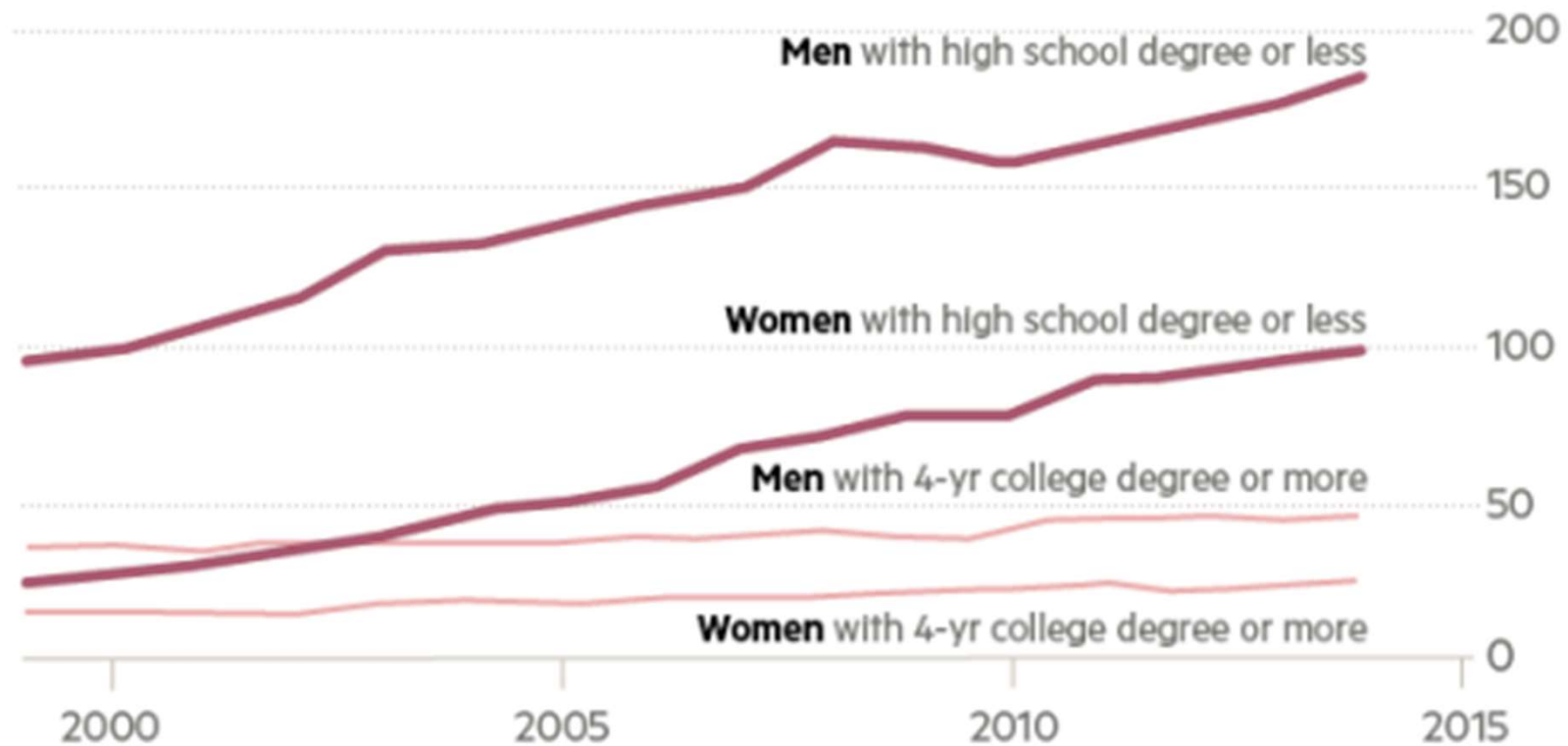
REPORT FEELING

STRESSED

IN THE LAST TWO WEEKS

“Deaths of despair” have skyrocketed for less-educated whites

Deaths by drugs, alcohol and suicide per 100,000 white, non-Hispanic 50-54 year olds



