

# Making Healthy Living Medicine a Core Component of Health Professions Education

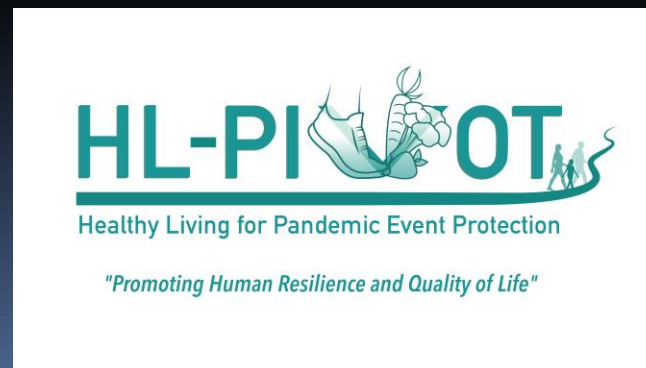
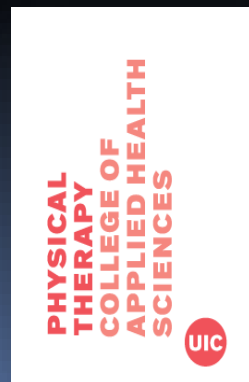
**Ross Arena, PhD, PT, FAHA, FESC, FACSM**

Professor and Head

College of Applied Health Sciences

University of Illinois at Chicago

Founder, HL-PIVOT



# CARDIOVASCULAR DISEASE

## THE WORLD'S NUMBER 1 KILLER

Cardiovascular diseases are a group of disorders of the heart and blood vessels, commonly referred to as **heart disease** and **stroke**.

**18.6** deaths every year from CVD  
**MILLION**



**33%**

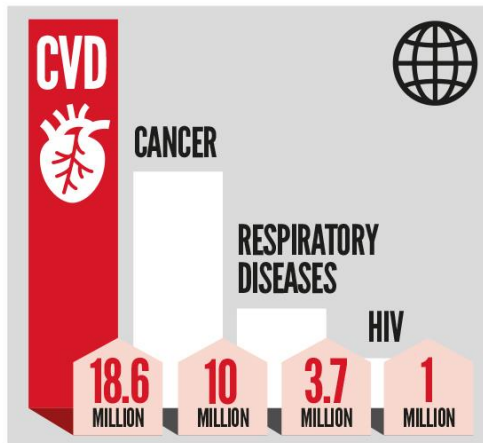
of all global deaths



**>75%**

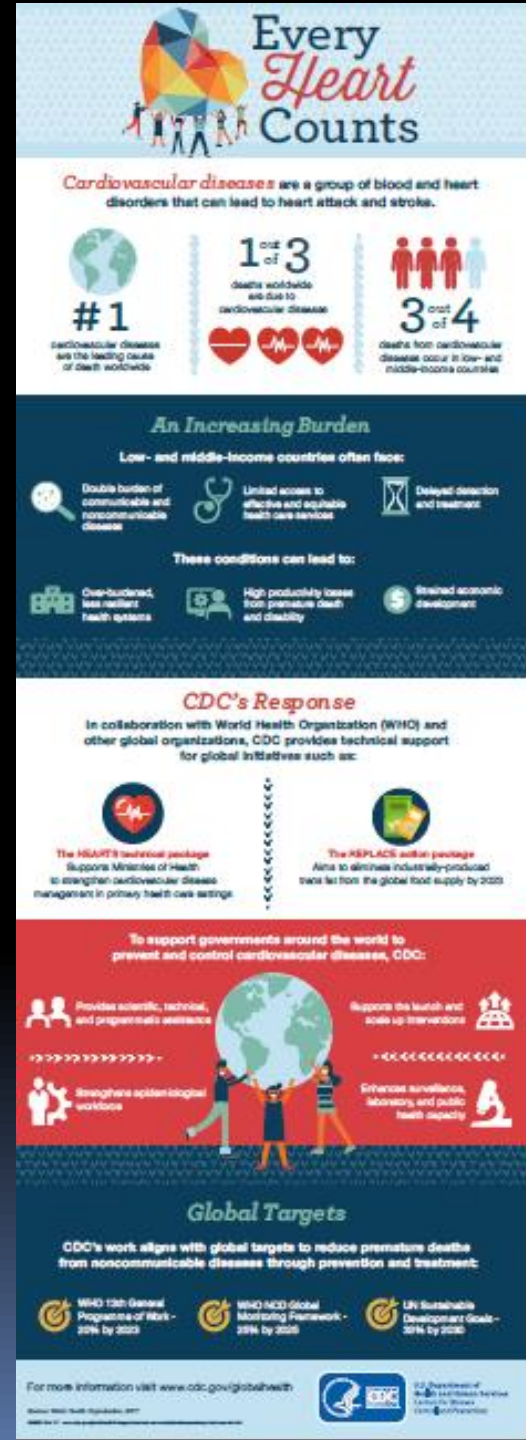
of CVD deaths take place in low- and middle-income countries

### GLOBAL CAUSES OF DEATH



### RISK FACTORS FOR CVD

-  High Blood Pressure
-  Unhealthy Diet
-  High Cholesterol
-  Diabetes
-  Overweight & Obesity
-  Tobacco
-  Air Pollution
-  Kidney Disease
-  Physical Inactivity
-  Harmful use of alcohol



## Every Heart Counts

Cardiovascular diseases are a group of blood and heart disorders that can lead to heart attack and stroke.

- #1** Cardiovascular disease is the leading cause of death worldwide.
- 1 out of 3** deaths worldwide are due to cardiovascular disease.
- 3 out of 4** deaths from cardiovascular disease occur in low- and middle-income countries.

### An Increasing Burden

Low- and middle-income countries often face:

- Double burden of communicable and noncommunicable diseases.
- Limited access to effective and equitable health care services.
- Delayed detection and treatment.

These conditions can lead to:

- Overburdened, less resilient health systems.
- High productivity losses from premature death and disability.
- Stalled economic development.

### CDC's Response

In collaboration with World Health Organization (WHO) and other global organizations, CDC provides technical support for global initiatives such as:

- The HEARTS technical package:** Supports Ministries of Health to strengthen cardiovascular disease management in primary health care settings.
- The REPLACE action package:** Aims to eliminate industrially-produced trans fat from the global food supply by 2023.

To support governments around the world to prevent and control cardiovascular diseases, CDC:


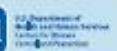
- Provides scientific, technical, and programmatic assistance.
- Supports the launch and scale-up interventions.
- Strengthens epidemiological workforce.
- Enhances surveillance, laboratory, and public health capacity.

### Global Targets

CDC's work aligns with global targets to reduce premature deaths from noncommunicable diseases through prevention and treatment:

- WHO 13th General Programme of Work - 2019 by 2025
- WHO NCD Global Monitoring Framework - 2019 by 2025
- UN Sustainable Development Goals - 2019 by 2030

For more information visit [www.cdc.gov/globalhealth](http://www.cdc.gov/globalhealth)



OPEN ACCESS

## Estimating the global economic benefits of physically active populations over 30 years (2020–2050)

Marco Hafner <sup>1</sup>, Erez Yerushalmi <sup>2</sup>, Martin Stepanek <sup>3,4</sup>, William Phillips,<sup>1</sup> Jack Pollard,<sup>5</sup> Advait Deshpande,<sup>1</sup> Michael Whitmore,<sup>1</sup> Francois Millard,<sup>6</sup> Shaun Subel,<sup>6</sup> Christian van Stolk<sup>1</sup>

**Results** Doing at least 150 min of moderate-intensity physical activity per week, as per lower limit of the range recommended by the 2020 WHO guidelines, would lead to an increase in global gross domestic product (GDP) of 0.15%–0.24% per year by 2050, worth up to US\$314–446 billion per year and US\$6.0–8.6 trillion cumulatively over the 30-year projection horizon (in 2019 prices). The results vary by country due to differences in baseline levels of physical activity and GDP per capita.

# Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy

*I-Min Lee, Eric J Shiroma, Felipe Lobelo, Pekka Puska, Steven N Blair, Peter T Katzmarzyk, for the Lancet Physical Activity Series Working Group\**

Worldwide, we estimate that physical inactivity causes 6% of the burden of disease from coronary heart disease, 7% of type 2 diabetes, 10% of breast cancer, and 10% of colon cancer. Inactivity causes 9% of premature mortality, or more than 5.3 million of the 57 million deaths that occurred worldwide in 2008. If inactivity were not eliminated, but decreased instead by 10% or 25%, more than 533 000 and more than 1.3 million deaths, respectively, could be averted every year.



American Heart Association.  
My Life Check®



- Seven health factors and lifestyle behaviors that support ideal cardiovascular health
- One simple **Heart Health Score (0-10 points)** to help participants know where they stand
- Higher score positively associated with improved overall health including diabetes, cancer, stress, and depression
- Science-based metric

## The Need of a Global Healthy Living Medicine Strategy

Ross Arena and Bruno P. C. Smirmaul

Many countries around the world are in the midst of a chronic disease health crisis

Neurocognitive Conditions  
Cardiovascular Diseases  
Respiratory Diseases  
Certain Cancers  
Diabetes...

Healthcare Systems  
Unsustainability

**Healthy Living Medicine** is the key to preventing and treating chronic diseases

### AHA Life's Simple 7 (LS7)

Seven Key Healthy Living Characteristics

Stop Smoking

Eat Better

Get Active

Manage Weight

Manage Blood Pressure

Control Cholesterol

Control Blood Sugar

It is not all or none!

