

PRESCRIPTION

FOR:	FROM:
AILMENT:	DATE:

R CHILL PILL DAY OFF GOOD OBY SHOPPING
 VACATION LAUGHTER MASSAGE EXERCISE
 STIFF DRINK HUG BEHAG OTHER



SPECIAL INSTRUCTIONS

DOSAGE: PER HOUR PER MIN
DURATION: PER DAY PER WEEK
REFILLS: ONE TWO THREE

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Green Medicine:

Building bridges between health care and the
great outdoors

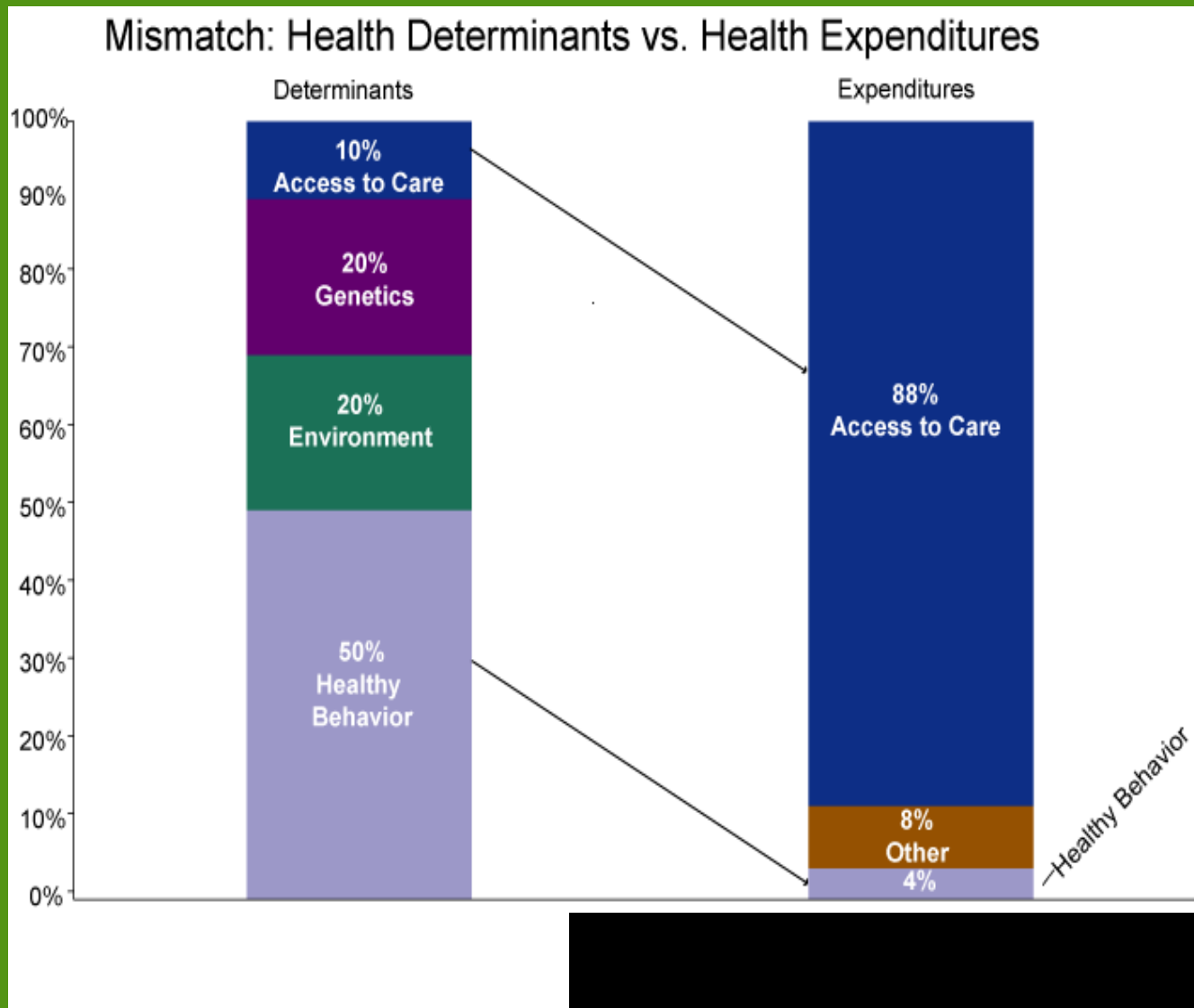
Daphne Miller MD

Associate Clinical Professor

Department of Family and Community Medicine

UCSF, San Francisco

Spending Mismatch: Health Care vs. the Determinants of Health



Healthy People in a Healthy Economy

“If we analyze the operations of scenes of beauty upon the mind, and consider the intimate relation of the mind upon the nervous system and the whole physical economy{...}the reinvigoration which results from such scenes is readily comprehended.”



Frederick Law Olmstead, 1865

NDD

Nature Deficit Disorder

36 minutes

average outdoor time per day for US kids

Diseases of Indoor Living

- Obesity
- Heart disease
- Stroke
- Vitamin D deficiency
- Allergies and Asthma
- ADD
- Diabetes Type 2
- Myopia
- Insomnia
- Sleep apnea