Source: Anne Case and Angus Deaton, Brookings Papers

#CHOOSEHEALTH

1
EAT A
HEALTHY DIET

2
BE PHYSICALLY ACTIVE,
EVERY DAY, YOUR WAY

3
GET
VACCINATED

4
DON'T USE
ANY FORM
OF TOBACCO

5
AVOID OR MINIMIZE
USE OF ALCOHOL

6
MANAGE STRESS FOR
YOUR PHYSICAL
AND MENTAL HEALTH

**12 TIPS
TO BE
HEALTHY**

7
PRACTICE
GOOD HYGIENE

8
DON'T SPEED,
OR DRINK AND DRIVE

9
WEAR A SEAT-BELT
WHEN DRIVING
AND HELMET
WHEN CYCLING

10
PRACTICE
SAFE SEX

11
REGULARLY CHECK
YOUR HEALTH

12
BREAST FEEDING:
BEST FOR BABIES



World Health
Organization

www.who.int/wha/2013



9th Global Conference
on Health Promotion
SINGAPORE 2013

Jeju Olle Trail, South Korea, 2014



Hawaii to Texas - 2015



Average Time Spent with Media in the US, 2018-2022

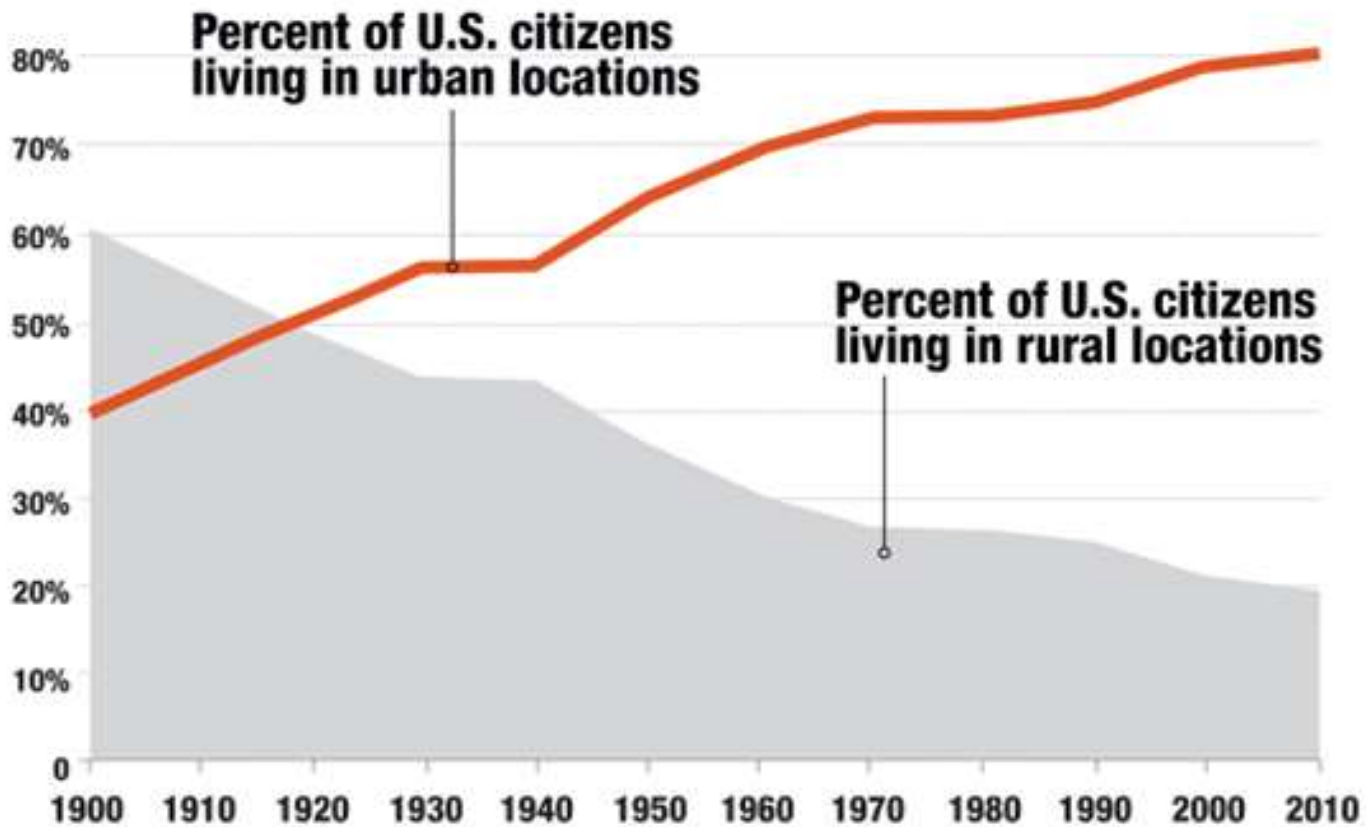
hrs:mins per day among population

	2018	2019	2020	2021	2022
Digital	6:20	6:49	7:50	7:57	8:02
— Mobile (nonvoice)	3:36	3:57	4:31	4:36	4:41
— Audio	0:59	1:07	1:08	1:13	1:17
— Social networks	0:45	0:47	0:54	0:53	0:53
— Video*	0:38	0:43	0:50	0:52	0:54
— Other	1:06	1:12	1:31	1:30	1:30
— Desktop/laptop	1:57	1:54	2:02	1:58	1:56
— Video*	0:23	0:23	0:24	0:24	0:24
— Audio	0:07	0:07	0:07	0:07	0:07
— Social networks	0:08	0:06	0:06	0:06	0:05
— Other	1:19	1:18	1:25	1:21	1:20
— Other connected devices	0:47	0:58	1:17	1:22	1:26
TV***	3:42	3:27	3:34	3:19	3:07
Radio***	1:41	1:39	1:32	1:31	1:31
Print***	0:21	0:19	0:19	0:19	0:18
— Newspapers	0:12	0:10	0:10	0:10	0:10
— Magazines	0:09	0:09	0:09	0:09	0:08
Other traditional media	0:20	0:19	0:22	0:21	0:22
Total	12:24	12:33	13:38	13:27	13:21

