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# Exercise is *Effective but Underutilize* Medicine

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Exercise  
is Medicine®  
On Campus

University of Iowa



# Health Hazards Associated with Physical Inactivity



High Blood Pressure



Increased risk of Chest pain & Heart attack at younger age



Risk of getting Diabetes mellitus at early age



Weight gain and Obesity



Increased risk of certain cancers like  
1. Breast Cancer 2. Cancer of large intestine 3. Lung cancer 4. Ovarian Cancer



Depression



Inflammation (Aches and pains in the body)



Dysfunction of Immune system



Weak Bones and increased risk of Fractures

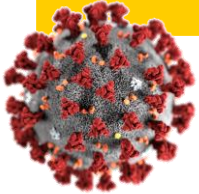


Decrease in muscle mass and strength



Physical Disability

# Physical Inactivity Associated with a higher risk for severe COVID-19 outcomes



Exercise  
Vital Sign

- N=48,440 adult patients with at least **3 exercise vital sign measurements** AND a COVID-19 diagnosis in 2020
- Compared patients who were consistently inactive vs. patients who were consistently meeting PA guidelines

## Among Inactive Patients

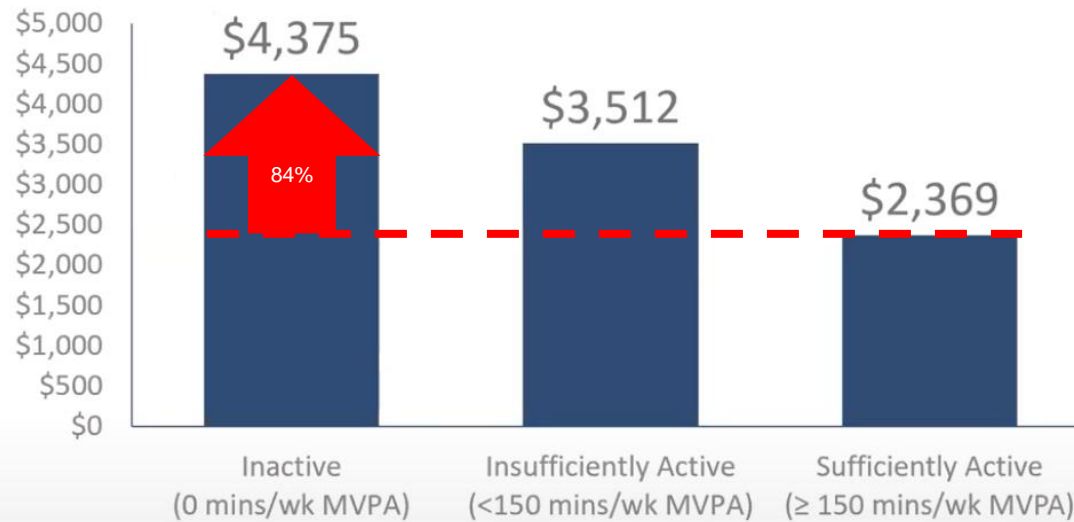
Hospitalization  
OR=2.26

Admission to ICU  
OR=1.73

Death  
OR=2.49

Risk of hospitalization for those with BMI>40 (OR=1.77)