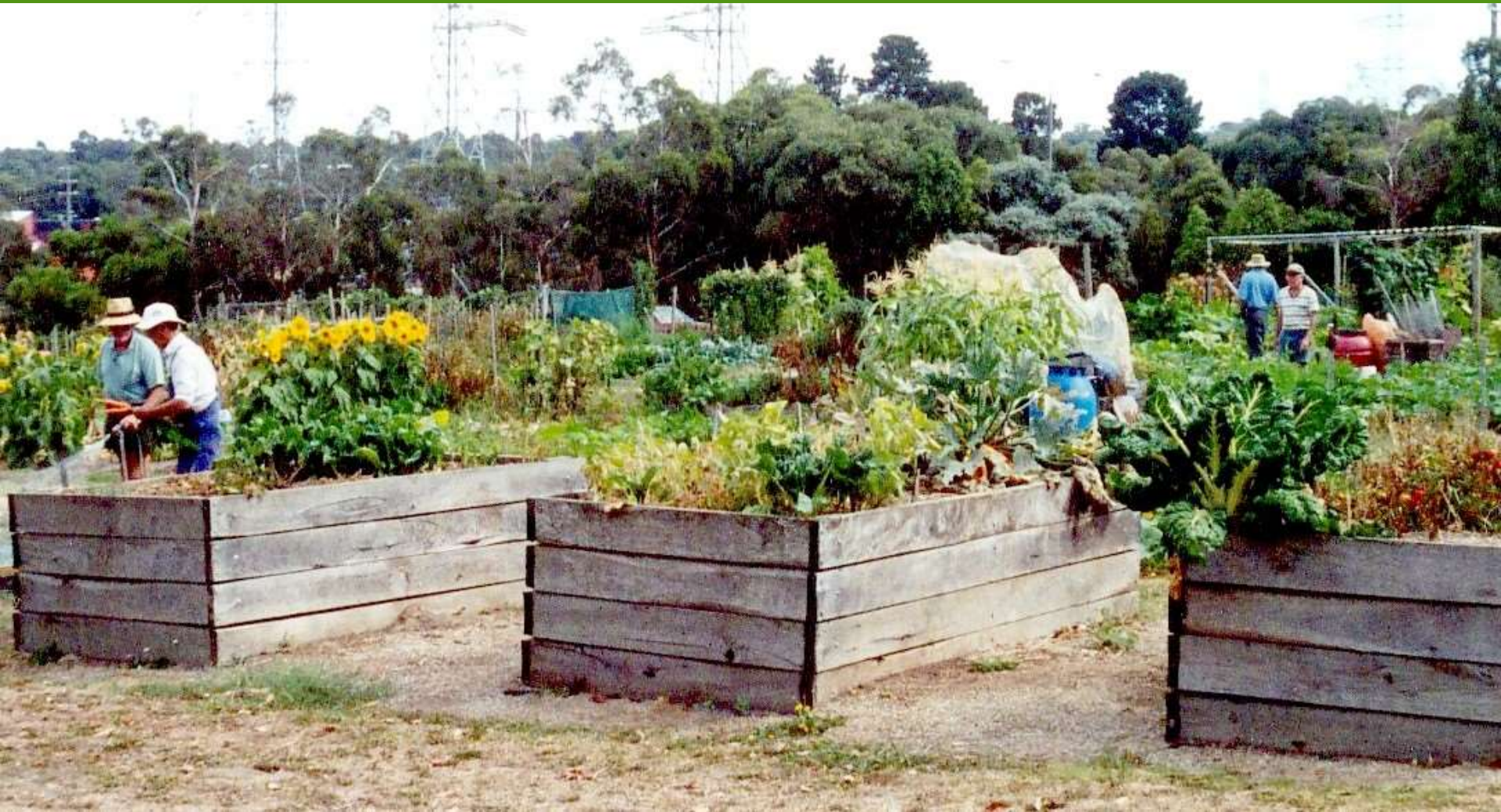






Handwritten text on the girl's white cap, possibly reading "Daddy's Love is a Bug".

