

# DC Park Prescription: A Scalable Model for Medicine & Public Health

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# Objectives

1. Review health reasons to spend time in Nature
2. Learn how DC Park Rx was planned, developed and implemented at a "doctor's office"
3. Review recently published data on DC Park Rx
4. Summarize next steps for expansion and research of Park Rx

# Chronic disease of epidemic proportions

- ◆ 133 million Americans currently suffer from a chronic disease (coronary heart disease, stroke, high blood pressure, Type 2 diabetes, and mental health conditions)
- ◆ People suffering from obesity are at increased risk of high blood pressure, high cholesterol, Type 2 diabetes, Coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, cancer, and mental illness

Source: <http://www.cdc.gov/healthyweight/effects/>

# Disease Burden cont.

- ◆ 10 million adults suffer with serious mental illness.<sup>1</sup>
- ◆ 12 million children and 78 million adults are obese.<sup>2</sup>
- ◆ 29 million Americans suffer with diabetes.<sup>3</sup>
- ◆ 70 million American adults have high blood pressure.<sup>4</sup>
- ◆ For every dollar spent on health care, 86% is spent on patients with one or more chronic disease.<sup>5</sup>



Photo credit:  
Amy Nazarov

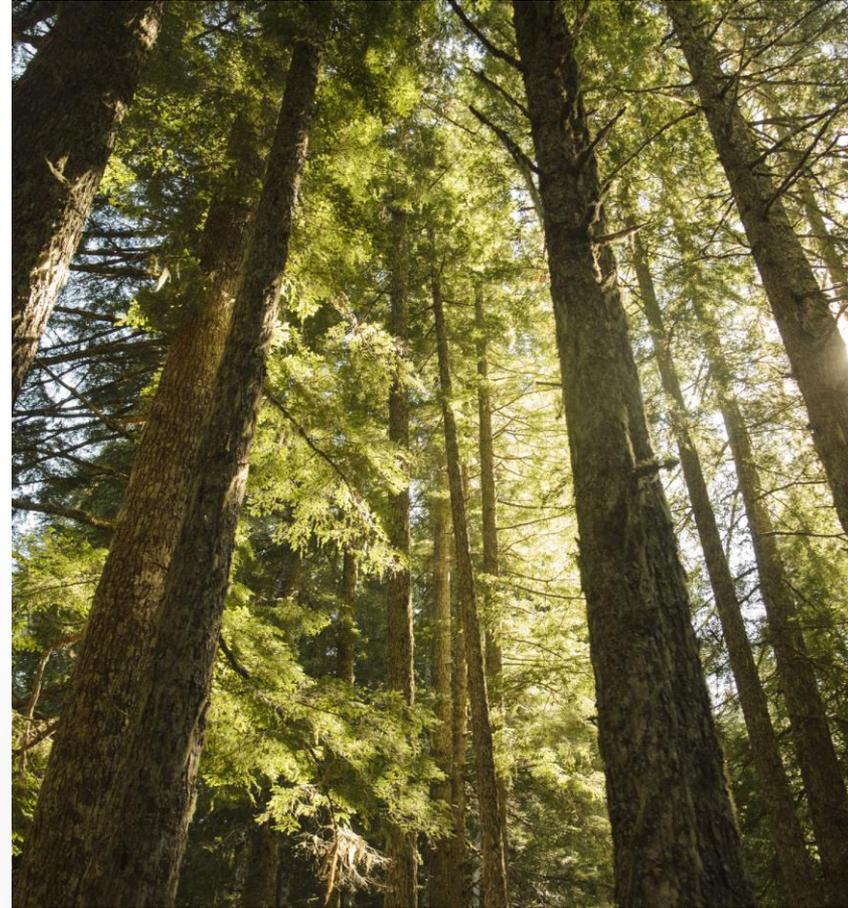
# Nature's effects on Mental Health

- ◆ Spending time in nature is linked with decreased anxiety, rumination, and negative affect.<sup>6</sup>
- ◆ Green spaces are restorative and boost attention, while viewing concrete worsens attention during tasks.<sup>7</sup>
- ◆ Walking in parks improved focus in children with attention deficits.<sup>8</sup>