# Inactive patients have significantly higher hospital charges compared to active patients



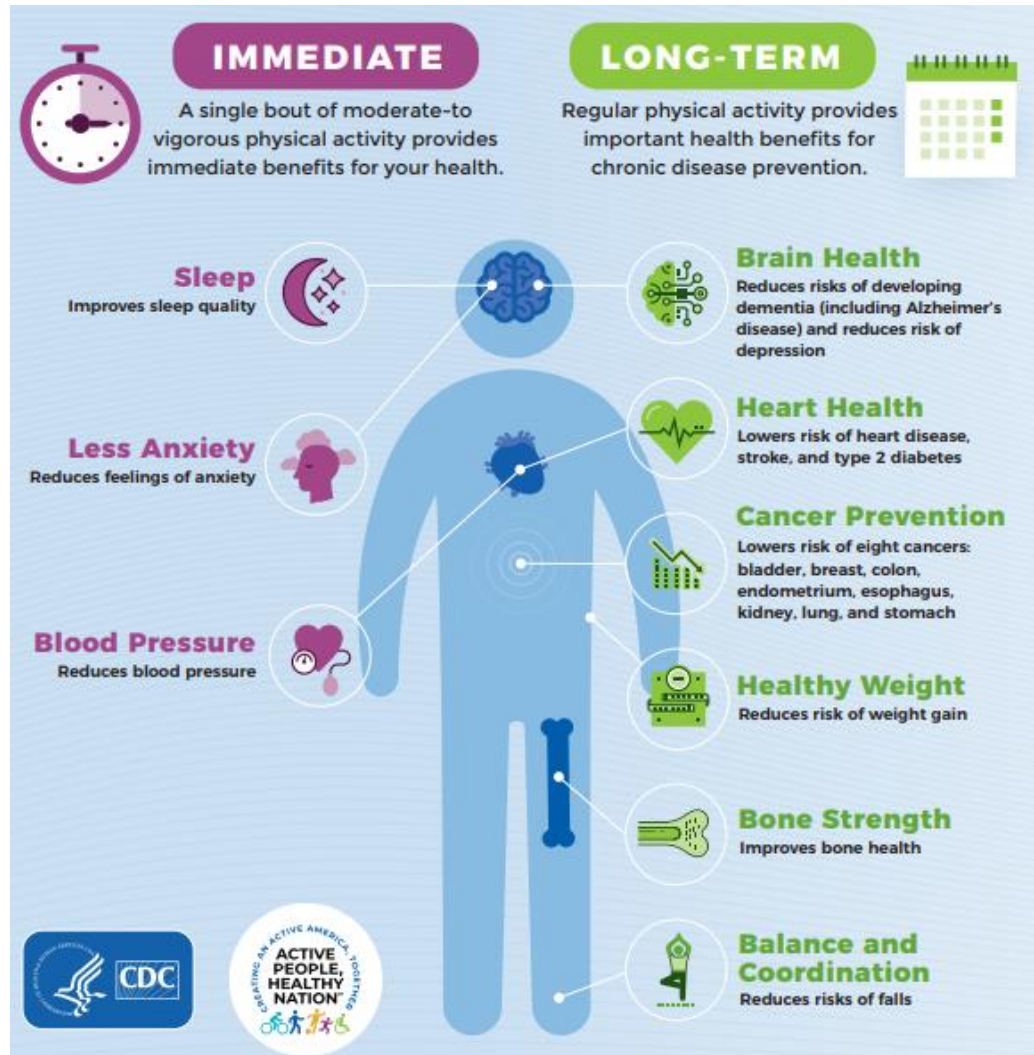
† The cost imposed on system for providing the care received.

\*Mean PA reported during 2 yrs prior to summed annual hospital costs N = 1,195,407 person-years; 459,313 persons