**Poor** Intermediate **Ideal**

**Examples** Walking 2 days/week for 20 minutes is better than being sedentary

Something is better than nothing! Eating 2-3 servings of fruits and vegetables is better than none

**Eating Better and Moving More** are the main advices in addressing the LS7

Number of LS7 Characteristics	0	1	2	3	4	5	6	7
<b>Health Continuum</b>	Poor			Intermediate			Ideal	
All-Cause Mortality	[4 icons]			[7-61%]			[23-79%]	
CVD Mortality	[4 hearts]			[23-81%]			[42-90%]	
Health Care Resource Utilization	[4 pills]			[19-27%]			[23-44%]	
Annual Health Care Expenditure	[4 dollars]			[13%]			[30%]	

**PARADIGM SHIFT NEEDED**

**HISTORICAL HEALTHCARE MODEL**

Reactive  
Focus on treating chronic diseases

Promote LS7 pervasively throughout society

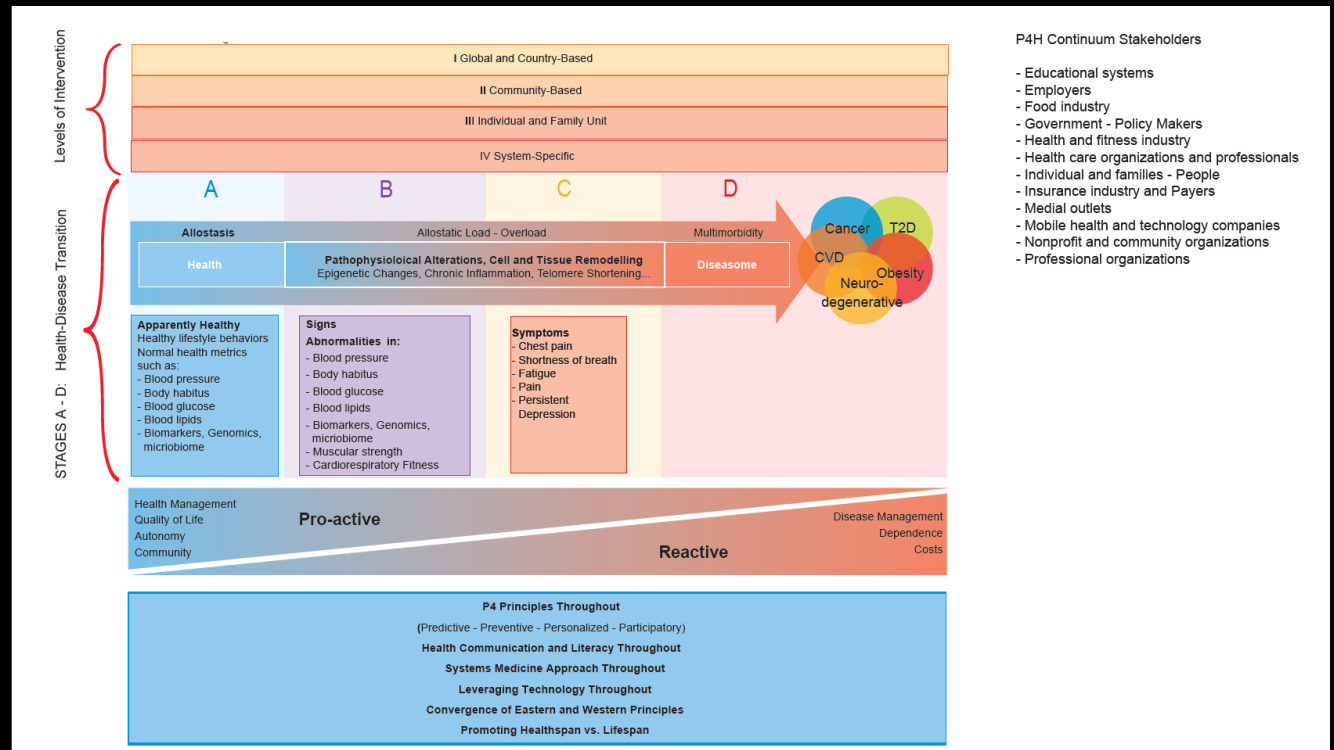
Creating, implementing, and sustaining Healthy Living Initiatives on a global scale is urgently needed

**HEALTHY LIVING MEDICINE STRATEGY**

Pro-active  
Focus on preventing chronic diseases

- Professional Organizations
- Educational Systems
- Government
- Health Care Organizations
- Practitioners
- Media
- Industry
- Individuals and Families

powered by **PIKTOCHART**



Progress in Cardiovascular Diseases. Prog Cardiovasc Dis. 2017 Mar-Apr;59(5):506-521

# The COVID-19 Pandemic Era

Article

## Impact of COVID-19 Lockdown on Physical Activity in a Sample of Greek Adults

Dimitrios I. Bourdas <sup>1,\*</sup> and Emmanouil D. Zacharakis <sup>2</sup>

## Changes in the clustering of unhealthy movement behaviors during the COVID-19 quarantine and the association with mental health indicators among Brazilian adults

André O. Werneck, <sup>1</sup> Danilo R. Silva, <sup>2</sup> Deborah C. Malta, <sup>3</sup> Paulo R. B. Souza-Júnior, <sup>4</sup> Luiz O. Azevedo, <sup>4</sup> Marilisa B. A. Barros, <sup>3</sup> Célia L. Szwarcwald <sup>4</sup>

Article

## COVID-19 Pandemic Brings a Sedentary Lifestyle in Young Adults: A Cross-Sectional and Longitudinal Study

Chen Zheng <sup>1</sup>, Wendy Yajun Huang <sup>2</sup>, Sinead Sheridan <sup>1</sup>, Cindy Hui-Ping Sit <sup>1</sup>, Xiang-Ke Chen <sup>3</sup> and Stephen Heung-Sang Wong <sup>1,\*</sup>

COMMENTARY

Open Access

## COVID-19 pandemic-induced physical inactivity: the necessity of updating the Global Action Plan on Physical Activity 2018-2030

H. Amini <sup>1\*</sup>, S. Habibi <sup>2</sup>, A. H. Islamoglu <sup>3</sup>, E. Isanejad <sup>4</sup>, C. Uz <sup>5</sup> and H. Daniyari <sup>4</sup>



ORIGINAL ARTICLE



## The Deconditioning Effect of the COVID-19 Pandemic on Unaffected Healthy Children

Jeffrey D. Dayton <sup>1,2</sup>, Kelley Ford <sup>1,2</sup>, Sheila J. Carroll <sup>1,2</sup>, Patrick A. Flynn <sup>1,2</sup>, Sultana Kourtidou <sup>1,2</sup>, Ralf J. Holzer <sup>1,2</sup>

Article

## Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey

Achraf Ammar <sup>1,2,\*</sup>, Michael Brach <sup>3,4</sup>, Khaled Trabelsi <sup>4,5,6</sup>, Hamdi Tchoutrou <sup>4,6</sup>, Omar Boukhris <sup>4,6</sup>, Liwa Masmoudi <sup>4</sup>, Bassem Bouaziz <sup>7</sup>, Ellen Bentlage <sup>3</sup>, Daniella How <sup>3</sup>, Mona Ahmed <sup>3</sup>, Patrick Müller <sup>8,9</sup>, Notger Müller <sup>8,9</sup>, Asma Aloui <sup>6,10</sup>, Omar Hammouda <sup>2</sup>, Laís Liane Paineiras-Domingos <sup>11,12</sup>, Annemarie Braakman-Jansen <sup>13</sup>, Christian Wrede <sup>13</sup>, Sofia Bastoni <sup>13,14</sup>, Carlos Soares Pernambuco <sup>15</sup>, Leonardo Mataruna <sup>16</sup>, Morteza Taheri <sup>17</sup>, Khadijeh Irandoust <sup>17</sup>, Aïmen Khacharem <sup>18</sup>, Nicola L. Bragazzi <sup>19,20</sup>, Karim Chamari <sup>21,22</sup>, Jordan M. Glenn <sup>23</sup>, Nicholas T. Bott <sup>24</sup>, Faiez Gargouri <sup>7</sup>, Lotfi Chaari <sup>25</sup>, Hadi Batatia <sup>25</sup>, Gamal Mohamed Ali <sup>26</sup>, Osama Abdelkarim <sup>26,27</sup>, Mohamed Jarraya <sup>4</sup>, Kais El Abed <sup>4</sup>, Nizar Souissi <sup>6</sup>, Lisette Van Gemert-Pijnen <sup>13</sup>, Bryan L. Riemann <sup>28</sup>, Laurel Riemann <sup>29</sup>, Wassim Moalla <sup>4</sup>, Jonathan Gómez-Raja <sup>30</sup>, Monique Epstein <sup>31</sup>, Robbert Sanderman <sup>32</sup>, Sebastian V. W. Schulz <sup>33</sup>, Achim Jerig <sup>33</sup>, Ramzi Al-Horani <sup>34</sup>, Taiyisir Mansi <sup>35</sup>, Mohamed Jmail <sup>36</sup>, Fernando Barbosa <sup>37</sup>, Fernando Ferreira-Santos <sup>37</sup>, Boštjan Šimunčič <sup>38</sup>, Rado Pišot <sup>38</sup>, Andrea Gaggioli <sup>14,39</sup>, Stephen J. Bailey <sup>40</sup>, Jürgen M. Steinacker <sup>33</sup>, Tarak Driss <sup>41</sup>, Anita Hoekelmann <sup>1</sup> and On Behalf of the ECLB-COVID19 Consortium <sup>1,19</sup>

RESEARCH ARTICLE

Open Access

## Early effects of the COVID-19 pandemic on physical activity and sedentary behavior in children living in the U.S.



Genevieve F. Dunton <sup>1,2\*</sup>, Bridgette Do <sup>1</sup> and Shirlene D. Wang <sup>1</sup>


Article

## Effects of COVID-19 Lockdown on Physical Activity, Sedentary Behavior, and Satisfaction with Life in Qatar: A Preliminary Study

Souhail Hermassi <sup>1,\*</sup>, Maha Sellami <sup>1</sup>, Ahmad Salman <sup>1</sup>, Abdulla S. Al-Mohannadi <sup>2,3</sup>, El Ghali Bouhafs <sup>4</sup>, Lawrence D. Hayes <sup>5</sup> and René Schwesig <sup>6</sup>



# Physical inactivity is associated with a higher risk for severe COVID-19 outcomes: a study in 48 440 adult patients

Robert Sallis ,<sup>1</sup> Deborah Rohm Young,<sup>2</sup> Sara Y Tartof,<sup>2</sup> James F Sallis,<sup>3</sup> Jeevan Sall,<sup>1</sup> Qiaowu Li,<sup>2</sup> Gary N Smith,<sup>4</sup> Deborah A Cohen<sup>2</sup>

## Summary box

### What are the findings?

- ▶ Patients with COVID-19 who were consistently inactive during the 2 years preceding the pandemic were more likely to be hospitalised, admitted to the intensive care unit and die than patients who were consistently meeting physical activity guidelines.
- ▶ Other than advanced age and a history of organ transplant, physical inactivity was the strongest risk factor for severe COVID-19 outcomes.
- ▶ Meeting US Physical Activity Guidelines was associated with substantial benefit, but even those doing some physical activity had lower risks for severe COVID-19 outcomes including death than those who were consistently inactive.