# Nature's effects continued...

- ◆ Viewing and spending time in green spaces lowers cortisol levels and blood pressure.<sup>9</sup>
- ◆ Access to parks reduce risk of being overweight and obese.<sup>10</sup>
- ◆ Living in a neighborhood with more opportunities for physical activity is associated with lower risks of Type 2 Diabetes.<sup>11</sup>
- ◆ Living near green spaces reduces mortality even when adjusted for sociodemographic factors.<sup>12</sup>

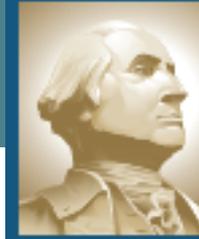




**DC Park Rx** is a  
Community Health  
Initiative whose  
mission is to  
prescribe parks to  
prevent and treat  
chronic disease and  
promote wellness

Photo credit:  
Laura Anderko

National Park Service  
U.S. Department of the Interior

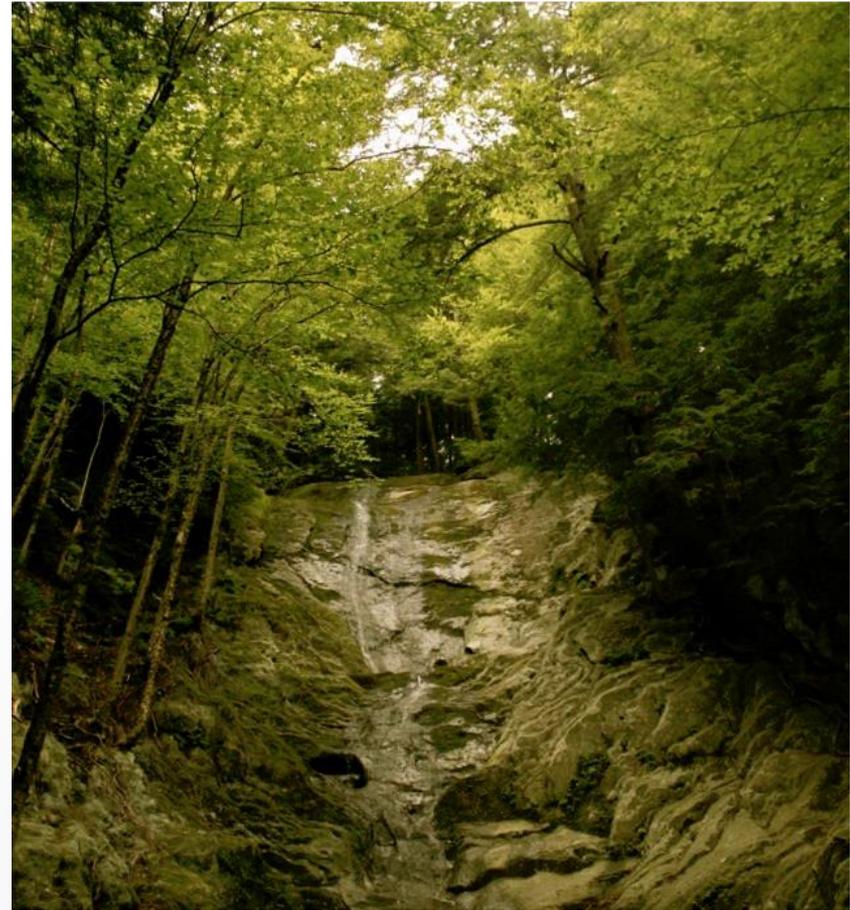


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WASHINGTON, DC



# What have we accomplished?

- Developed standardized park rating tool
- Developed **Park Pages** searchable park database linked to EHR (electronic health record)
- **DC Park Rx** “went live” on July 1, 2013
- DC Park Rx fully integrated within Unity Health Care, Children’s National Health Centers, and CCI health and wellness services
- Current patient population reach of ~200,000 and ~300 providers in the National Capital Region



**One click away...**

Care Plan

Reconciliation

Help

Select Specialty

Pediatrics

**Assessment # 1** Select problem; enter assessment, orders, and meds; then click 'Commit Assessment'

Prob List

BODY MASS INDEX PED &gt;EQUAL TO 95TH % AGE (ICD-V85.54) (ICD-V85.54)

View/Insert Prior

Commit Assessment

Clear All

Assessment:  New  Improved  Unchanged  Deteriorated  Comment Only

parkrx

Orders:

Ofc Vst, Est, Level III (99213) (99213)

New Meds

Change Meds

Meds auto insert

R

New Orders

Orders auto insert

R

Insert Template

R

Print Handout

**Assessment # 2** Select problem; enter assessment, orders, and meds; then click 'Commit Assessment'

View/Insert Prior

Commit Assessment

Clear All

Add All Meds to Note

Remove New Meds from Note

Rx Monitoring/Alerts

Rec. Interventions

Rec. Tests

Orders

Rx Refills

HPI

Entry

PMH

FH-SH

Risk Factors

ROS

VS

PE

Problems

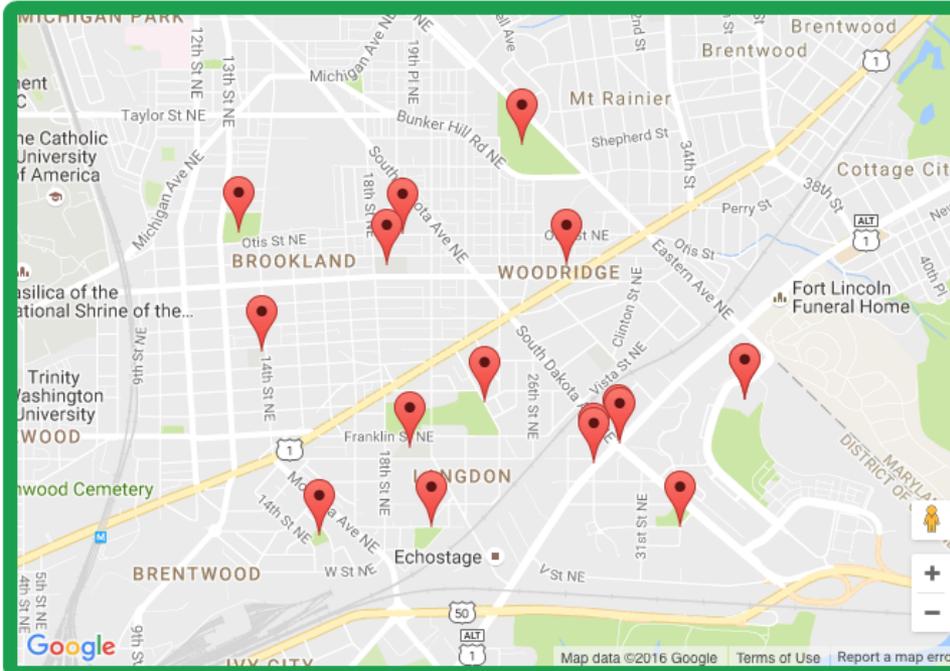
CPOE ADD

Instructions/Plan

Copyright

WITHIN RADIUS:  .25 MILE  .5 MILE  1 MILE  2 MILES  3 MILES  5 MILES  
 ALL PARKS

17 parks



SORT BY:  Distance  Park Name

- 0.8mi Barnard Hill Park
  - 0.7mi Brentwood Recreation Center
  - 0.5mi Burroughs Elementary
  - 0.8mi Dakota Playground
  - 0.6mi Dwight A. Mosley Sports Com...
  - 0.5mi Loomis Park
  - 1.0mi Fort Bunker Hill Park
- CHECK TOP 5

- [DC Parks and Rec](#)
- [National Park Service](#)
- [Montgomery County Parks](#)
- [National Zoological Park](#)
- [US National Arboretum](#)

- [US Botanical Garden](#)
- [Prince George's County Parks and Rec](#)
- [Fairfax County Parks and Rec](#)
- [Destination DC Nature and Outdoors](#)
- [November Project DC](#)

- [Walk with a Doc](#)
- [DC Scores](#)
- [National Park Rx Initiative](#)
- [Biophilic Cities](#)
- [Institute at the Golden Gate](#)

- [National Rec and Park Association](#)
- [National Environmental Education Foundation](#)
- [Children And Nature Network](#)

WITHIN RADIUS:  .25 MILE  .5 MILE  1 MILE  2 MILES  3 MILES  5 MILES  
 ALL PARKS

17 parks [HIDE FILTERS](#)