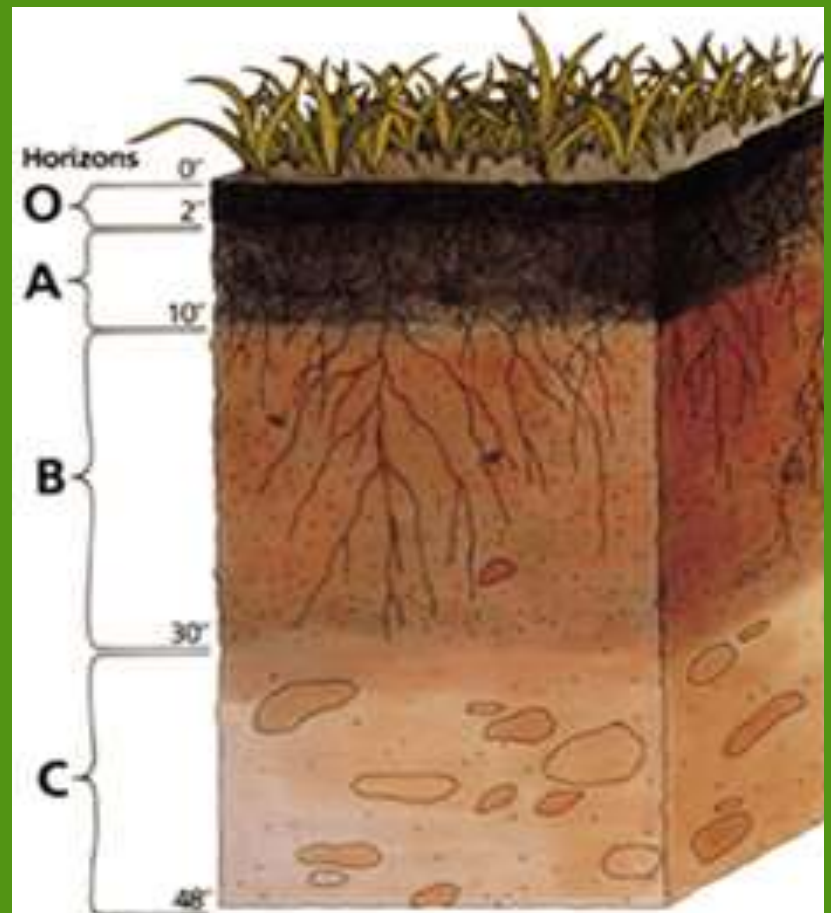
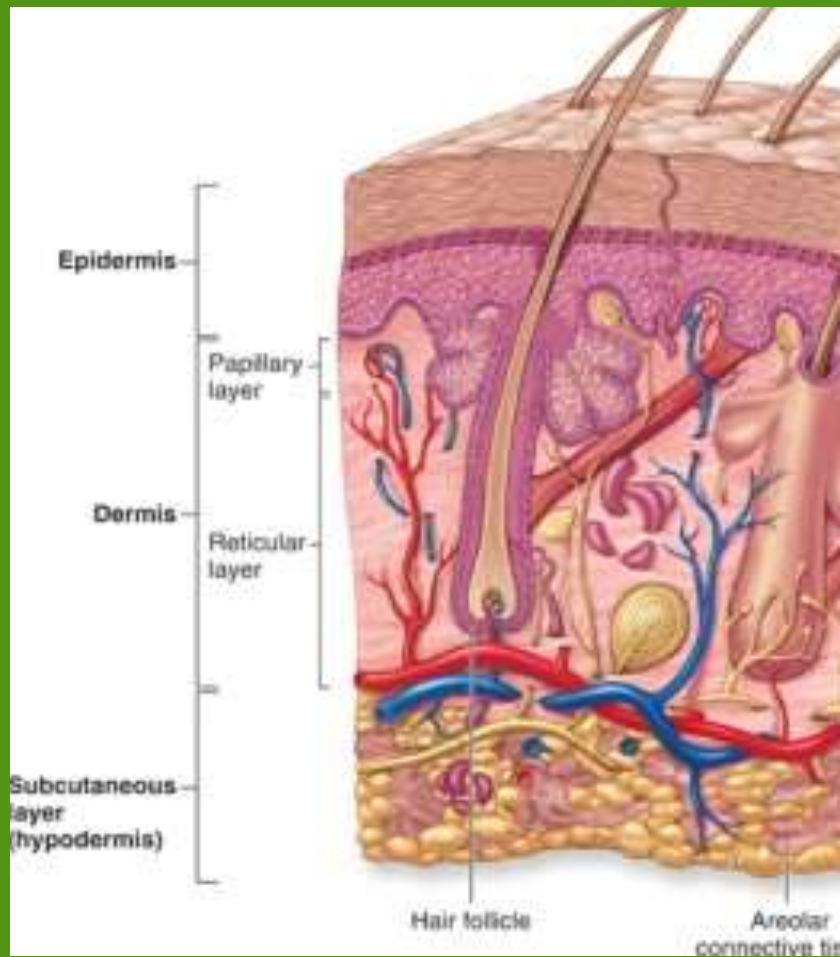
daddy's
love is
a bug