### How might it impact on clinical practice in the future?

- ▶ The potential for habitual physical activity to lower COVID-19 illness severity should be promoted by the medical community and public health agencies.
- ▶ Pandemic control recommendations should include regular physical activity across all population groups.



🏠 Your Health

About COVID-19 +

COVID-19 by County

Variants of the Virus +

Symptoms +

Testing +

Contact Tracing +

Prevent Getting Sick +

If You Are Sick +

Specific Groups of People -

Families & Children +

## People with Certain Medical Conditions

Updated Feb. 25, 2022 Languages Print

If you or your family member are at high risk for severe illness, wear a mask or respirator with greater protection in public indoor spaces if you are in an area with a high COVID-19 Community Level. Talk with your healthcare provider about wearing a mask in a medium [COVID-19 Community Level](#).

If you test positive and are an older adult or someone who is at [high risk](#) of getting very sick from COVID-19, [treatment may be available](#). Contact a healthcare provider right away after a positive test to determine if you are eligible, even if your symptoms are mild right now. You can also visit a [Test to Treat location](#) and, if eligible, receive a prescription from a provider. Don't delay: Treatment must be started within the first few days to be effective.



## Overweight and obesity

Overweight (defined as a [body mass index \(BMI\)](#) is 25 kg/m<sup>2</sup> or higher, but under 30 kg/m<sup>2</sup>), obesity (BMI is 30 kg/m<sup>2</sup> or higher, but under 40 kg/m<sup>2</sup>), or severe obesity (BMI is 40 kg/m<sup>2</sup> or higher), can make you more likely to get very sick from COVID-19. The risk of severe illness from COVID-19 increases sharply with higher BMI.

Get more information:

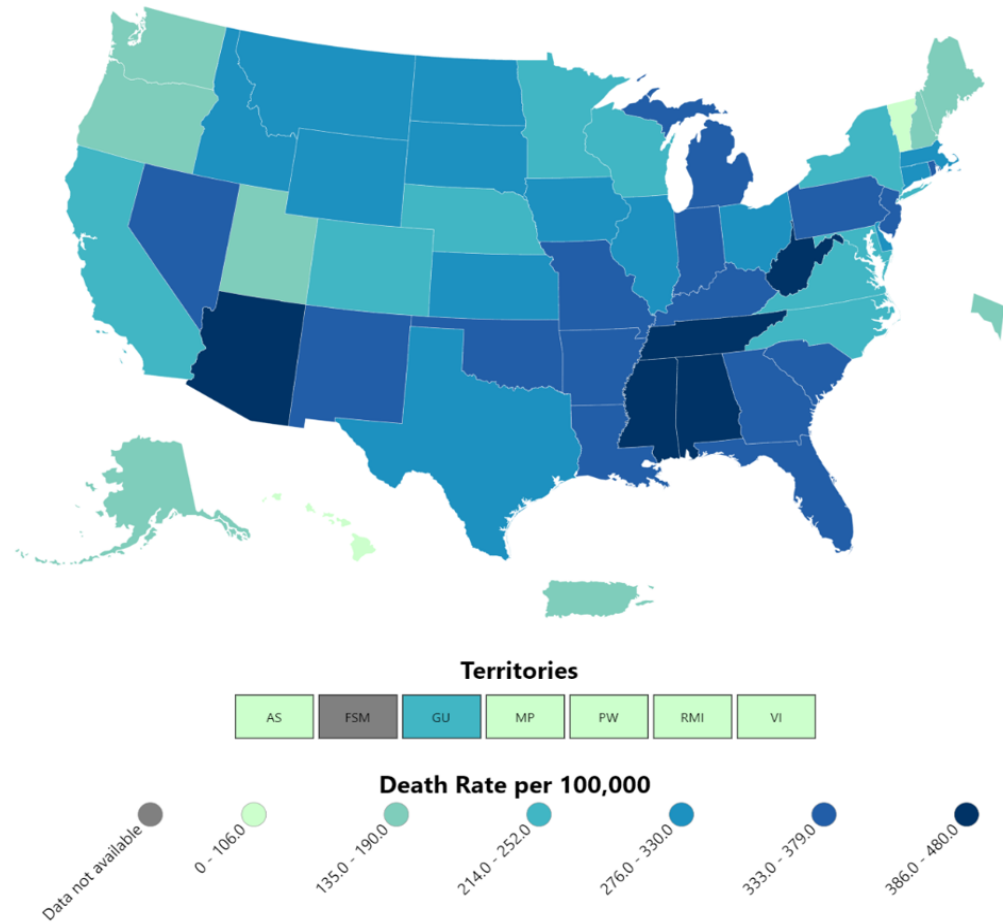
- [Overweight & Obesity | CDC](#)
- [Obesity, Race/Ethnicity, and COVID-19](#)
- [Obesity Action Coalition: COVID-19 and Obesity](#)

## Physical inactivity

People who do little or no physical activity are more likely to get very sick from COVID-19 than those who are physically active. Being physically active is important to being healthy. Get more information on physical activity and health, physical activity recommendations, how to become more active, and how to create activity-friendly communities:

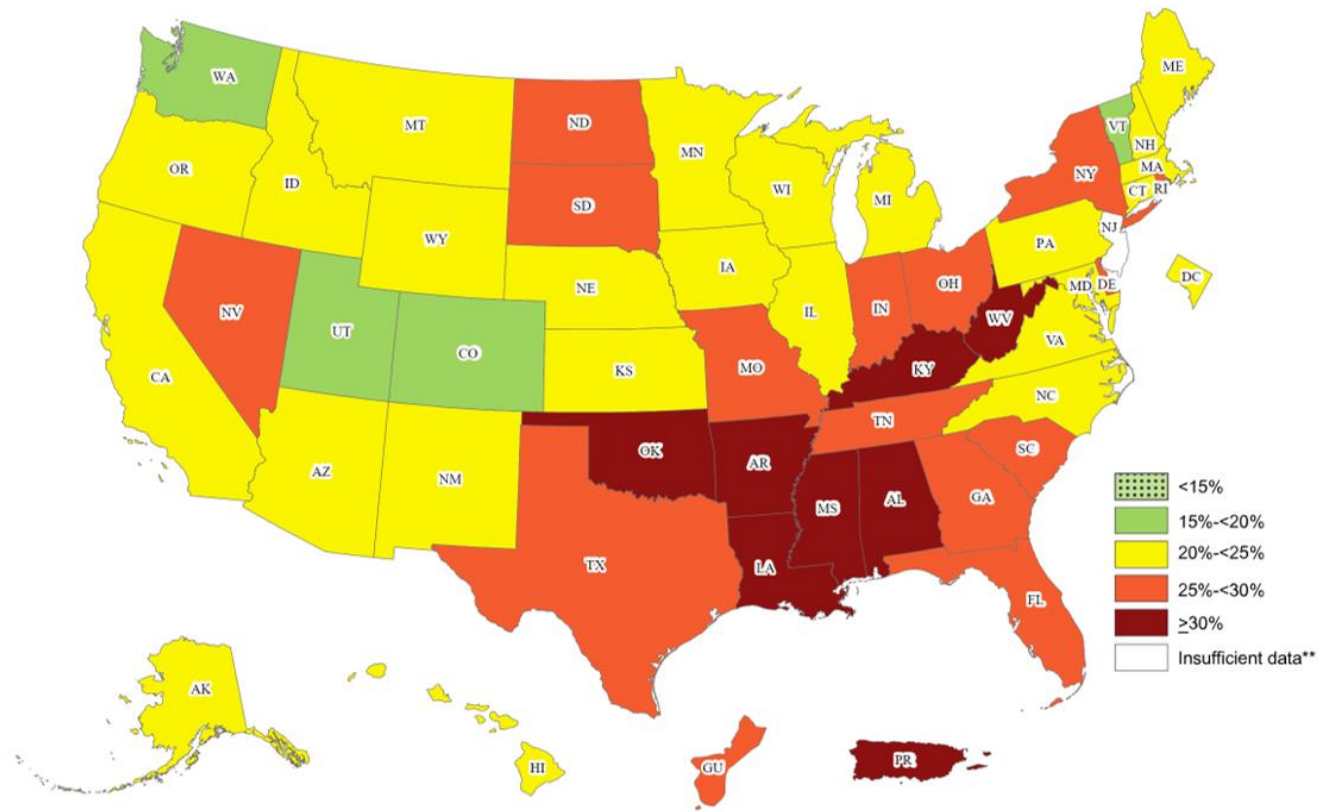
- [Physical Activity](#)
- [Physical Activity Guidelines for Americans, 2nd edition](#)
- [Move Your Way®](#)
- [Active People, Healthy Nation <sup>SM</sup>: Strategies to Increase Physical Activity](#)
- [National Center on Health, Physical Activity and Disability – Building Healthy Inclusive Communities](#)