*Note: ages 18+; time spent with each medium includes all time spent with that medium, regardless of multitasking; *excludes time spent with video via social networks; **includes all internet activities on desktop and laptop computers; ***excludes digital*

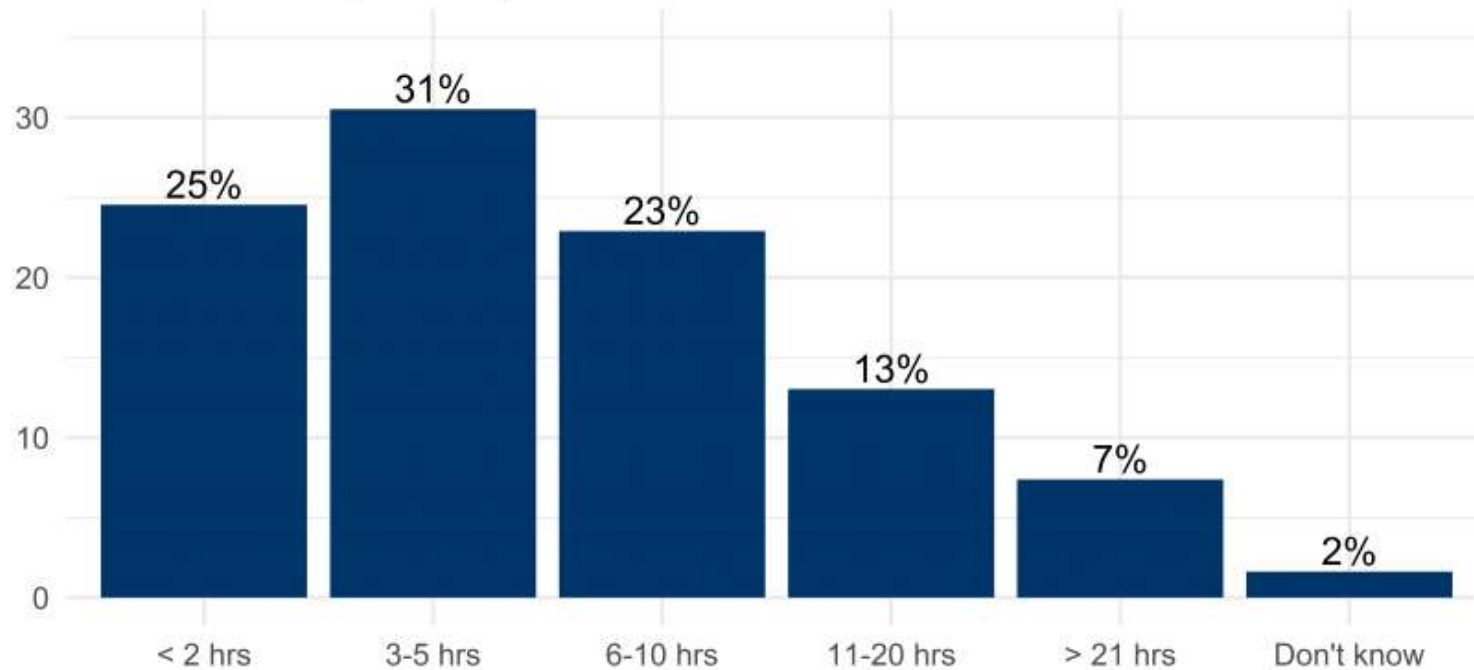
Source: eMarketer, Jan 2021

Out of the Countryside, Into the City



American Adults Report Spending Little Time Outside Each Week

Over half of American adults report spending 5 hours or fewer outside in nature each week. Over three-quarters spend 10 or fewer hours.



*"In a typical week, when weather allows, about how many hours do you spend outside in nature?"
Adults 18+. N = 5,550. Source: NatureofAmericans.org*