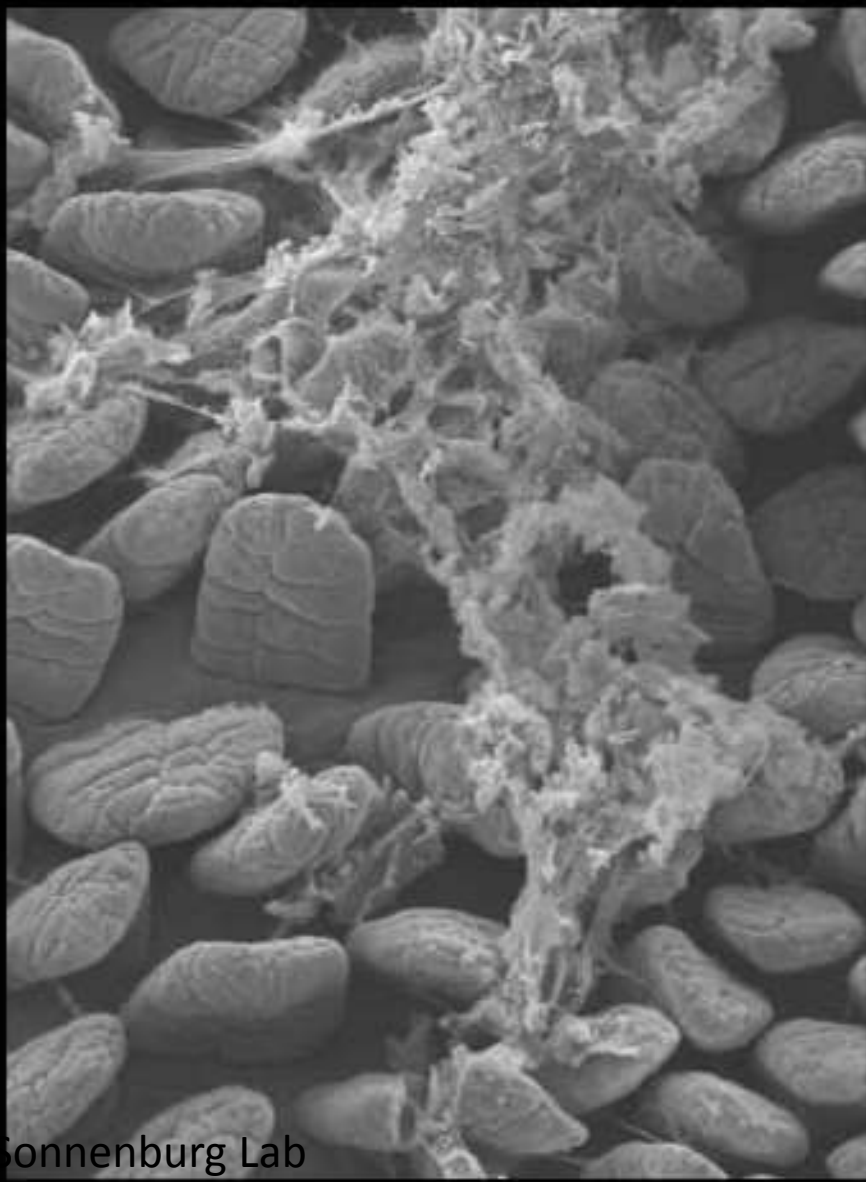


Biophilia

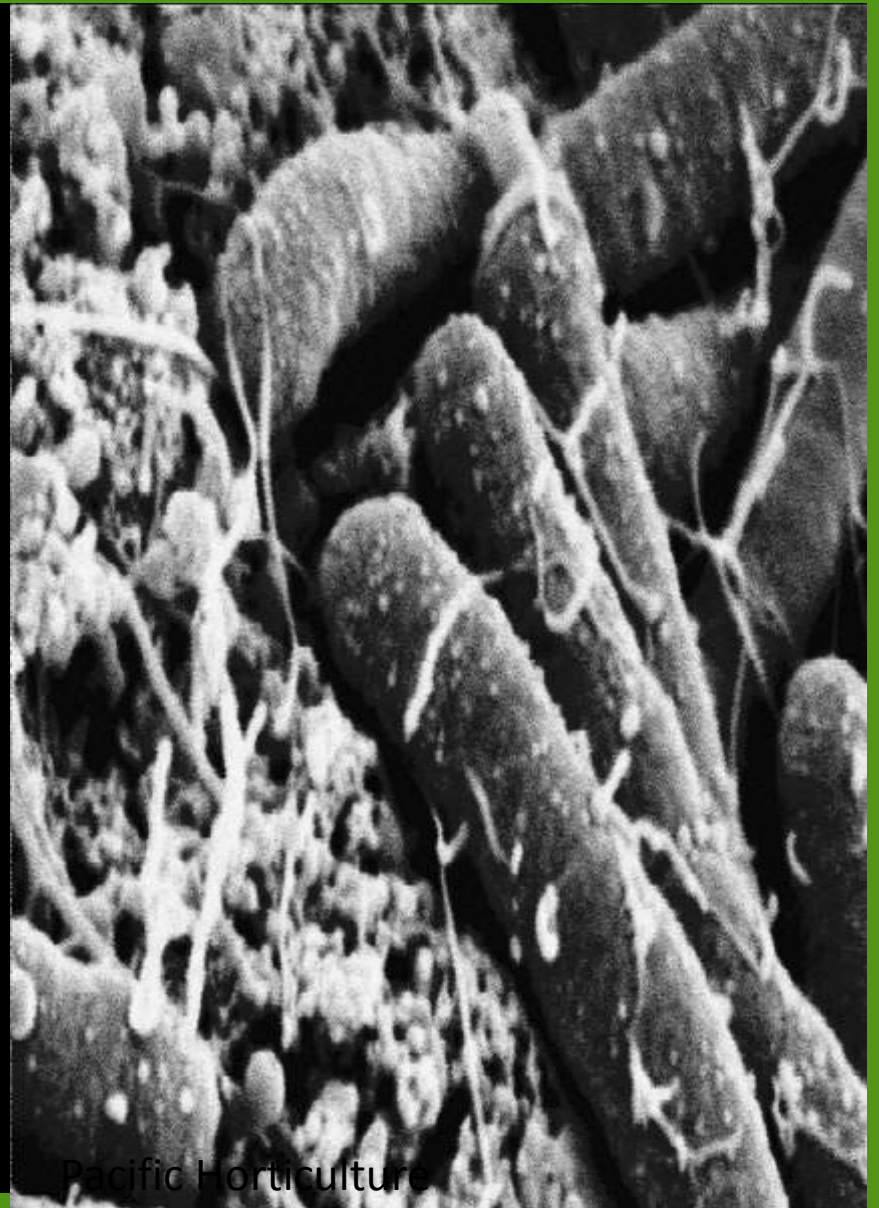
“The innately emotional affiliation of human beings to other living organisms.”