**Exercise  
Vital Sign**

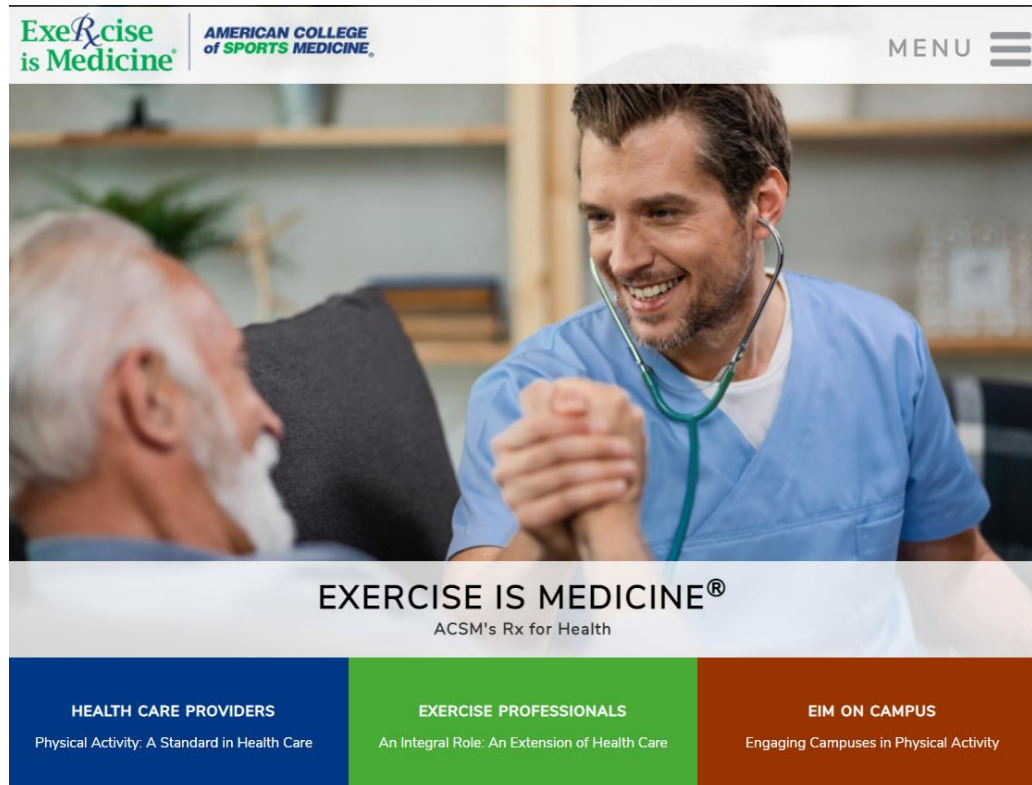
# Irrefutable Evidence Supports Health Benefits of Regular Physical Activity



# Physically Active Patients have Fewer Future Hospitalizations

- Most active participants had **12%** lower likelihood of spending more than 20 days in hospital over the next 20 years vs. those reporting no activity
- Patients reporting ANY activity had **0.42** fewer days in the hospital per year

# Exercise is Medicine!!!



But Underutilized in Primary Care 😞

# Physical Inactivity is the Most Common and Preventable Risk Factor But Receives Least Attention in Healthcare

Rank	Risk Factor	% Deaths Attributed	Prevalence among adults in U.S.	Measured in Primary Care?	Prevented or Improved with Physical Activity?
1	Hypertension	13%	10%	✓	✓
2	Tobacco	9%	13%	✓	✓
3	High Blood Glucose	6%	13%	✓	✓
4	<b>Physical Inactivity</b>	<b>6%</b>	<b>76%</b>	<b>✗</b>	
5	Obesity	5%	42%	✓	✓
6	High Cholesterol	5%	10%	✓	✓



**Question:**

***If exercise is so great, why don't we measure or treat it?***



# Documented Barriers to Implementation

- **Lack of Clinical Time** (Berra et al., *JAMA*, 2015)
  - EVS designed to minimize disruption on clinical workflow (<30 sec) (Golightly et al., *Prev Chronic Disease*, 2017)
  - Exercise prescription = 15 minutes (Petrella et al., *Can Fam Phys*, 2010)
- **Lack of Training on Exercise Counseling** (Sallis, *TPAS*, 2015; Clark et. al., *Osteo Int*, 2017)
  - [ACSM Healthcare Action Guide](#)
  - <https://uicapture.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=630dc0da-a9a9-4be1-af34-ae890140ba0c>
- **Lack of Reimbursement Options** (Lobelo et al., *Circulation*, 2018)

# Exercise is Medicine® Initiative



1. Healthcare providers **screen for physical inactivity** at every clinic visit.
2. Provide patients with **exercise prescription OR brief counseling** to help patient meet guidelines.
3. **Refer** patient to community-based resources for physical activity (PA) counseling.

# Step 1. **Assess** Physical Activity at Every Visit Integrate into Epic

## Exercise Vitals

During the rooming process, after standard vitals (BP, HR, O2) are taken, you now have access to ask the patient two questions about their physical activity, located in the Rooming Tab. If the patient gets less than 150 minutes/week, it flags in the Flowsheet but not the link that is pulled into the note.