**Figure 1: COVID-19 Death Rate in the US Reported to the CDC, by State/Territory**  
 (deaths per 100,000)



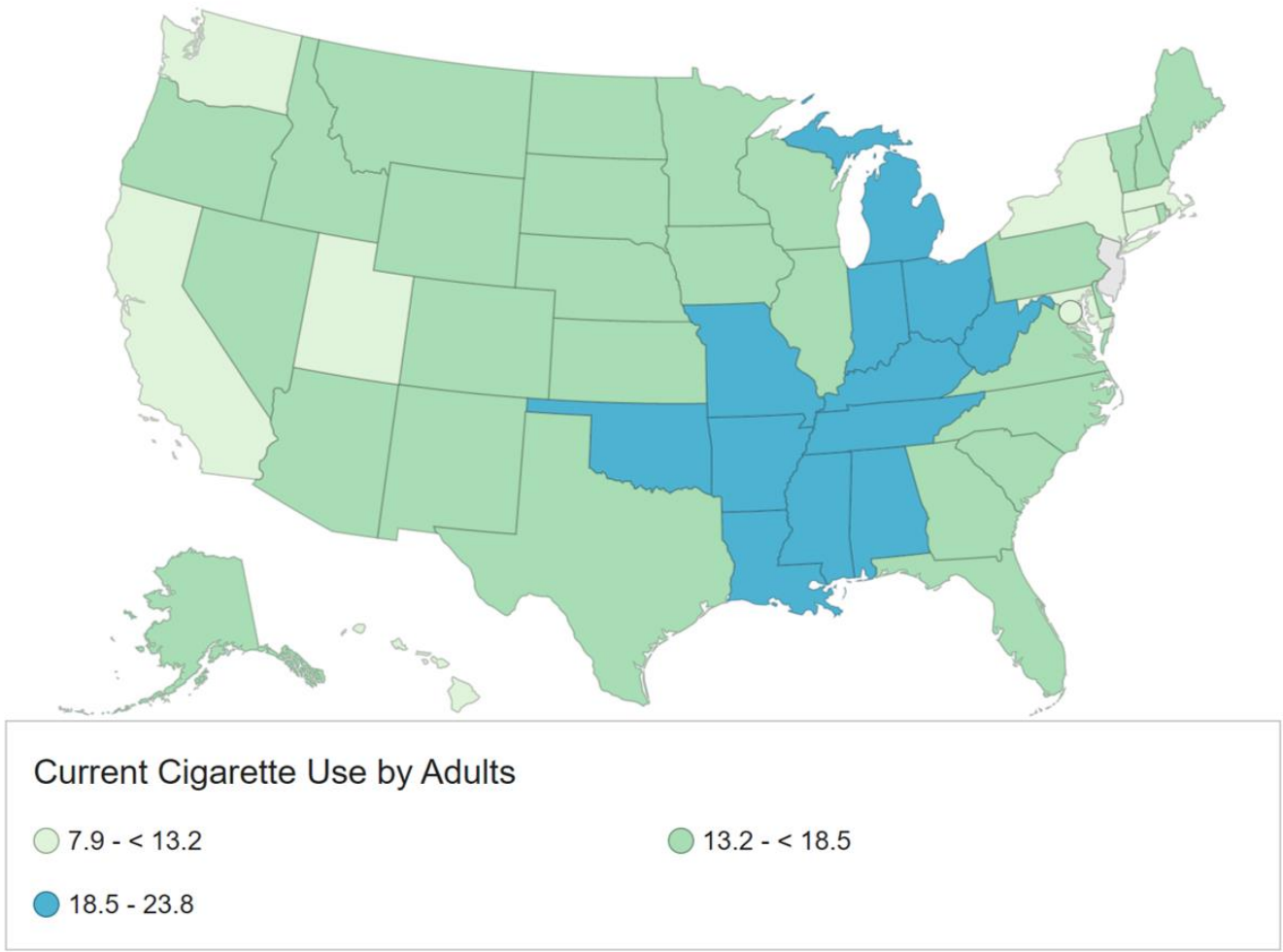
Source: CDC: [https://covid.cdc.gov/covid-data-tracker/#cases\\_deathsper100k](https://covid.cdc.gov/covid-data-tracker/#cases_deathsper100k)

**Figure 2: Prevalence of Self-Reported Physical Inactivity Among US Adults, Behavior Risk Factor Surveillance System, 2017–2020**



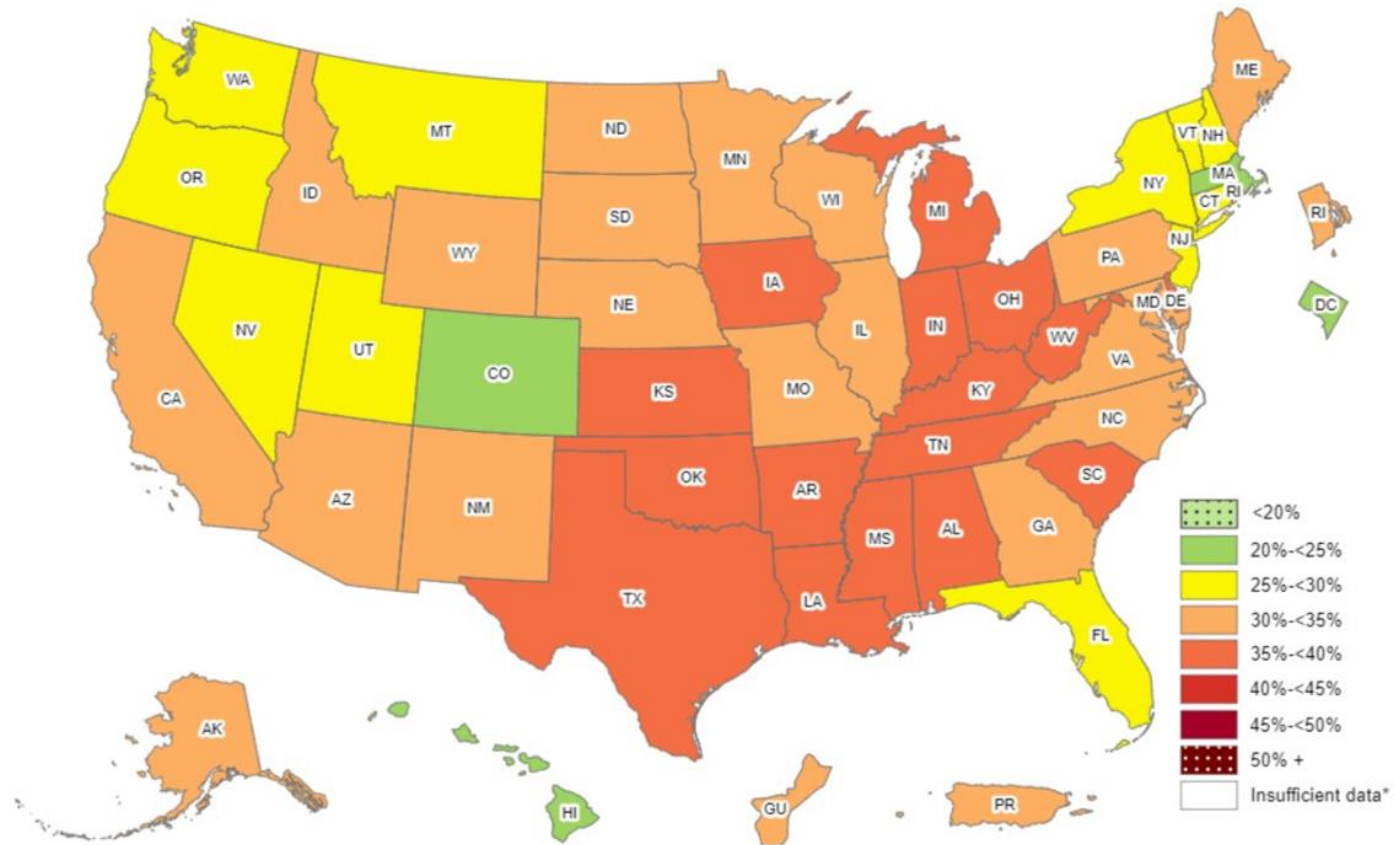
Source: CDC: <https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#overall>

**Figure 3: Current Cigarette Use Among Adults, Behavior Risk Factor Surveillance System, 2019**



Source: CDC: <https://www.cdc.gov/statesystem/cigaretteuseadult.html>

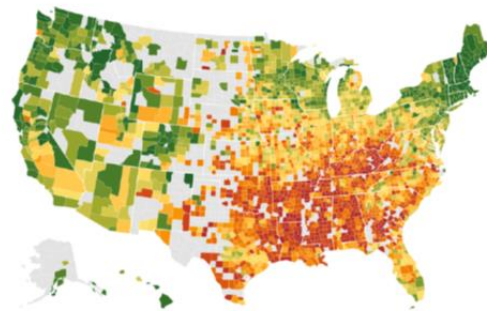
**Figure 4: Prevalence of Self-Reported Obesity Among US Adults, Behavior Risk Factor Surveillance System, 2020**



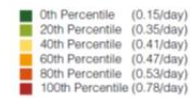
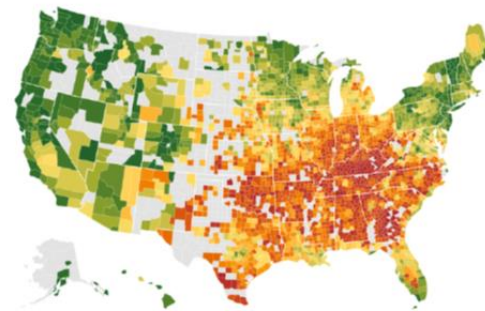
Source: CDC: <https://www.cdc.gov/obesity/data/prevalence-maps.html#overall>

**Figure 5: Dietary Habits and Body Mass Index Status Across the United States**

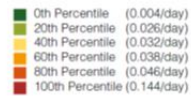
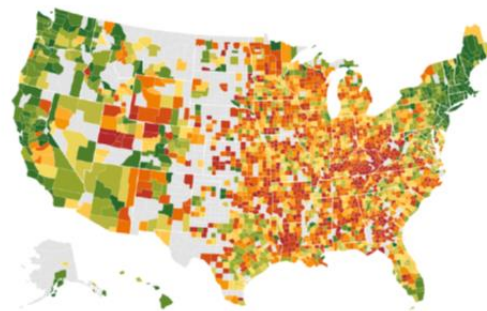
**Average Fresh Fruits and Vegetables Entries Logged Per Day**



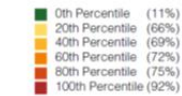
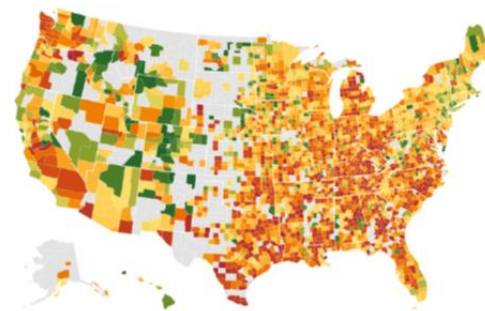
**Average Fast Food Entries Logged Per Day**