EO Wilson 1993

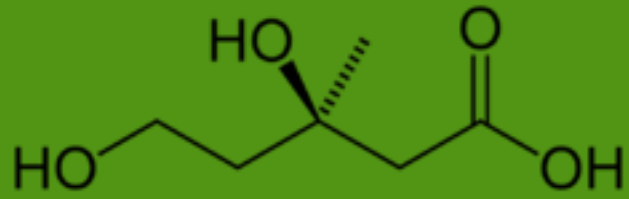




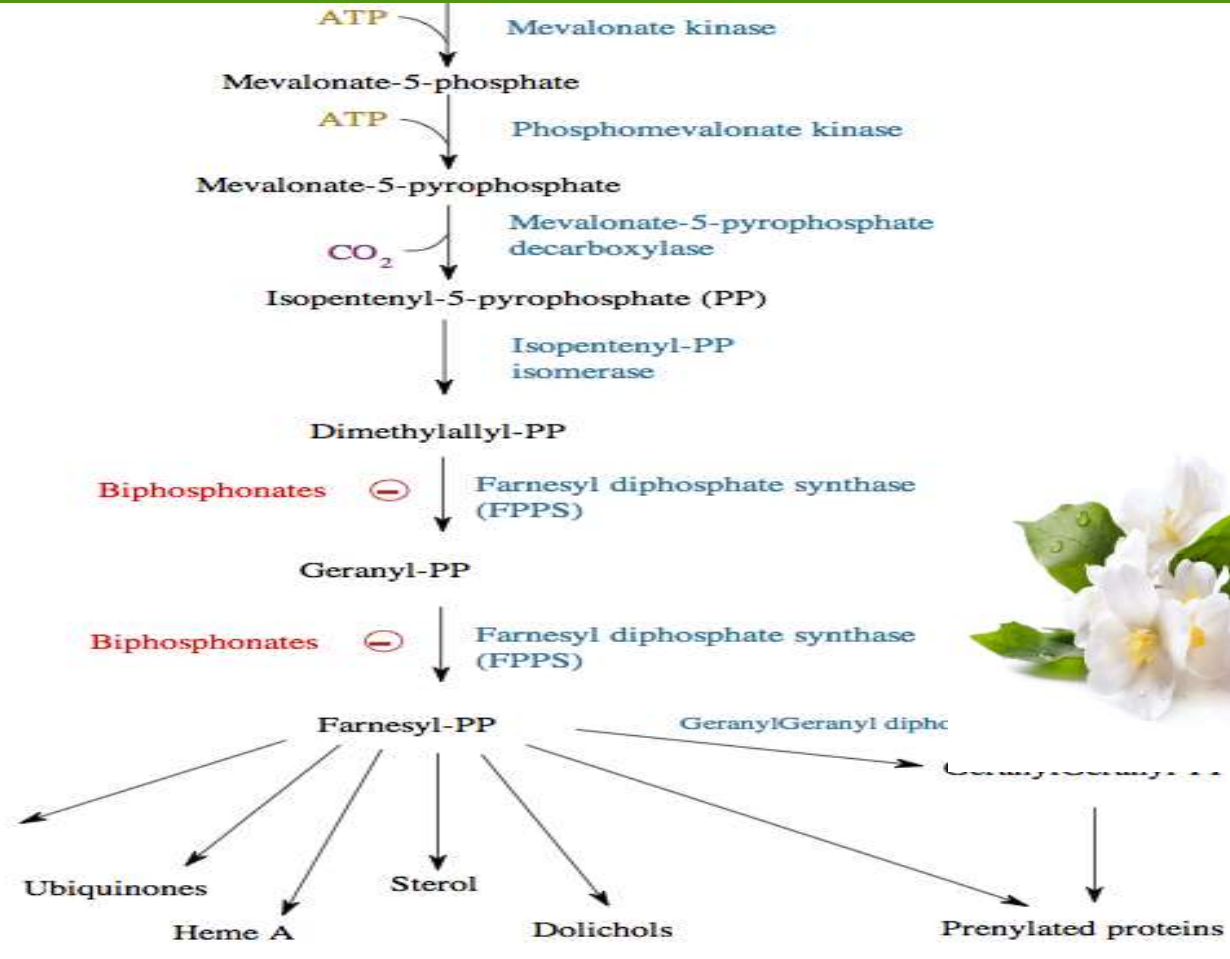
Sonnenburg Lab



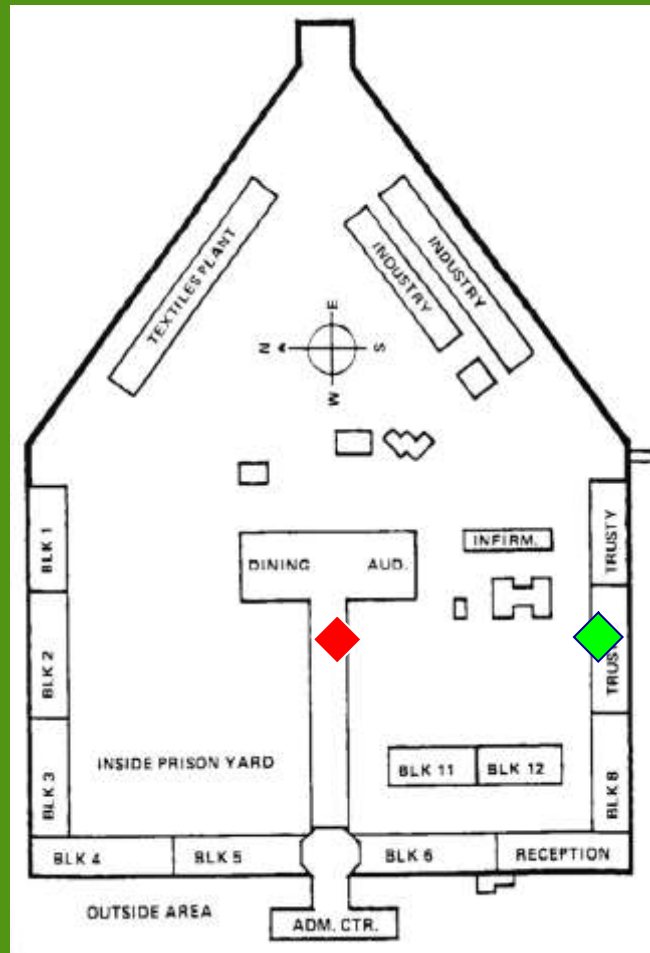
Pacific Horticulture



Mevalonic Acid



Sick call in Michigan Prison 24% higher for internal cells



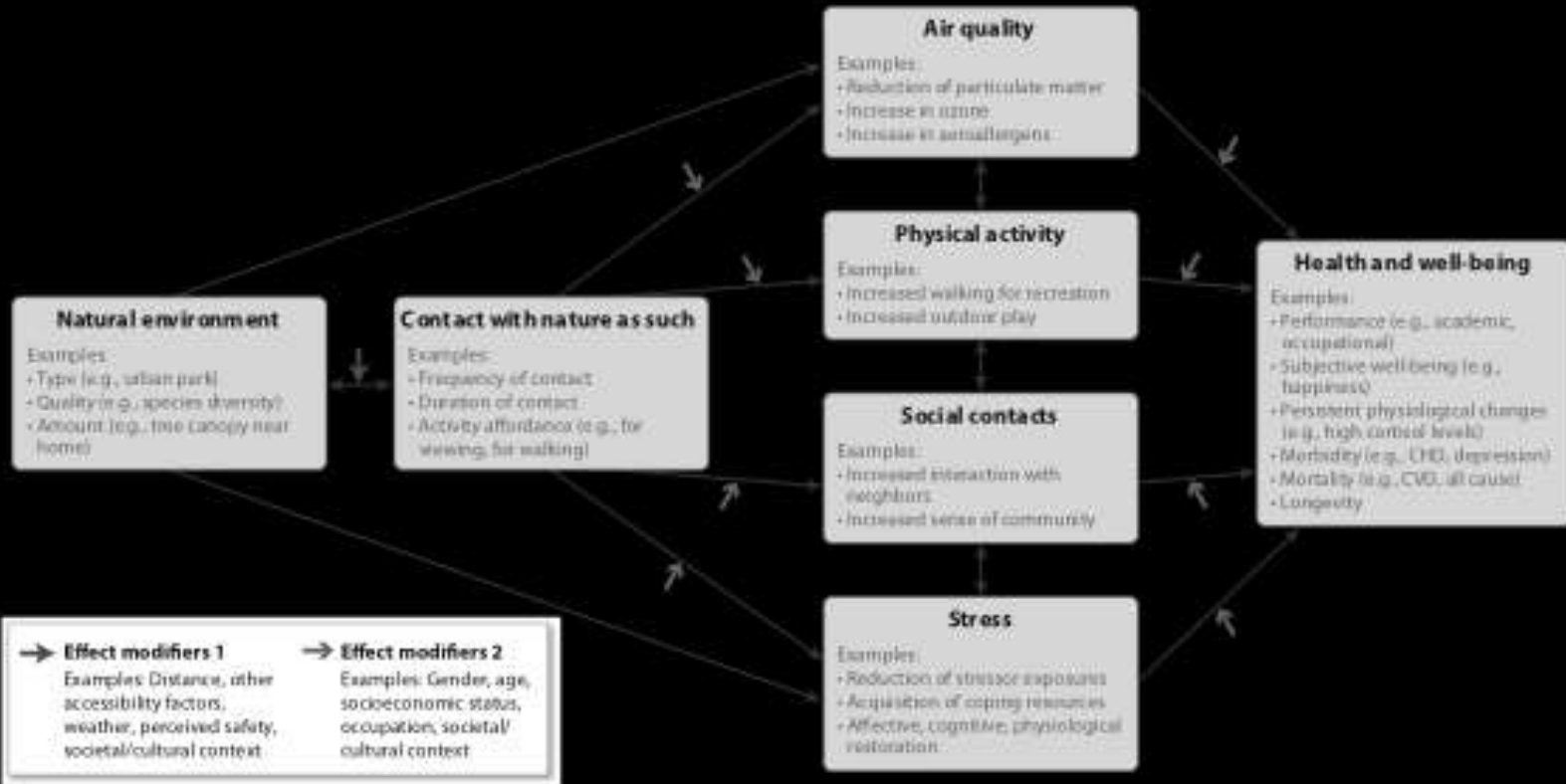


Figure 1

Children living in areas with more street trees have lower prevalence of asthma

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ABSTRACT

Background: The prevalence of childhood asthma in the USA increased by 50% from 1980 to 2000, with especially high prevalence in poor urban communities.

Methods: Data on the prevalence of asthma among children aged 4–5 years and on hospitalisations for asthma among