GENERAL	AMENITIES	OPEN SPACE/PLAYGROUND	TRAILS	SPORTS AMENITIES
<b>Overall Park Size</b> <input type="checkbox"/> Less than area of a basketball court <input type="checkbox"/> Between basketball court and football field size <input type="checkbox"/> Larger than a football field	<b>Park Amenities</b> <input type="checkbox"/> Benches/Seating <input type="checkbox"/> Drinking Fountains <input type="checkbox"/> Grills <input type="checkbox"/> Picnic Tables <input type="checkbox"/> Port-a-Potties <input type="checkbox"/> Restrooms <input type="checkbox"/> Trash Cans	<b>Size of Open Space:</b> <input type="checkbox"/> Less than area of a basketball court <input type="checkbox"/> Between basketball court and football field size <input type="checkbox"/> Larger than one football field in size	<b>Overall Trail Condition</b> <input type="checkbox"/> 1 (not good) <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 (very good)	<b>Sports Amenities</b> <input type="checkbox"/> Baseball Field <input type="checkbox"/> Basketball Court <input type="checkbox"/> Biking <input type="checkbox"/> Birdwatching <input type="checkbox"/> Canoeing <input type="checkbox"/> Crosscountry Skiing <input type="checkbox"/> Fishing <input type="checkbox"/> Fitness Center <input type="checkbox"/> Football Field <input type="checkbox"/> Golf <input type="checkbox"/> Gymnasium <input type="checkbox"/> Handball <input type="checkbox"/> Hiking
<b>Overall Park Shade</b> <input type="checkbox"/> 0-20% <input type="checkbox"/> 20-40% <input type="checkbox"/> 40-60% <input type="checkbox"/> 60-80% <input type="checkbox"/> 80-100%	<b>Food For Sale</b> <input type="checkbox"/> Snack Shop <input type="checkbox"/> Vending Machine <input type="checkbox"/> Gift Shop <input type="checkbox"/> Restaurant <input type="checkbox"/> Food Truck	<b>Activities Allowed</b> <input type="checkbox"/> Play Frisbee Or Soccer <input type="checkbox"/> Go for a jog <input type="checkbox"/> Have a picnic	<b>Overall Trail Difficulty</b> <input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult <input type="checkbox"/> Very Difficult	
<b>Pets</b>		<b>Playground Condition</b> <input type="checkbox"/> 1 (not good) <input type="checkbox"/> 2	<b>Trail Activities</b> <input type="checkbox"/> Bicycling allowed	

[VIEW SELECTED PARKS](#)

# Kalorama Park

1903 Belmont Rd, NW, Washington, DC 20009



DC Parks and Rec | (202) 753-1555

HOURS: Dawn to Dusk



## GETTING THERE:

### Parking, Bus, Metro, Bike Racks

**Bus Route:** #90, 96, DC98, L2, 42

**Handicap Accessible:** Yes

## GENERAL INFO:

**Pets:** Allowed, On Leash

**Benches:** 10+

**Restrooms:** No

**Picnic Tables:** <5

**Overall Park Size:** Less than area of a basketball court

**Special Features/Comments:** The recreation center staff schedule a multitude of programming events for children throughout the year, including a Valentine's Day party, a fall picnic, a Halloween party, and a winter holiday party. Other youth activities in the park include the Department's summer camp. The Community Garden located in the Park, run by a separate group, is available for neighbors to use for growing vegetables and flowers.



## OPEN SPACE/PLAYGROUND:

**Playground Cleanliness:** 5 (very clean)

**Playground Surface Type:** Wood chips

**Playground Condition:** 5 (very good)

**Playground Shade:** 20-40%

## TRAILS:

**Overall Trail Condition:** 4

**Overall Trail Cleanliness:** 4

**Overall Trail Difficulty:** Easy

**Trail Activities:**

Hiking/walking/running/jogging allowed

**Trail Extras:** Lighting, Benches/rest areas

**Trail Surface Type:** Concrete

**Trail Slope:** Flat/Gentle

**Trail Cross Slope:** Flat/Gentle

**Trail Width:** > 4 ft

**Trail Layout:** Loop

**Trail Distance:** 1/4 mile

## SPORTS AMENITIES:

**Sports Amenities:** Basketball Court, Open Space, Playground



Care Plan

Reconciliation

Help

Select Specialty Pediatrics

**Assessment # 1** Select problem; enter assessment, orders, and meds; then click 'Commit Assessment'

Prob List

BODY MASS INDEX PED &gt;=EQUAL TO 95TH % AGE (ICD-V85.54) (ICD-V11)