Biophilia Hypothesis

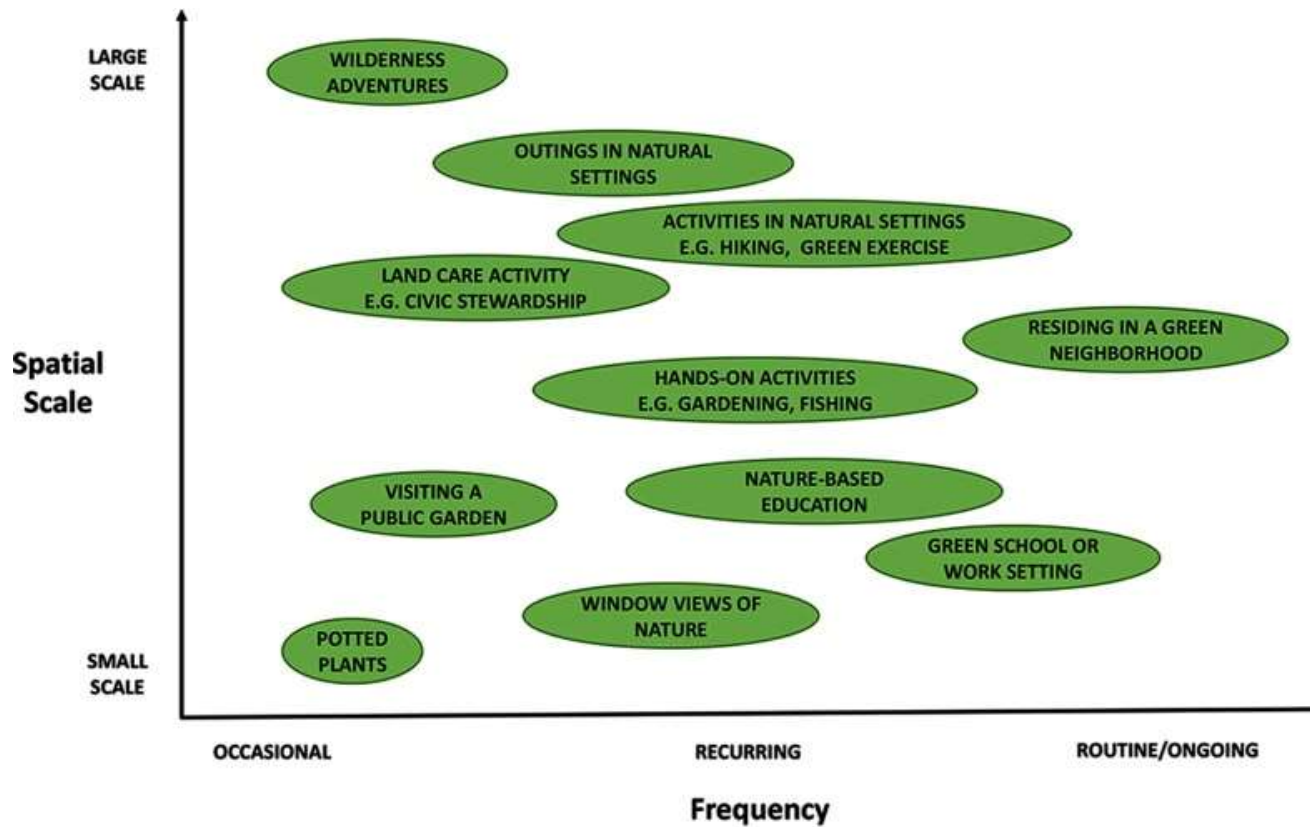
- “The innately emotional affiliation of human beings to other living organisms”
- E. O. Wilson 2001



What is Nature?



Spectrum of nature contact



Frumkin et al., 2017

Types of Space

- Green space – Areas dominated by natural and/or planted vegetation such as trees, flowers, and grass
- Blue space – Visible surface water including lakes, streams, and oceans
- Brown space – areas dominated by rocks and soil including desert landscapes
- Grey space – Areas dominated by concrete, asphalt, buildings and other non-natural materials

Christiana et al., 2021



Hospital Patients

- Who viewed natural signs through their windows:
 - Recovered faster
 - Less time in hospital
 - Less pain killers
 - Less post-op complications
- Ulrich, 1984

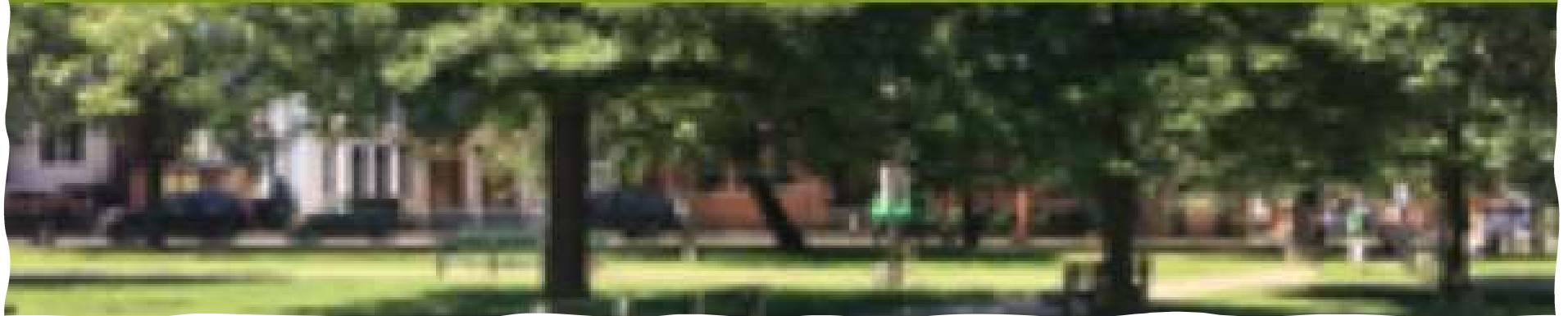


Being in nature

- Urban dwellers brought to a natural environment for a few days had:
 - Less mental fatigue
 - Less irritability & accidents
 - Increased problem solving
 - Increased concentration
- Herzog et al. 1997