children less than 15 years old were available for 42 health service catchment areas within New York City. Street tree counts were provided by the New York City Department of Parks and Recreation. The proximity to pollution sources, sociodemographic characteristics and population density for each area were also measured.

Results: Controlling for potential confounders, an increase in tree density of 1 standard deviation (SD) 343

source of pollen and may exacerbate asthma among children with atopic asthma.²¹

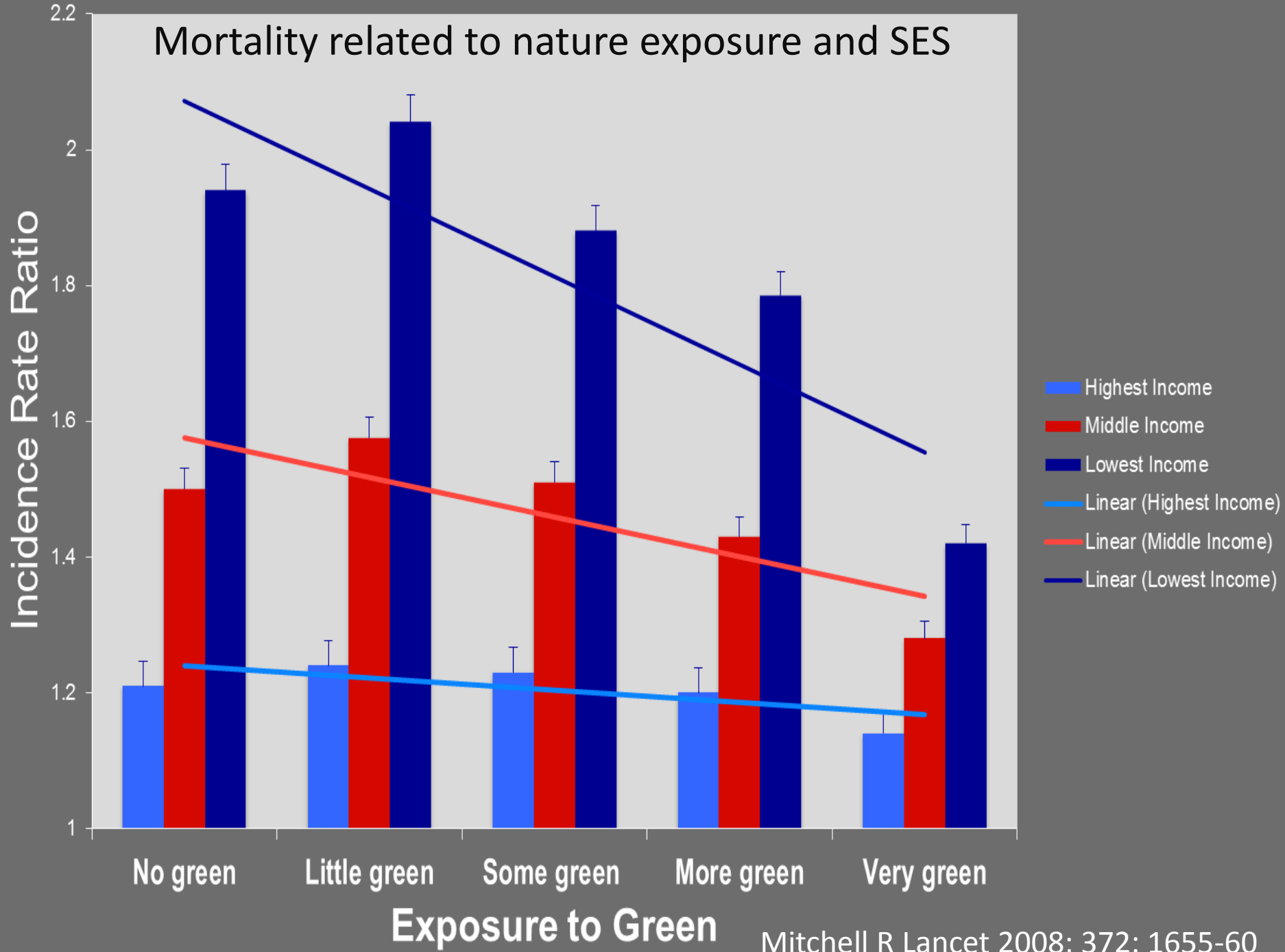
We conducted an ecological study in New York City with the objective of describing the direction and magnitude of any association between street trees and childhood asthma.