**Average Soda Entries Logged Per Day**

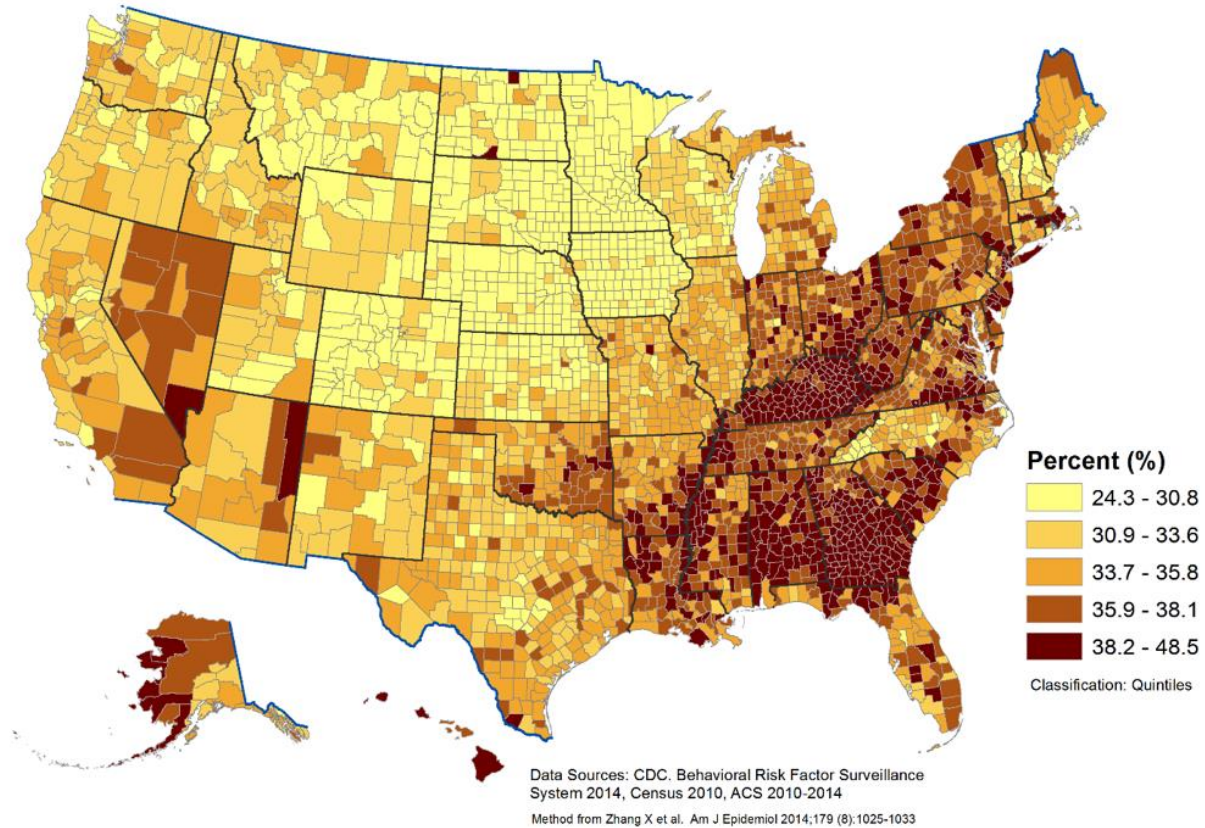


**Fraction Affected by Overweight/Obesity (BMI 25+)**



**Source:** Althoff T, Nilforoshan H, Hua J and Leskovec J. Large-scale diet tracking data reveal disparate associations between food environment and diet. *Nature communications*. 2022;13:267.

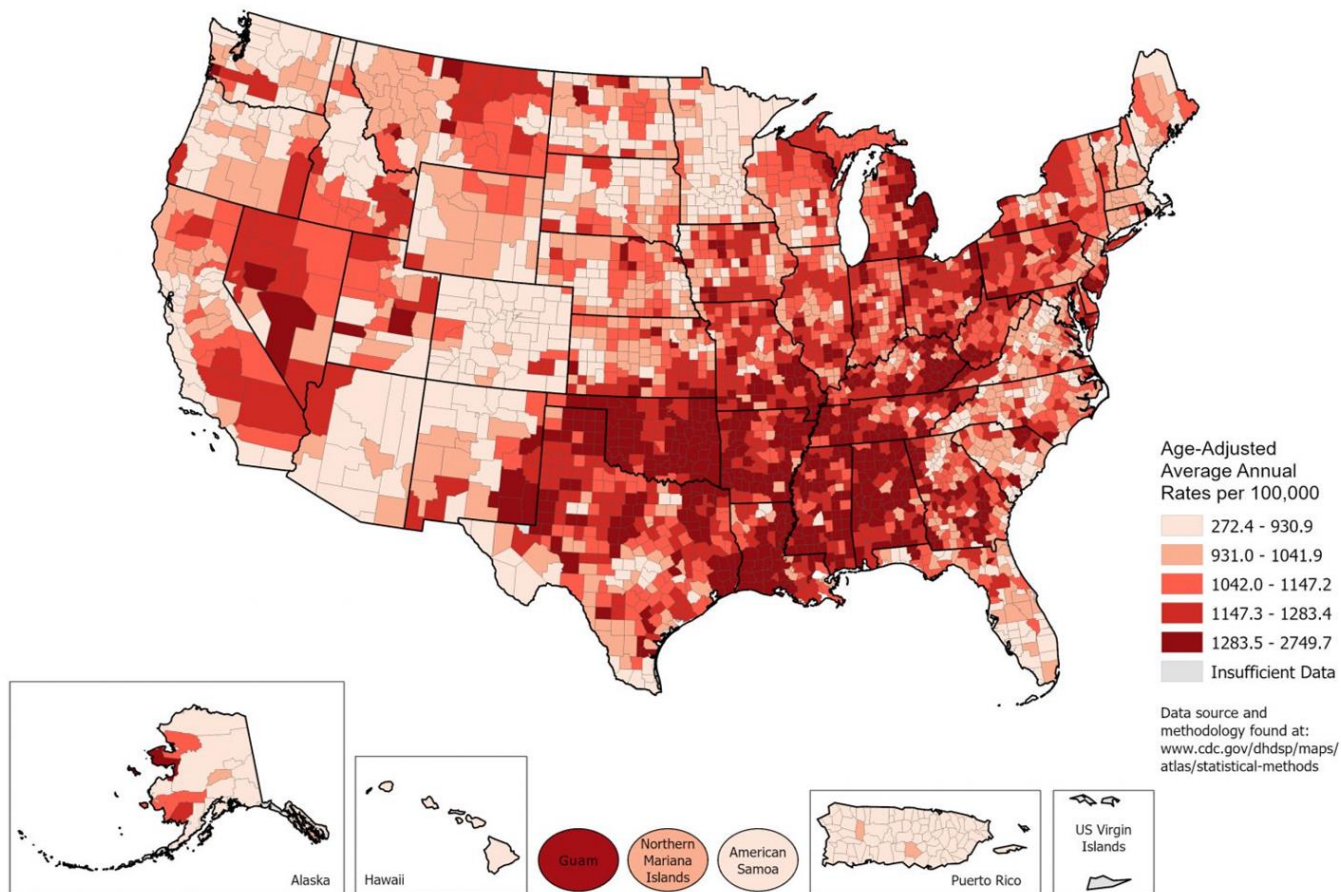
**Figure 6: Prevalence of Short Sleep Duration (<7 hours) for Adults Aged  $\geq 18$  Years, by County, United States, 2014**



Source: CDC: [https://www.cdc.gov/sleep/data\\_statistics.html](https://www.cdc.gov/sleep/data_statistics.html)

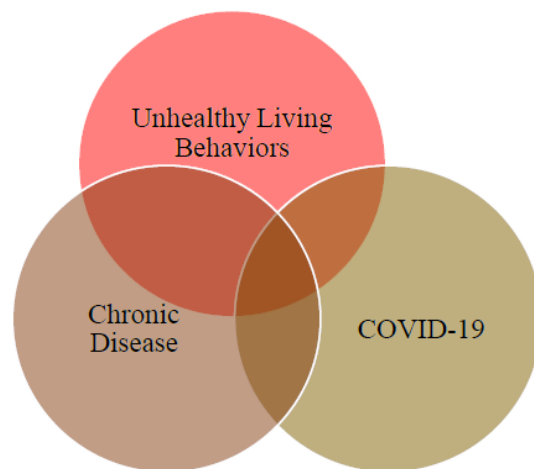


**Figure 7: Heart Disease Death Rates, 2017 – 2019 Adults, Ages 65+, by County**

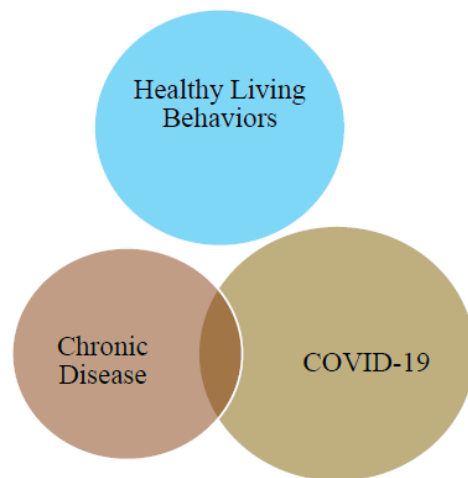


Source: CDC: [https://www.cdc.gov/dhdsp/maps/national\\_maps/hd65\\_all.htm](https://www.cdc.gov/dhdsp/maps/national_maps/hd65_all.htm)

**Figure 3a: The Syndemic of Unhealthy Living Behaviors, Chronic Disease and COVID-19**



**Figure 3b: Syndemic Uncoupling Through Healthy Living Behaviors**



Arena R, Myers J, Kaminsky LA, Williams M, Sabbahi A, Popovic D, Axtell R, Faghy MA, Hills AP, Olivares SL, Lopez M, Pronk NP, Laddu D, Babu AS, Josephson R, Whitsel LP, Severin R, Christle JW, Dourado VZ, Niebauer J, Savage P, Austford LD, Lavie CJ, On Behalf of the HL-PIVOT Network. Current activities centered on healthy living and recommendations for the future: A position statement from the HL-PIVOT Network. *Current Problems in Cardiology*. 2021;46:100823.