High residential exposure to green spaces is associated with an 8% lower risk of all-cause mortality (Gascon et al. 2016)



Benefits of nature on human health

- Reduced stress
- Better sleep
- Improved mental health (reduced depression and anxiety)
- Greater happiness, well-being and life satisfaction
- Reduced aggression
- Reduced ADHD symptoms
- Increased prosocial behavior and social connectedness
- Improved immune function
- Improved general health (adults, children, cancer survivors)
- Lower blood pressure
- Improved postoperative recovery
- Improved birth outcomes
- Improved congestive heart failure
- Improved child development
- Improved pain control
- Reduced obesity
- Reduced diabetes
- Better eyesight
- Reduced mortality

A group of people are playing basketball on a paved court in a public park. The court is surrounded by green grass and large trees. In the background, there is a parking lot with several cars and a building. The scene is captured in a wide-angle shot, showing the entire court and the surrounding area. The text "Leisure-time Physical Activity in Public Parks in Diverse Communities" is overlaid on the image in white font. The background image shows a group of people playing basketball on a paved court in a public park. The court is surrounded by green grass and large trees. In the background, there is a parking lot with several cars and a building. The scene is captured in a wide-angle shot, showing the entire court and the surrounding area. The text "Leisure-time Physical Activity in Public Parks in Diverse Communities" is overlaid on the image in white font.

Leisure-time Physical Activity in Public Parks in Diverse Communities

Floyd, Spengler, Maddock et al., 2008

70% Sedentary in Tampa compared to 51% sedentary in Chicago



China and Park Use

- We observed 75,000 people in parks when the same amount of observations in Chicago yielded only 5,000 people
- More than half of park users were older adults compared to less than 10% in the US

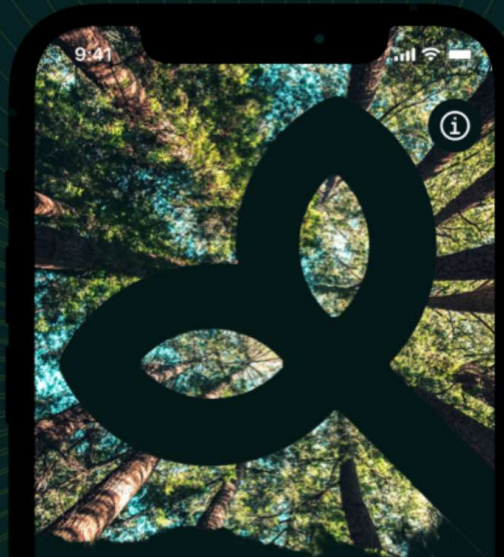


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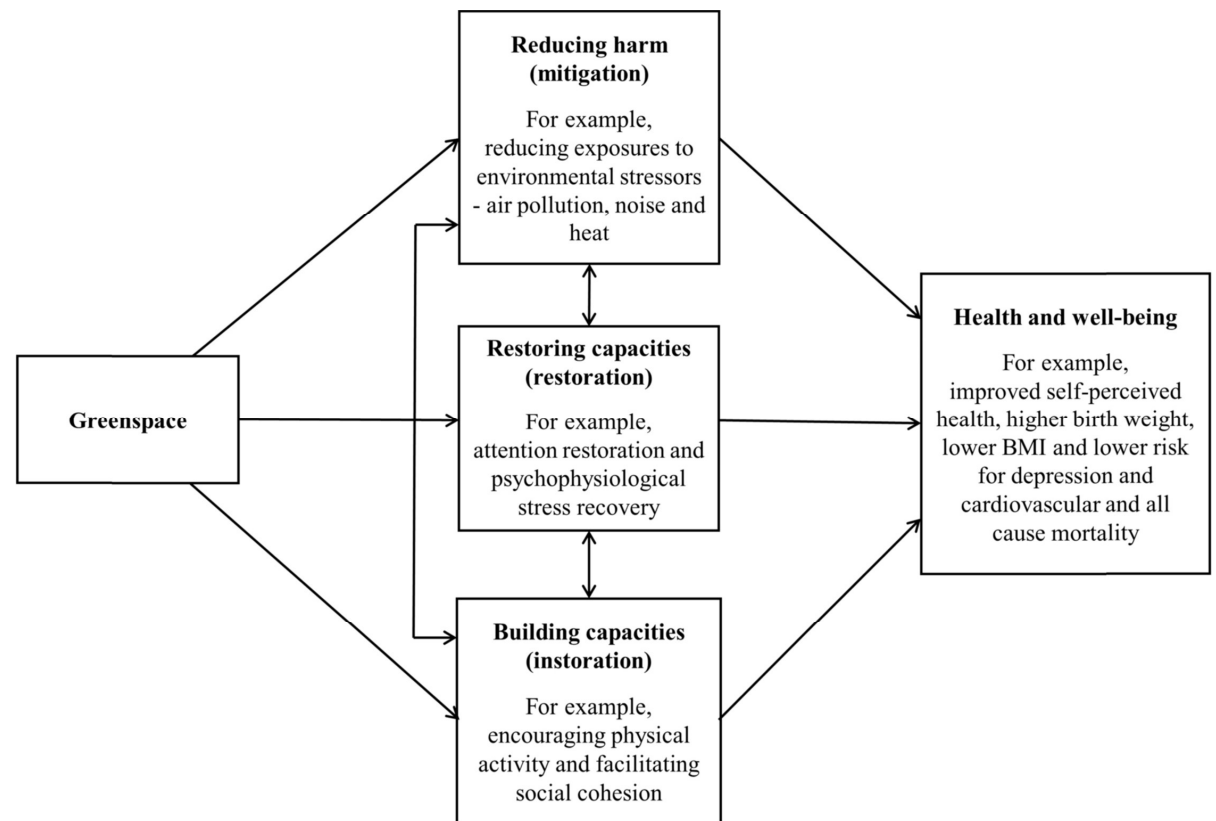