METHODS

The unit of analysis is the United Hospital Fund (UHF) area, originally designed to represent hospital catchment areas and still used for health statistics reports. The 42 UHF areas range in size from 3 to 67 km².

The prevalence of asthma for 4-year-old and 5-

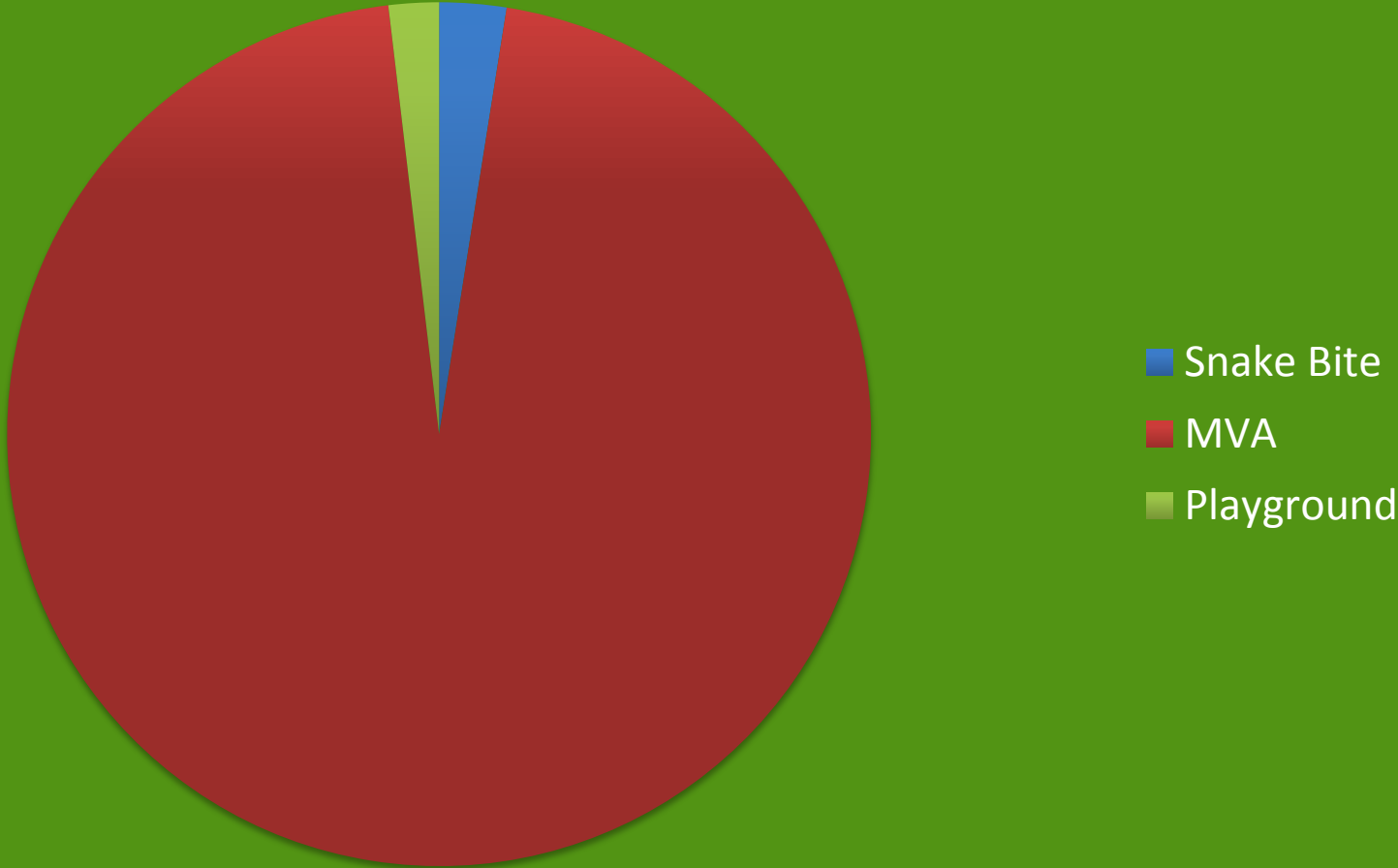
Mortality related to nature exposure and SES