# Healthy Living Educational Models for Health Professionals

## **AHA SCIENTIFIC STATEMENT**

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# **Medical Training to Achieve Competency in Lifestyle Counseling: An Essential Foundation for Prevention and Treatment of Cardiovascular Diseases and Other Chronic Medical Conditions**

**A Scientific Statement From the American Heart Association**

Marie-France Hivert, MD,  
MMSc, FAHA, Chair  
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Daniel E. Forman, MD  
Penny M. Kris-Etherton,  
PhD, FAHA  
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Russell R. Pate, PhD, FAHA  
Bonnie Spring, PhD, FAHA  
Jennifer Trilk, PhD  
Linda V. Van Horn, PhD,  
FAHA  
William E. Kraus, MD, FAHA  
On behalf of the American  
Heart Association Physi-  
cal Activity Committee  
of the Council on Life-  
style and Cardiometab-  
olic Health; the Behavior  
Change Committee, a  
joint committee of the  
Council on Lifestyle  
and Cardiometabolic  
Health and the Council  
on Epidemiology and  
Prevention; the Exercise,  
Cardiac Rehabilitation,  
and Secondary Preven-  
tion Committee of the  
Council on Clinical Car-  
diology; and the Council  
on Cardiovascular and  
Stroke Nursing

**Table 1. Learning Objectives for Behavioral Sciences Knowledge and Skills Development During Undergraduate Medical Training**

Domains	Learning Objectives
Knowledge	Describe counseling steps that foster behavioral change
	Describe a patient-centered approach and core concepts of major behavior change theories
	Recognize the expertise of the behavioral counselor and distinguish health professionals who have expertise in supporting specific types of lifestyle behavioral change
Skills	Assess lifestyle behaviors and patients' confidence and readiness to make changes
	Demonstrate effective patient-centered communication skills to help the patient set behavior change goals and establish a plan
	Use appropriate behavior change techniques, such as goal setting, self-monitoring, and reinforcement, to support patients in making healthy lifestyle changes
	Appropriately adapt counseling to patients' age, sex, race or ethnicity, culture, and preferences
	Refer to a behavioral counselor or other healthcare professionals with behavioral expertise when appropriate

**Table 2. Learning Objectives for Nutritional Assessment and Counseling During Undergraduate Medical Training**

Domains	Learning Objectives
Nutrition assessment	Describe health benefits of recommended dietary patterns and current dietary guidelines for maintenance of health and for the prevention and treatment of diverse medical conditions
	Assess dietary behaviors and evaluate patients' habitual food intake
	Recognize the need for detailed nutritional assessment and referral to RDs and other healthcare professionals with nutritional expertise when appropriate
Nutrition diagnosis	Describe pathogenesis of nutrition-related diagnoses
	Diagnose nutrition-related problems and prioritize them
	Recognize and use diagnostic labels for documentation in patients' medical records
	Communicate effectively with RDs, including understanding the information conveyed by the "problem, etiology, signs, and symptoms" statements commonly used by RDs
Nutrition intervention	Assess patients' confidence and readiness to change toward a healthy lifestyle behavior that includes good nutritional practices
	Counsel patients on the benefits of evidenced-based recommended nutrition practices for the prevention and treatment of diverse medical conditions
	Use appropriate behavioral skills and tools to help patients initiate and maintain good nutritional practices
	Demonstrate effective communication skills with patients and other healthcare professionals with nutritional expertise
	Appropriately counsel patients according to age, sex, race or ethnicity, culture, and other personal characteristics
	Recognize the need and appropriate timing for referral to RDs or other healthcare professionals with nutrition expertise with the intent of modifying a nutrition-related behavior
	Support the implementation of the nutrition intervention with members of the healthcare team
Nutrition monitoring and evaluation	Facilitate goal setting and periodic evaluation of dietary recommendations
	Support behavioral changes by advising the use of monitoring tools in achieving nutrition-related goals
	Evaluate the health effects of nutrition modifications made by patients

RD indicates registered dietician.

**Table 3. Learning Objectives for Physical Activity and Exercise Assessment and Counseling During Undergraduate Medical Training**

Domains	Learning Objectives
Physical activity assessment	Describe the normal physiological responses to an acute bout of exercise and adaptations to aerobic and resistance exercise training
	Describe health benefits of physical activity for health maintenance and in diverse medical conditions, as well as recommended guidelines for an active lifestyle
	Assess physical activity behaviors using the appropriate tools for patients who are healthy, have controlled disease, or are living with a disability
	Recognize the need for additional assessments such as symptom-limited exercise testing and refer to appropriate healthcare professionals or clinical settings
Physical activity and exercise prescription	Recognize individuals who do not meet current physical activity recommendations
	Develop a safe physical activity or exercise prescription for apparently healthy people, those at increased risk for developing a chronic noncommunicable disease, and patients with specific medical conditions
	Recognize individualized constraints/risks and contraindications to performing physical activity or a structured exercise program and adjust recommendations accordingly
Physical activity and exercise counseling, behavioral strategies	Assess patients' confidence and readiness to change toward a healthy lifestyle behavior as it relates to physical activity and exercise
	Counsel patients on the benefits of physical activity in health maintenance and for prevention and treatment of specific medical conditions
	Use appropriate behavioral tools and skills to support patients to initiate or maintain a physical activity plan
	Demonstrate effective patient communication skills with regard to physical activity and exercise assessment and counseling in all clinical settings
	Appropriately counsel patients according to age, sex, race or ethnicity, culture, and other personal characteristics
	Recognize the need for individualized or supervised physical activity programs when referring a patient to appropriate healthcare professionals with physical activity or exercise expertise
	Support the implementation of the physical activity intervention in close collaboration with other members of the healthcare team
	Use behavioral strategies to maintain an active lifestyle, including monitoring, goal setting, and periodic reassessment
	Evaluate the health effects of physical activity modifications with patients and reinforce or adjust the plan accordingly
Physician's personal health	Recognize the importance of an active lifestyle for his or her own quality of life, professional balance, and as a role model for patients

**Table 4. Learning Objectives for Tobacco Exposure Assessment and Smoking Cessation Counseling During Undergraduate Medical Training**

Domains	Learning Objectives
Tobacco exposure assessment	Assess smoking status and lifetime history of smoking, as well as use of other tobacco products
	Assess level of nicotine dependence
	Describe health hazards of tobacco exposure (primary and secondary) and benefits of tobacco cessation, including delay before time to benefits
Tobacco cessation prescription	Recommend effective tobacco cessation aids, pharmacological and nonpharmacological, based on best scientific evidence and public health recommendations
	Recognize the side effects and contraindications of pharmacological aids
Counseling, behavioral strategies	Assess patients' confidence and readiness to cease or reduce tobacco usage
	Demonstrate effective patient communication skills to engage in discussions about tobacco cessation
	Acknowledge that tobacco leads to an addiction with psychological and physical aspects and that tobacco cessation usually requires multiple attempts
	Help patients to use effective behavior change techniques to quit smoking or tobacco use, such as goal setting, self-monitoring, and positive reinforcement
	Adapt counseling appropriately to match the patient's age, sex, race or ethnicity, culture, values, and preferences
	Refer to group or individual support, phone/online quit smoking resources when appropriate

**Table 5. Examples of Delivery Format to Integrate Lifestyle Counseling Knowledge and Clinical Skills in Undergraduate Medical Schools Curricula**

Domains	Examples of Formats
Knowledge	Large class lectures
	Small-group didactics
	Integration in problems (for curriculum based on problem-based learning)
	Self-based learning (readings, interactive e-quiz)
	Experimental learning experiences (self-monitoring, behavior modification)
Clinical skills	Observations of patients' interviews
	Video of simulated patients or real patients
	Patient interview performed by experienced clinician
	Observation/shadowing of other health professionals (dietitian, kinesiologist)
	Practical work
	Role-play with peers
	Practical work with standardized simulated patients
	Practical work with real patients
	Feedback from practical work
	From peers observing/experiencing counseling
	From trained standardized patients
	From professor observing role-play or patient counseling



PHYSICAL THERAPY

Admissions and Programs

MS in Healthspan Promotion and Rehabilitation

Doctor of Physical Therapy

Doctor of Clinical Exercise Physiology

Clinical Rehabilitation and Technology Research Certificate

Healthy Living Practitioner™ Certificate

What to Expect

Applying

Technology-Based Health Communication and Promotion Certificate

Physical Therapy Admissions and Programs Healthy Living Practitioner™ Certificate

# Healthy Living Practitioner™ Certificate

## Develop healthy living interventions

Supported by the American Heart Association, the Healthy Living Practitioner™ (HLP) certificate program prepares you to become a Healthy Living Practitioner™.

Learn how to assess lifestyle behaviors and subsequently develop and implement Healthy Living Interventions. As an HLP, you'll focus on the primordial and primary prevention of chronic diseases as well as secondary prevention in those already diagnosed with a lifestyle related disease.

HLPs are committed to supporting behavior changes towards Healthy Living and helping to ensure these changes are maintained over the long-term. As an HLP, you'll participate in a broad range of activities related to the field including individual/ patient care, program development and implementation, teaching, research and leadership activities related to Healthy Living Medicine.

See how UIC's Department of Physical Therapy is dedicated to [healthspan](#), [health innovation](#), and the [Healthy Living for Pandemic Event Protection \(HL- PIVOT\) network](#).





Technology-Based Health Communication and Promotion Certificate

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Apply now



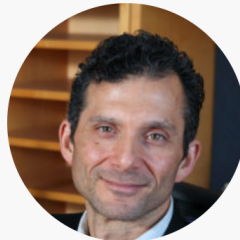
Tuition and fees



What to Expect



Request info



Integrating early prevention health measures across disciplines

Meet Ross →

In the US, over

80%

of individuals see a physician at least once a year, but less than

35%

receive exercise and nutrition from counseling from their physician

#1

This pioneering curriculum is the first of its kind in the country

### Course of Study

Fall

Spring

Summer

<a href="#">HLP 500</a>	Upstream Prevention: Epidemiology, Economics and Policy — online	3 hours
<a href="#">HLP 510</a>	Preventive Health Screening — online	1 hour
<a href="#">HLP 520</a>	Nutrition for Healthy Living — online	3 hours
<a href="#">HLP 535</a>	Use of Technology for Healthy Living — online	2 hours

### Course of Study

Fall

Spring

Summer

<a href="#">HLP 505</a>	Health Harmonics and Communication — online	3 hours
<a href="#">HLP 525</a>	Exercise and Physical Activity for Healthy Living	3 hours
<a href="#">HLP 530</a>	Behavioral Counseling for Healthy Living — online	2 hours
<a href="#">HLP 560</a>	Healthy Living Seminar — online*	2 hours

\* HLP 560 is mostly online, except for a single in-person presentation with a lot of flexibility with scheduling.

### Course of Study

Fall

Spring

Summer

<a href="#">HLP 590</a>	Healthy Living Practicum – <i>Prerequisite: HLP 560</i>	3 hours
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**PHYSICAL THERAPY**

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Residency in Orthopedic Physical Therapy

Physical Therapy > Admissions and Programs > **Doctor of Clinical Exercise Physiology**

# Doctor of Clinical Exercise Physiology

## Training experts that apply exercise interventions across patients with complex clinical morbidities

UIC's Doctor of Clinical Exercise Physiology (DCEP) program provides unique didactic and practical training opportunities that elevate the professional preparation beyond what is currently available for students who aspire to practice as clinical exercise physiologists.