Welcome to NatureDose
Better Health. Right Outside.

A personalized nature prescription
tracker to help you optimize the
benefits of time outdoors.

Pathways linking nature to health

- Markevych et al., 2017





Reducing Harm

- Increasing green spaces in our urban areas has a direct effect on improving the environment.
- Green spaces typically have lower air pollution levels than other urban areas and may help remove harmful particles from the air.
- Urban green space can also reduce the heat island effect making cities cooler and increasing airspeed. Green spaces can reduce noise levels by 5-10 dBs and supply psychologically beneficial natural sounds.
- Green infrastructure can help reduce flooding during hurricanes and other storm events.



Restoring Capacities

- Nature reduces stress and improves attention.
- Nature may reset our attention abilities – studies have examined office workers and students who have spent time in a natural environment and this exposure showed increased time on task and attention to detail, as well as improved cognitive functioning.
- Improvements in creative tasks have also been demonstrated.





Building Capacities

- Not only can nature restore us, but it can also promote health by encouraging physical activity and improving relationships in our communities.
- Certain types of green space including parks, walking and hiking trails, and green schoolyards have been found to improve physical activity and potentially increase its benefits.
- Access to green spaces can increase social cohesion, a measure of neighbors knowing and trusting each other.



Community Gardens

- People who garden tend to eat more fruits and vegetables
- Reduce exposure to pesticides
- Increases physical activity & reduces stress
- Increase property value