Pub Med search

- Skin cancer
- Overexposure
- Fractures
- Venemous bites
- Lead exposure
- Allergies

ANNUAL ER VISITS IN THE US: CHILDREN 12 and Under



Playground vs Indoor dust



Element	Sample	n	N	Units	LOQ	min	P10	P25	P50
As	Indoor dust	473	3,461,008	µg/m ²	0.6	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	0.6	<LOQ	0.8	1.2	2.2
	Playground soil	315	2,518,808	µg/g	0.3	0.3	3.6	5.7	8.1
Cd	Indoor dust	473	346,1008	µg/m ²	0.8	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	0.8	<LOQ	<LOQ	<LOQ	<LOQ
	Playground soil	315	2,518,808	µg/g	0.7	<LOQ	<LOQ	<LOQ	<LOQ
Cr	Indoor dust	473	3,461,008	µg/m ²	10	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	10	<LOQ	<LOQ	<LOQ	14
	Playground soil	315	2,518,808	µg/g	7	<LOQ	13	19	25
Cu	Indoor dust	473	3,461,008	µg/m ²	32	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	32	<LOQ	<LOQ	<LOQ	49
	Playground soil	315	2,518,808	µg/g	26	<LOQ	<LOQ	<LOQ	<LOQ
Mn	Indoor dust	473	3,461,008	µg/m ²	64	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	64	<LOQ	<LOQ	<LOQ	99
	Playground soil	315	2,518,808	µg/g	13	<LOQ	157	257	391
Pb	Indoor dust	471	3,453,789	µg/m ²	2.0	<LOQ	2	4	9
	Playground dust	53	325,647	µg/m ²	2.0	6	11	17	32
	Playground soil	315	2,518,808	µg/g	1.3	2	12	17	27
Sb	Indoor dust	473	3,461,008	µg/m ²	0.8	<LOQ	<LOQ	<LOQ	<LOQ
	Playground dust	53	325,647	µg/m ²	0.8	<LOQ	<LOQ	1.4	2.0
	Playground soil	315	2,518,808	µg/g	0.7	<LOQ	<LOQ	<LOQ	0.7
Sr	Indoor dust	456	3,371,973	µg/m ²	8	8	8	8	10
	Playground dust	53	325,647	µg/m ²	8	30	34	53	86
	Playground soil	315	2,518,808	µg/g	7	<LOQ	10	18	54

Solutions



Medical Mile, Little Rock AK

Medical Mile

- Cost \$2.1 Million
- links to AK river trail
- economic benefit to city
- used by thousands each day

You do the math...

[Arkansas Average Inpatient Charges - Top 30 hospital stays \(pdf\)](#)

Average charges (prices) per patient for the Top 30 hospitalizations (DRGs) in AR, such as newborn and maternity delivery, psychoses, rehabilitation, heart failure, pneumonia, COPD, digestive disorders, hip or knee replacement, chest pain, cardiac cath, diabetes, asthma, stroke, hysterectomy (DRG 743), septicemia, Kidney failure, UTI, cellulitis and more. **Overall, prices were \$12,126 per case (\$2737 per day) in 2007.** For reference, a normal delivery for mother & baby cost \$7873 (add \$6466 for C-Section without complications); a 12.5-day rehabilitation stay cost \$21,628; hip or knee replacement averaged \$33,090 (\$9166 per day); drug-eluting stent DRG 247 was \$18,158 per day **for \$37,043 per case on average.** Huge file; slow download. Summer 2009 report (page 22) by the Arkansas Hospital Association shows 2007 prices. Consumers may expect higher prices in 2009

$$2,100,000 / 37,043 = 56$$

Can parks produce a 5% reduction in the burden
of cardiovascular disease?



\$25 billion annually in avoided healthcare
costs

Park Prescriptions





South East Heath Center Park Prescription



Green Schoolyards

www.educationoutside.org



Alice Fung Yu Elementary School San Francisco

Nature-Health Museum



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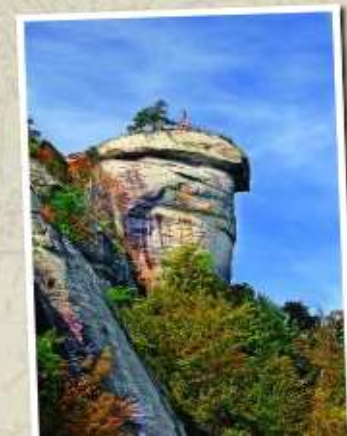
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Q & A

WORLD HEALTH DESIGN

ARCHITECTURE | CULTURE | TECHNOLOGY

Children's Hospitals: The Natural Prescription



The site has a natural fall

Identify your key resources for building nature-health bridges

- Health institutions
- Educational institutions
- Non profits
- Insurers
- Landscape designers, urban planners, architects
- Private corporations (sponsors)
- Media

PROGRAMS

[Crissy Field Center](#)

[Golden Gate Raptor Observatory](#)

[Institute at the Golden Gate](#)

[Native Plant Nurseries](#)

[Park Stewardship](#)

[Trails Forever](#)



TOOLKIT

Institute at the Golden Gate

The Institute at the Golden Gate contributes to a more sustainable and healthy world by harnessing the power of parks and public lands to advance environmental stewardship and human wellbeing.

Who We Are and What We Do: A program of the Golden Gate National Parks Conservancy in partnership with the National Park Service, the Institute fosters new ideas, shares best practices, encourages leadership, and supports and implements public policy changes that will benefit people and the planet.

Current Program Areas: The Institute is currently focused on how parks can connect to people's health, sustainable food systems, and climate change education. Since its launch in 2008, the Institute has helped shape national food policy and is implementing the groundbreaking "Healthy Parks Healthy People"

Parks: The New Climate Classroom



In the wake of releasing a new report, the Institute is building momentum for a two-day conference that will gather educators and park leaders to forge new ways to engage the

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