View/Insert Prior

Commit Assessment

Clear All

Assessment:  New  Improved  Unchanged  Deteriorated  Comment Only

Parks Rx Provided Today

Orders:

Ofc Vst, Est, Level III (99213) (99213)

New Meds

Change Meds

Meds auto insert 

New Orders

Orders auto insert Insert Template 

Print Handout

**Assessment # 2** Select problem; enter assessment, orders, and meds; then click 'Commit Assessment'

View/Insert Prior

Commit Assessment

Clear All

Add All Meds to Note

Remove New Meds from Note

Rx Monitoring/Alerts

Rec. Interventions

Rec. Tests

Orders

Rx Refills

HPI

Entry

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FH-SH

Risk Factors

ROS

VS

PE

Problems

CPOE ADD

Instructions/Plan

Copyright

# How to prescribe parks in a clinical setting

- Healthcare provider (physician, nurse, social worker, nurse practitioner, case manager, etc.) recognizes one or more chronic disease factors in patient/family
- Healthcare provider reviews daily routine of his/her patient/family in terms of activity in green space.
- Healthcare provider assesses readiness and willingness of patient to spend more time in green space.
- Healthcare provider accesses [www.DCParkRx.org](http://www.DCParkRx.org) website by using quick text function anywhere in the electronic health record.
- Healthcare provider reviews Park options (real-time) with patient/family to decide which park is the most appropriate for patient/family to visit.

## How to prescribe parks in a clinical setting cont.

- Healthcare provider and patient/family discuss and agree on frequency of visits to park per week, duration of time to be spent in park, and activities to engage while at the park.
- Healthcare provider documents the specificity of the park prescription (name of Park, frequency, duration, activities) in the treatment or preventive medicine section of electronic health record.
- Healthcare provider and patient/family agree on date and time of next appointment.
- Healthcare provider either prints or shares electronically (via patient portal) the Park Page (Park summary) and the patient summary, which includes the treatment plan (name of park, frequency, duration, activities).

DC Park Rx is a low-cost intervention that utilizes a known, generally trusted, and accessible resource – parks – to influence positive health outcomes by way of the provider-patient relationship in the health care setting



# ...but is Park Rx scalable?

- Ask for a meeting with CMO, CEO, CIO of a health provider organization (Community Health Center, Hospital system, group practice)
- Invite park agency partners (already established partnerships) surrounding the Geographic area of the health provider organization.
- Introduce the concept of prescribing parks in a healthcare setting & demonstrate:
  1. Scientific evidence to support prescribing nature to improve human health and
  2. Ease of use--show how easy it is to integrate both into EHR & into the daily routines of providers.
- Arrange a separate meeting with the park agency GIS officer to import park attributes into Park Rx website/database.
- Create a locale of Park Rx for that region within DCParkRx.org
- Arrange a separate meeting with the CIO of the health provider organization to strategically place DCParkRx.org inside EHR.
- Requests screen shots/casts of EHR from CIO to use in upcoming in-service
- Request from CEO/CMO opportunities to do Park Rx in-service at ALL STAFF meeting. Take Promotionals (posters, stickers, etc.) and distribute to staff.
- FOLLOW UP!! with CEO/CMO/CIO to guarantee follow through.

# next steps for DC Park Rx...

- ◆ Continue expansion nationally (850,000 licensed physicians, and millions more non physician providers)
- ◆ Optimize technology to improve communication & functionality
- ◆ Evaluate & research park utilization, user experience, and health outcomes



Photo credit:  
Laura Anderko

# ParkRxAmerica?

CT-CHC statewide FQHC

VA-William & Mary

WV-Harper's Ferry National  
Historic Park, US Fish and  
Wildlife, UWV

MD-Johns Hopkins, St.  
Agnes, Kaiser, MRPA,  
Frederick County Parks/Dr.  
Lee

NYC Bronx-Bronx  
Institute for Family  
Health

NV-Southwest Medical  
Associates/NPS

CA-Los Angeles  
County DPH

# hooked yet?

- Partner with your park agencies (local, state, county, and national) to import park attributes to [www.DCParkRx.org](http://www.DCParkRx.org) ✓
- Link [www.DCParkRx.org](http://www.DCParkRx.org) to electronic health record (EHR) of organizations providing health care ✓
- In-service health organization's ALL STAFF meeting
- Start prescribing! ✓