Our program builds upon a master's degree training and delivers rigorous didactic and practical education that includes the clinical management of patients with complex health conditions, performing echocardiograms, delivering diabetes education to patients and effectively managing clinical programs and personnel.

Students who complete earn our DCEP are well poised to pursue careers in cardiac rehabilitation, pulmonary rehabilitation, bariatric exercise programs, cancer rehabilitation and other clinical exercise intervention settings, cardiopulmonary exercise stress testing, diabetes education, program management, cardiovascular sonography, academics, be a part of medical research teams and more.

**Apply now**

- Health Communication and Promotion Certificate ▼
- Residency in Orthopedic Physical Therapy ▼
- Residency in Sports Physical Therapy ▼

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- Physical Therapy Faculty Practice

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- Continuing Education

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- Contact



**UIC Physical Therapy Faculty Practice**  
 Learn from world-class faculty and researchers including those in our faculty practice  
[Learn more](#)

**Apply now**

### What to expect

A semester-by-semester look at the program →

Employers are

60%

more likely to hire a candidate with a DCEP over a master's and

70%

would pay, on average, \$10K more per year to candidates with a DCEP

[Learn more](#)

### DCEP Program

Fall

Spring

Summer

<a href="#">CEP 641</a>	Clinical Education Experience I	6 hours
<a href="#">CEP 655</a>	Cardiovascular Imaging and Research Methods I	2 hours
<a href="#">HLP 520</a>	Nutrition and Healthy Living	3 hours
<a href="#">CEP 625</a>	Professional Development I	3 hours
<a href="#">CEP 600</a>	Healthy Living Medicine for Diabetes and Other Metabolic Disorders	4 hours

### DCEP Program

Fall

Spring

Summer

<a href="#">PT 510</a>	Control of Posture and Locomotion	2 hours
<a href="#">HLP 530</a>	Behavioral Counseling for Healthy Living	2 hours
<a href="#">CEP 642</a>	Clinical Education Experience II	6 hours
<a href="#">CEP 656</a>	Cardiovascular Imaging and Research Methods II	2 hours
<a href="#">CEP 626</a>	Professional Development II	3 hours
<a href="#">CEP 657</a>	Ultrasound Clinical Rotation I	3 hours
		<b>18 total hours</b>

### DCEP Program

Fall

Spring

Summer

<a href="#">CEP 697</a>	Project in Clinical Exercise Physiology	1-4 hours
<a href="#">CEP 658</a>	Ultrasound Clinical Rotation II	3 hours
<a href="#">CEP 601</a>	Healthy Living Medicine for the Clinically Complex Patient	4 hours
<a href="#">CEP 643</a>	Clinical Education Experience III	6 hours
		<b>14-18 total hours</b>

PHYSICAL THERAPY FACULTY PRACTICE

Physical Therapy

Cardiac Rehabilitation

Cardiopulmonary Exercise Stress Testing

Physical Activity Clinic

Orthopedic Physical Therapy Residency Program

Sports Physical Therapy Residency Program

Directory

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Physical Therapy Faculty Practice > Physical Activity Clinic

# Physical Activity Clinic

## Contact us to obtain free physical activity counseling

The primary goal of the Physical Activity Clinic at the PT Faculty Practice is to help individuals increase their levels of physical activity through evidence-based counseling and support.

### Services provided

- Online movement assessment with personalized feedback
- Individualized physical activity prescription
- 1-3 follow-up telehealth counseling sessions

### Benefits

- Receive simple tips on how to be more active
- Create a physical activity plan
- Health education and resources
- Convenient online visits
- Accountability

“ Over the last two months, I've been meeting with Dr. Hall who has presented me with solid factual information that has assisted me with my workout plans, nutrition as well as mental health in regards to meeting my goals. Her approach is uncommon and welcome as it's more of a confidant than my doctor.

Demetrius A.

### Who qualifies?

Adults who receive a referral from their doctor or therapist.



### Schedule an appointment

Physical activity counseling (PAC) services are available for patients of the UIC Physical Therapy Practice and UIC clinics free of charge. Speak with your therapist to schedule a virtual doxy.me telehealth consultation.

You can contact me at:  
Email [hall6@uic.edu](mailto:hall6@uic.edu)  
Phone (708) 402-8090



# Master of Exercise Physiology



## Professional accreditation

The Master of Exercise Physiology has Provisional Accreditation status at the level of Exercise Physiology from Exercise and Sports Science Australia (ESSA).

The course will be submitted for consideration of full accreditation at the required stage.

Full (or provisional) accreditation status must be awarded for graduates of the course to be eligible for accreditation credentialing with ESSA.

In Australia, accredited Exercise Physiologists are eligible to provide services under Medicare, the Department of Veterans Affairs, WorkCover and private health insurance funds.

A condition of eligibility for exercise physiology accreditation is having exercise science accreditation from ESSA.

More information about accreditation can be obtained from [Exercise and Sports Science Australia](#).

School of Medicine Greenville

School of Medicine Greenville

About

Curriculum

Academic Years

EMT Training

Integrated Practice of Medicine

➤ Lifestyle Medicine Curriculum

Graduate Medical Education

Summer Opportunities

Research

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My USC SONG



CURRICULUM

Lifestyle Medicine Curriculum

The UofSC School of Medicine Greenville is the first medical school in the country to fully incorporate education in nutrition, physical activity, behavior change, and self-care including resiliency into all four years of its undergraduate medical school curriculum. Through its clinical partnership with Prisma Health–Upstate, formerly Greenville Health System, the school is dedicated to introducing students to the latest in real-world patient care. The purpose of the implementation of lifestyle medicine into the curriculum is two-fold: to promote self-care among the student body as they persevere through school, and for students to impart this knowledge to their future patients.

Adopted and embraced by Prisma Health, Total Health is the approach to patient care that begins with a health risk assessment to develop a patient-centered prevention and wellness program. Emphasis is on continuity of care before, during and after admissions in order to reduce risk of acute illness, relapse or acute episodes of chronic disease, and hospital admissions while maximizing patient function and well-being. The Lifestyle Medicine curriculum reinforces and builds on this approach to patient care and demonstrates the continuum of education through practice as a hallmark of the partnership between the UofSC School of Medicine Greenville and Prisma Health.

**Jennifer Trilk, Ph.D., FACS, DipACLM**, Assistant Professor, Physiology and Exercise Science at the UofSC School of Medicine Greenville, is a national leader for incorporating physical activity, nutrition and student self-care into medical school. Dr. Trilk co-founded the **Lifestyle Medicine Education Collaborative**, which focuses on expanding access to lifestyle medicine education in U.S. medical schools and, in 2019, received the Exercise is Medicine Global Leadership Award from the **American College of Sports Medicine**.

LMed Giving

Your gift supports the continuing development and maintenance of the LMed curriculum, including medical student involvement and LMed's support of other medical schools in the implementation of lifestyle medicine training for the prevention, treatment and reversal of the nation's top chronic diseases.

To submit your gift to the LMed program, please go the **LMed Giving Page**.



PHOTO GALLERY

Lifestyle Medicine in Action: Culinary Medicine

Culinary Medicine Class at Greenville Tech from February, 2020

[View the Gallery](#)





# Universal Points to Consider

RESEARCH ARTICLE

Open Access

Rethinking physical activity communication:  
using focus groups to understand women's  
goals, values, and beliefs to improve public  
health



Michelle Segar<sup>1\*</sup>, Jennifer M. Taber<sup>2</sup>, Heather Patrick<sup>3</sup>, Chan L. Thai<sup>4</sup> and April Oh<sup>5</sup>

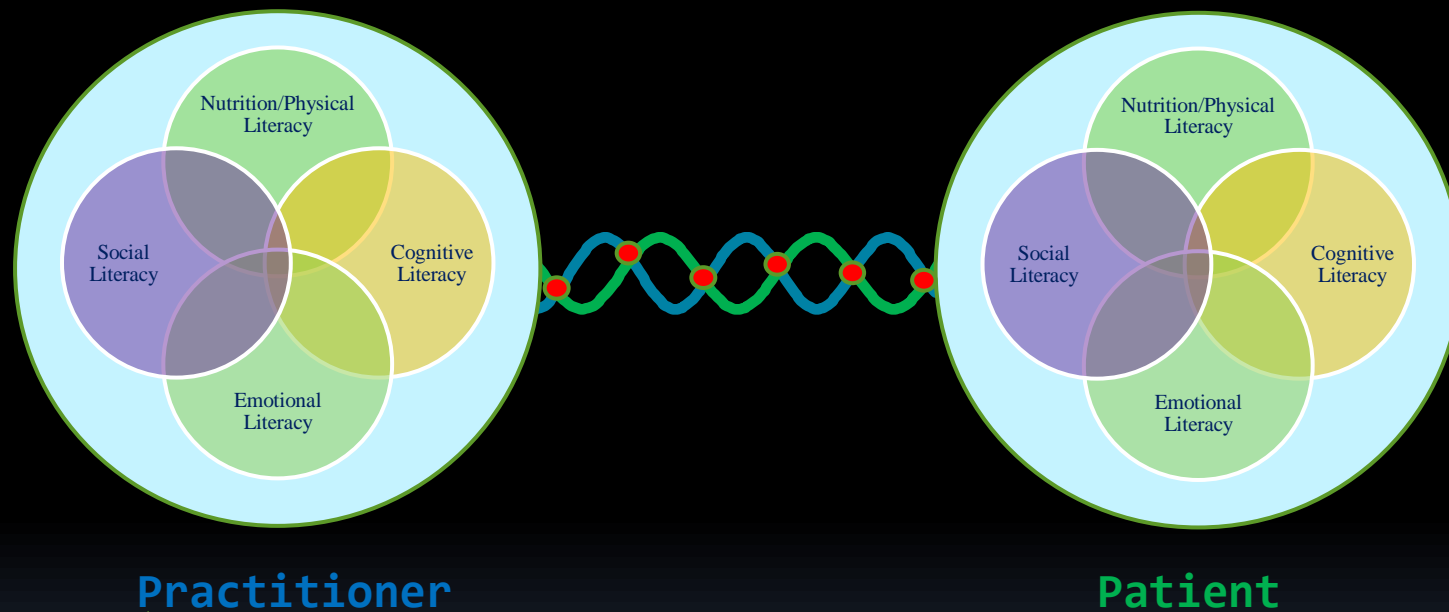
## Narrow definitions of PA

When asked “what counts” as PA, low active participants tended to define PA in ways using a specific and narrow set of standards that traditional PA recommendations have used to educate people about PA, such as signs that they were exerting themselves in high-intensity exercise (e.g., increased heart rate and/or sweating, or feeling “like you’re burning something”) and for the “right” amount of time (e.g., 30 min).