**Nursing:** Ask the patient the two questions below

The screenshot shows the Epic Rooming interface. At the top, there are navigation tabs: Room Patient, Status, Nurse In, Rooming In Progress, Done Rooming, and Nurse Out. Below these are various clinical categories like Infection Screening, Tobacco and Nicotine Use, etc. The 'Exercise Vitals' form is highlighted with a red box. It contains the following questions and input fields:

- Exercise Level of Effort**  
How many days a week of Moderate to Strenuous Exercise (like a brisk walk)?  
Input: 0 1 2 3 4 5 6 7
- On average, how many minutes do you exercise per day?  
Input: 0 10 20 30 40 50 60 70 80 90 120 150
- Total Minutes of Exercise per Week  
Input: [Empty field]

At the bottom of the form are buttons for Restore, Close, Cancel, Previous, and Next.

**Providers** can pull the information into their notes by adding the SmartText: **.EXERCISEVITALS** and it looks like:

The screenshot shows a SmartText note in an Epic interface. The text reads: **Total Minutes of Exercise per Week: 80**. The text is highlighted with a red box. Above the text is a standard text editor toolbar with icons for bold, italic, underline, and other formatting options.

**Minimal Disruption to Clinical Workflow**  
2 items, <30 seconds to administer

Golightly et al., *Prev Chronic Disease*, 2017

**Administered in Family Medicine**  
since 2018

**15,000 data points to date**

# PAVs Predicts Patient Disease Risk

N=34,712

Table 1 Characteristics of a Clinic's Adult Primary Care and Internal Medicine Outpatient Visits During Which the Physical Activity Vital Sign was Administered and Recorded, November 2011 to November 2013

**Exercise  
Vital Sign**

	N (%)	Mean clinic visits per year (SD)	Median self-reported mins-wk <sup>-1</sup> MVPA (IQR)	% Sufficiently Active <sup>a</sup>	% Insufficiently Active
Total	34,712 (100)	2.1 (1.0)	100 (15–200)	38.7	61.3
Gender					
Male	15,163 (43.7)	2.0 (1.0)	120 (40–240)	45.0	55.0
Female	19,548 (56.3)	2.2 (1.0)	90 (0–180)	33.9	66.1
Age					
18–29	2362 (6.8)	1.2 (0.5)	150 (80–270)	54.2	
30–39	3281 (9.5)	1.5 (0.7)	120 (60–240)	44.2	
40–49	3937 (11.3)	1.7 (0.9)	120 (40–225)	43.5	
50–64	9960 (28.7)	2.1 (0.9)	100 (20–200)	38.4	
≥65	15,172 (43.7)	3.1 (1.2)	90 (0–180)	34.1	65.9
BMI <sup>b</sup>					
<18.5	409 (1.4)	1.7 (0.9)	90 (0–210)	37.9	62.1
18.5–24.9	7488 (25.0)	1.8 (0.9)	120 (40–225)	45.9	54.2
25–29.9	9268 (30.9)	2.0 (0.9)	120 (30–225)	42.9	57.1
30–34.9	6443 (21.5)	2.3 (1.0)	90 (0–180)	34.2	65.8
35–39.9	3280 (10.9)	2.4 (1.0)	60 (0–150)	27.7	72.3
≥40	3104 (10.4)	2.9 (1.2)	45 (0–120)	20.8	79.2
Charlson Index					
0	8289 (23.9)	1.4 (0.6)	150 (60–240)	50.3	49.7
1	6622 (19.1)	1.8 (0.8)	120 (40–225)	43.8	56.3
2–4	11,358 (32.7)	2.6 (1.0)	90 (0–180)	37.0	63.0
≥5	8443 (24.3)	4.0 (1.4)	60 (0–150)	25.8	74.3

**Strong discriminant validity**  
Coleman et al., MSSE, 2012

# UIHC Family Medicine Launched on 11/27/18

- During the check in process during annual physicals, Family Medicine nursing staff will ask the patients two questions about exercise:

Exercise Vitals - Exercise Vitals

Exercise Level of Effort

How many days a week of Moderate to Strenuous Exercise (like a brisk walk)?

On average, how many minutes do you exercise per day?

Total Minutes of Exercise per Week

Restore Close Cancel Previous Next

- Helpful Scripting, if necessary:** Our providers take your health very seriously. Regular exercise is one of the best things you can do for your health. How many days a week do you exercise and for how many minutes on average do you exercise?