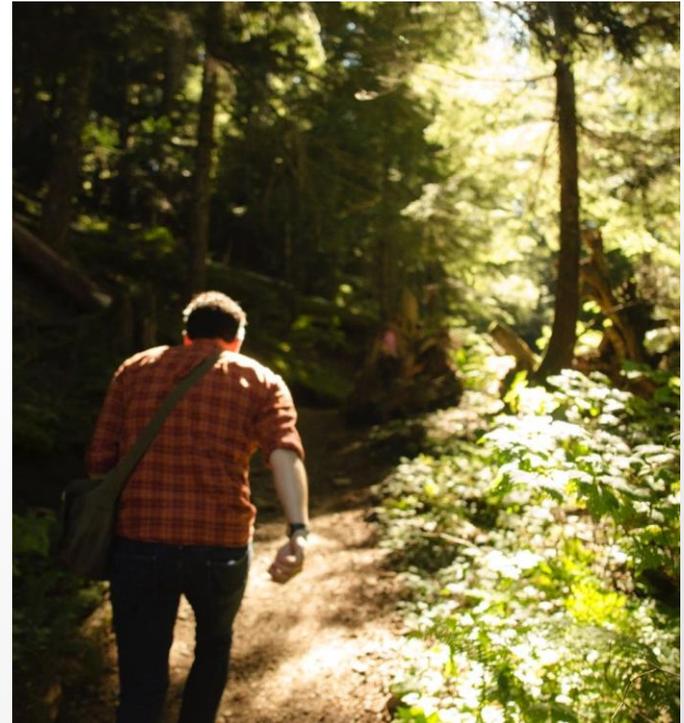


Photo credit:  
Quinn Pennea

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# Sources:

1. NIMH <http://www.nimh.nih.gov/health/statistics/prevalence/serious-mental-illness-smi-among-us-adults.shtml>
2. CDC <http://www.cdc.gov/obesity/data/childhood.html>
3. National Diabetes Statistics Report, <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>
4. Nwankwo T, Yoon SS, Burt V, Gu Q. Hypertension among adults in the US: National Health and Nutrition Examination Survey, 2011-2012. NCHS Data Brief, No. 133. Hyattsville, MD: National Center for Health Statistics, Centers for Disease Control and Prevention, US Dept of Health and Human Services, 2013.
5. AHRQ <http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/prevention-chronic-care/decision/mcc/mccchartbook.pdf>
6. Bratman, G. N., Daily, G. C., Levy, B. J., & Gross, J. J. (2015). The benefits of nature experience: Improved affect and cognition. *Landscape and Urban Planning*, 138, 41-50.
7. Lee, K. E., Williams, K. J.H., Sargent, L. D., Williams, N. S.G., & Johnson, K. A. (2015). 40-second green roof views sustain attention: The role of micro-breaks in attention restoration. *Journal of Environmental Psychology*, 42, 182-189.
8. Taylor AF, Kuo FE. Children with attention deficits concentrate better after walk in the park. *J Atten Disord* 2009;12:402.
9. Park B, et al. (2009). The physiological effects of Shinrin-yoku (taking in the forest atmosphere or forest bathing): evidence from field experiments in 24 forests across Japan. *Environmental Health and Preventative Medicine*,15:18–26.
10. Wolch, J., Jerrett, M., Reynolds, K., McConnell, R., Chang, R., Dahmann, N., et al. (2011). Childhood Obesity and Proximity to Urban Parks and Recreational Resources: A Longitudinal Cohort Study. *Health & Place*, 17(1), 207-214.
11. B. N., Moore, K., Adar, S. D., Horowich, Diez Roux, A. V. (2015). Longitudinal Associations Between Neighborhood Physical and Social Environments and Incident Type 2 Diabetes Mellitus The Multi-Ethnic Study of Atherosclerosis (MESA). *JAMA Internal Medicine*, 25(8), 1311-1320.
12. Villeneuve PJ, et al. (2012). A cohort study relating urban green space with mortality in Ontario, Canada. *Environmental Research*, 115:51-8.