Low active participants also described feeling pressured by these criteria and not able to achieve them: “You have to do this at this time, and you have to commit to these hours. You have to do this activity.

One low active participant said that walking her dog was a barrier to being active, which implied that she did not believe dog-walking counted as valid PA.

**Figure 1: Health Harmonics Framework**



Legend: ● = Harmonic Node – Shared Meaning

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2022

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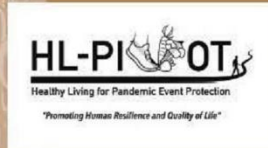
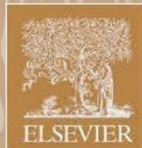
# Progress in Cardiovascular Diseases

## Social Justice in the United States as it Relates to Healthy Living Medicine: The Current State of Inequity and the Path Forward

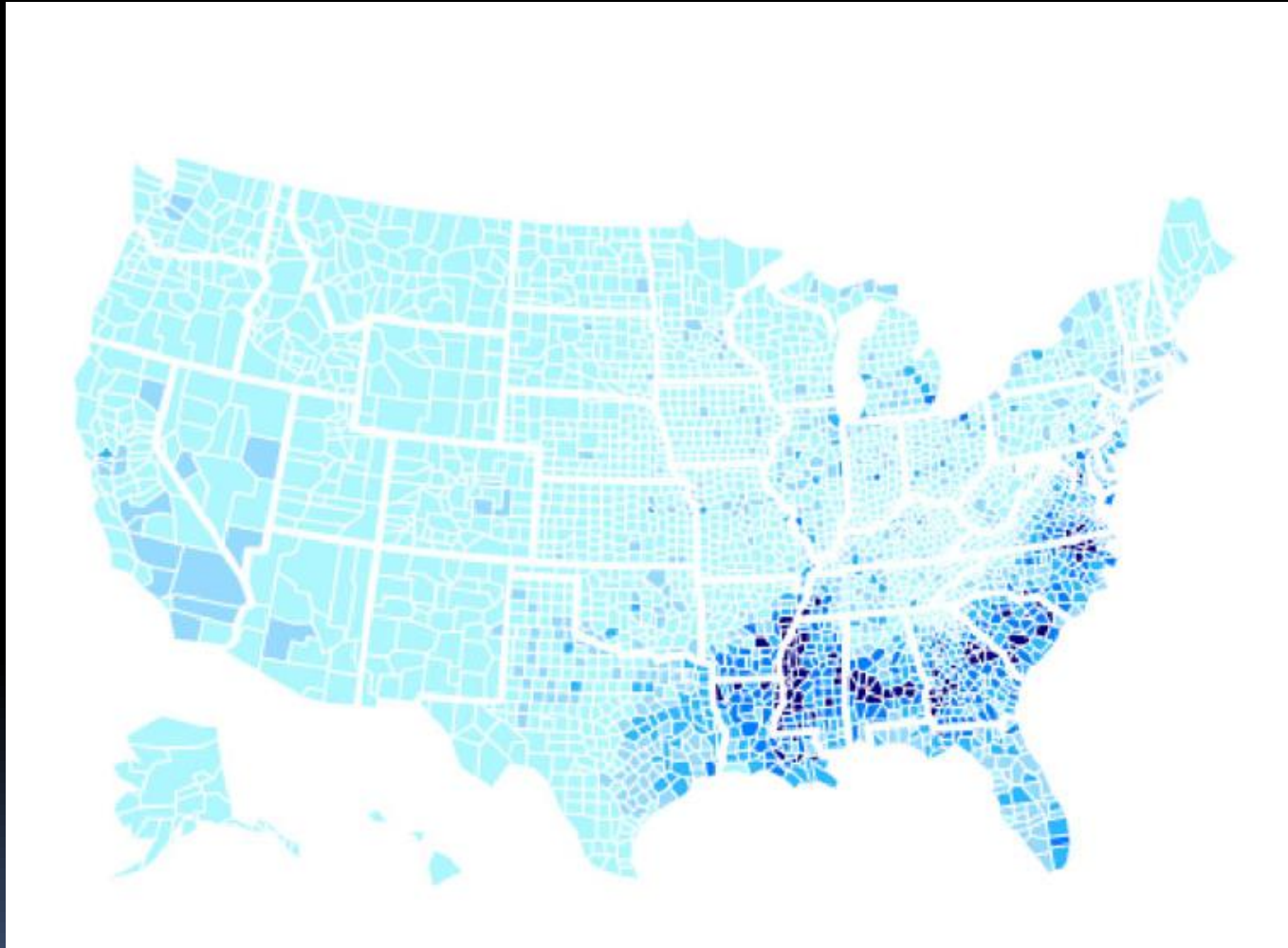
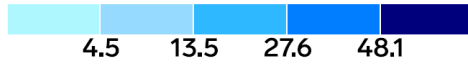
Ross Arena, Grenita Hall and Richard Severin  
*Guest Editors*

Carl J. Lavie, MD  
*Editor-in-Chief*

Christopher J. White, MD  
and Hector O. Ventura, MD  
*Associate Editors*



# Black share of population



Note: Map shows percent of each county's population that identifies as non-Hispanic Black alone

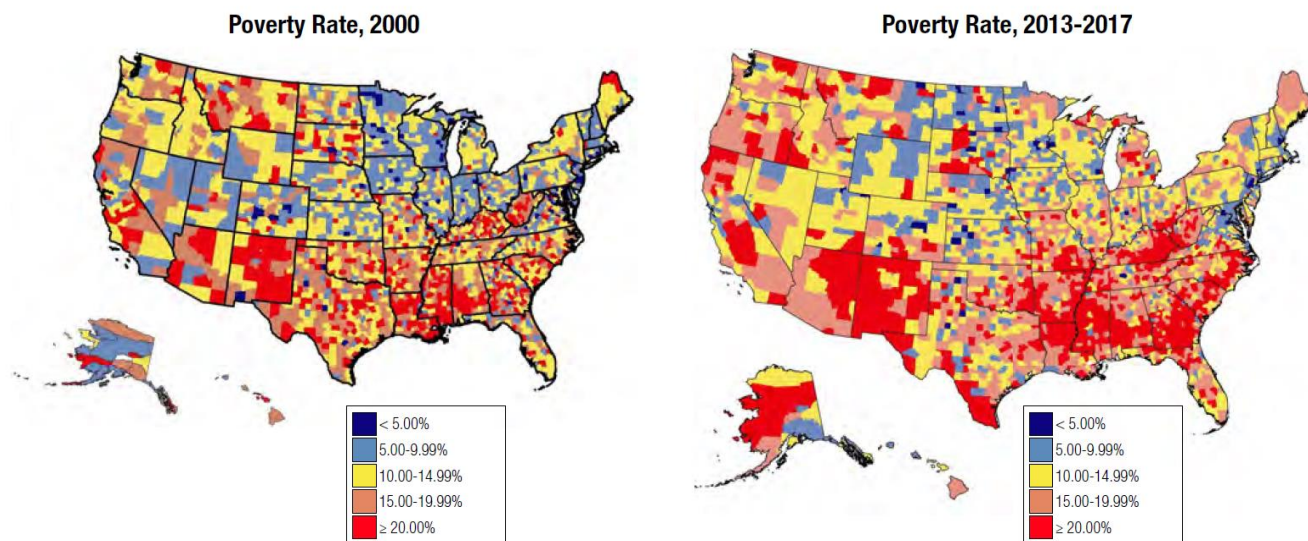


# HEALTH EQUITY REPORT 2019-2020

*Special Feature on Housing  
and Health Inequalities*

U.S. Department of Health and Human Services  
Health Resources and Services Administration  
Office of Health Equity

**FIGURE 2.3:** Percentage of Population Below the Federal Poverty Level, United States, 2000 and 2013-2017 (3,143 Counties)



Source: Data derived from the 2000 Census and 2013-2017 American Community Survey.

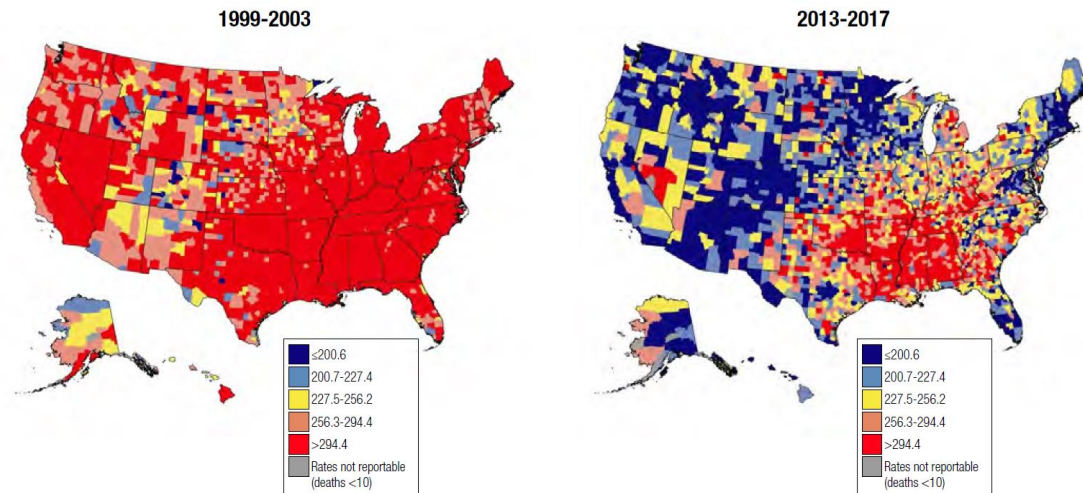


# HEALTH EQUITY REPORT 2019-2020

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Health Resources and Services Administration  
Office of Health Equity

**FIGURE 2.14:** Age-Adjusted Cardiovascular Disease (CVD) Mortality Rates per 100,000 Population for the United States (3,143 Counties), 1999-2003 and 2013-2017



Source: Derived from the 1999-2017 National Vital Statistics System.

Thank you