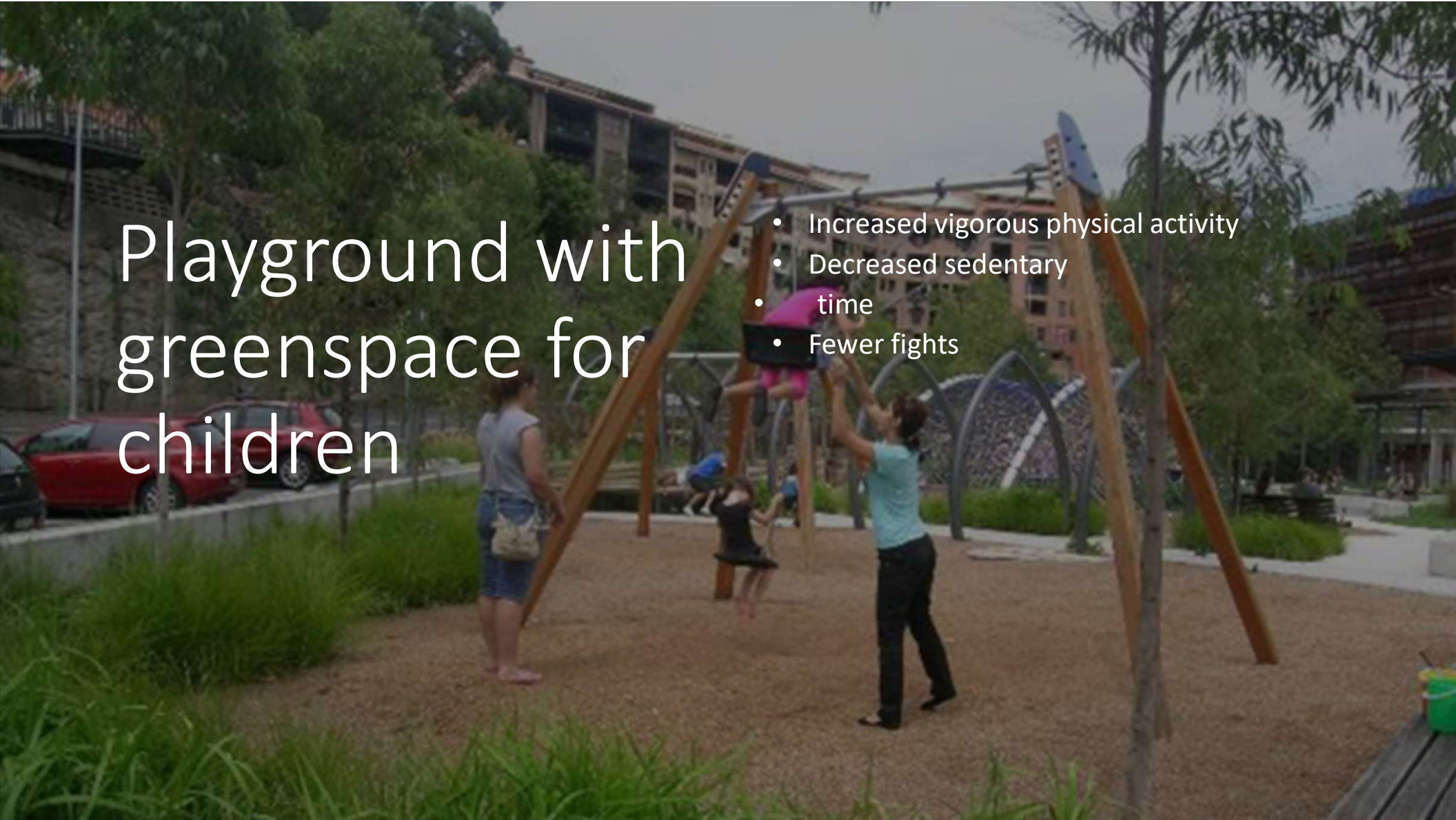
Physical Activity in Natural Environments

- A study showed that people who exercised in wooded environments had a lower risk (OR = .55) of poor mental health than those that exercised in non-natural environments. (Mitchell, 2013)
- Walking in nature can improve directed-attention abilities. (Berman et al., 2008).



Playground with greenspace for children

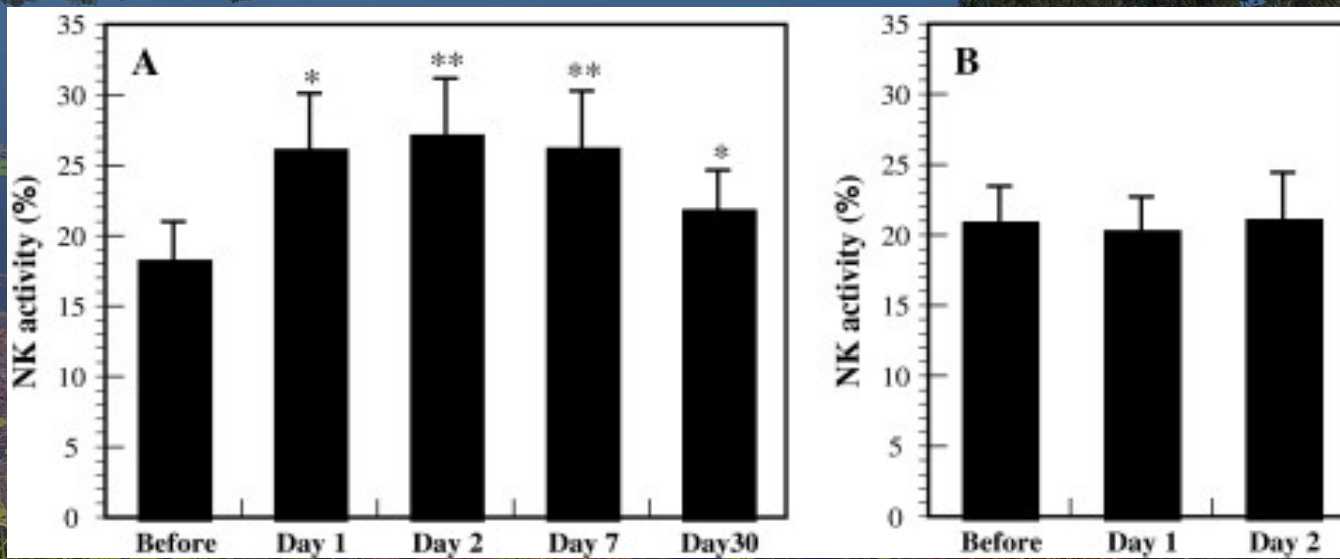
- Increased vigorous physical activity
- Decreased sedentary time
- Fewer fights



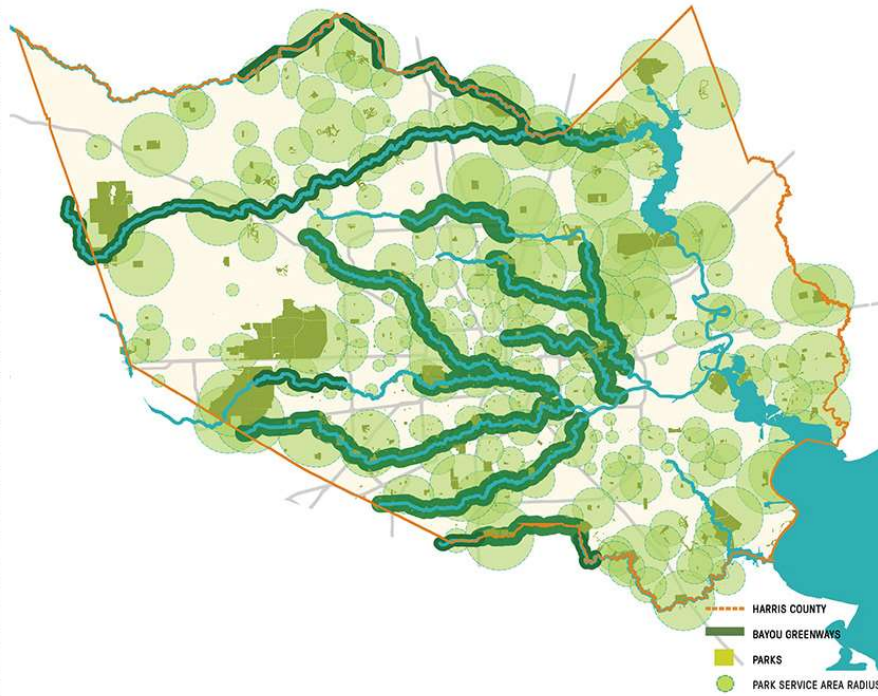
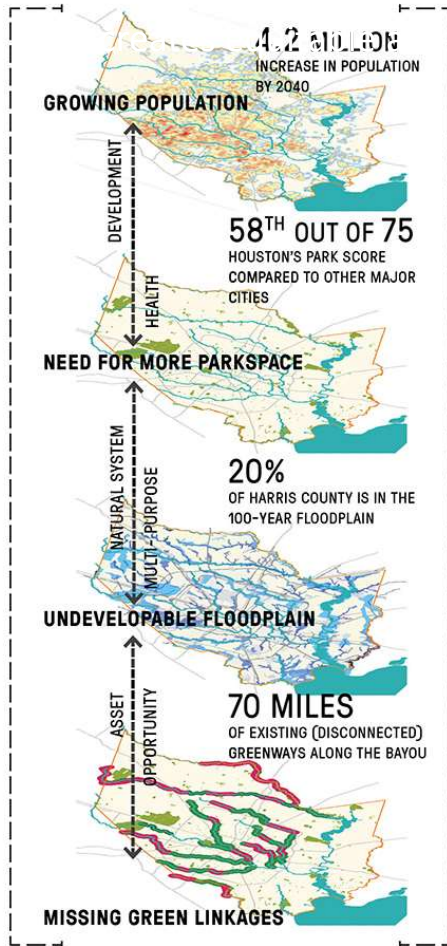
Forest Bathing and NK Cells

3-day, 2-night trip to the forest

Trip to the City



BAYOU GREENWAYS APPROACH



Bayou Greenways Trails

Zip codes > 30% of the population living within a 10-minute walk of the trail had:

93% reduction in obesity related admissions

77% reduction in Ischemic Heart Disease Admissions

71% reduction in heart attack admissions

Greenspace and Child PA

- 2006-2008 Bristol, UK
- 10-11 years with accelerometers and GPS
- 13% time outside, 2% in greenspace
- 35% of MVPA while outside
- 9% of boys MVPA and 6% of girls while in greenspace

Wheeler et al., 2010

Quality of Greenspace & PA

420 Turkish adults

Distance to nearest urban green
space

Quality of greenspace
(maintenance and cleanliness)

Both related to increased
frequency of PA

Older adults, greenspace & PA

Longitudinal study of 15,672 older adults across 7.5 years in the UK

Neighborhood greenspace was linked to a slower decline in PA

Dog walking may be an important mechanism

Dalton et al., 2016

Preventive effect

- While nature appears to be helpful in restoring health after illness, can it actually help us keep healthy?
- Forest bathing (“shinrin-yoku”): Japan
- Nature Prescriptions
 - Scotland
 - Educational leaflet with numerous monthly activities (touching the ocean, taking a dog for a walk, following a bumble bee)
- 30 Days Wild: United Kingdom
 - Wildlife Trusts in the UK
 - Encourage people to engage with nature every day for a month
 - 18,000 people signed up in the first year
- Park Rx America
 - Connects publicly available outdoor space to physicians to have them prescribe nature





Thank you for
your attention