- Nursing will have these two questions in 'Rooming' and LIPs will have these questions in 'screenings'

RN/MAs will access 'exercise vitals' through

Rooming

Exercise Vitals

Screenings

LIPs will access exercise vitals through 'screenings'

# PAVS now in Epic and Can be Adopted by All UIHC Clinics

If the patient doesn't reach 150 minutes of Moderate to Strenuous Exercise each week, the calculation will be in red with an exclamation mark by it.

Exercise Vitals	
Appointment from 11/15/2018 in Family Medicine 11/15/18 0959	
<b>Exercise Level of Effort</b>	
How many days a week of Moderate to Strenuous Exercise (like a brisk walk)?	1
On average, how many minutes do you exercise per day?	90
Total Minutes of Exercise per Week	90 (calculated) †

If the calculated 'total minutes of exercise per week' is less than 150, it will show in red.

The flowsheet row will populate into the Family Medicine Clinic Note System Template under Vitals Signs or providers can manually enter the answers by adding .EXERCISEVITALS

Exercise Vitals

Exercise Vitals	
Appointment from 10/30/2018 in Family Medicine 10/30/18 1127	
<b>Exercise Level of Effort</b>	
How many days a week of Moderate to Strenuous Exercise (like a brisk walk)?	1
On average, how many minutes do you exercise per day?	10
Total Minutes of Exercise per Week	† 10 (calculated)

**Objective:**  
There were no vitals taken for this visit.  
There is no height or weight on file to calculate BMI.  
Total Minutes of Exercise per Week: (†) 10

# Step 2. Advise and/or Counsel on Physical Activity

**Exercise is Medicine** | AMERICAN COLLEGE of SPORTS MEDICINE

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**2018 Physical Activity Guidelines for Adults:**

- 150-300 minutes/week of moderate-intensity activity or 75-150 minutes/week of vigorous activity (somewhat hard to very hard) or a combination of both
- Muscle strength training 2 or more times a week

**Aerobic Activity (check)**

Frequency (days/week):  1  2  3  4  5  6  7

Intensity:  Light (casual walk)  Moderate (brisk walk)  Vigorous (like jogging)

Time (minutes/day):  10  20  30  40  50  60 or more

Type:  Walk  Run  Bike  Swim/Water Exercise  Other \_\_\_\_\_

Steps/day:  2,500  5,000  7,000  9,000 or more  Other \_\_\_\_\_

**What about aerobic activity?**

- Moderate activity is at a pace where you can talk but cannot "sing." Examples: *brisk walking, light biking, water exercise and dancing.*
- Vigorous activity is done at a pace where you can't say more than a few words without pausing for a breath. Examples: *jogging, swimming, tennis and fast bicycling.*
- You can exercise for any length of time. For example, you might walk:
  - 30 minutes 5 days/week or
  - 20 minutes daily
  - 5 minutes here, 10 minutes there. Just work your way up to 150 total minutes/week.
- Your ultimate goal is to gradually build up to 7,000-9,000 steps/day.

**Muscle Strength Training (check)**

Frequency (days/week):  1  2  3  4  5  6  7

**What about strength training?**

- You don't have to go to a gym. Try elastic bands, do body weight exercises (chair sit-to-stands; floor, wall or kitchen counter push-ups; planks or bridges) or lift dumbbells. Heavy work around your home or yard also builds strength.
- Strengthen your legs, back, chest and arms. To start, try 10-15 repetitions using light effort. Build up to medium or hard effort for 8-12 repetitions. Repeat 2-4 times, 2-3 days/week.
- Give yourself a rest day between each strength training session.

Prescriber's Signature: \_\_\_\_\_

### Exercising to Lose Weight

The number of adults gain weight each year is increasing. High levels of obesity are a major risk factor for type 2 diabetes, heart disease, and other chronic conditions.

About 24 million U.S. adults are obese. What is obesity? It's when you have too much body fat. High levels of obesity are a major risk factor for type 2 diabetes, heart disease, and other chronic conditions.

Regular physical activity can help you lose weight and keep it off. It also helps you feel better. How much exercise you need depends on your current weight and health. The key is to be consistent. Evidence suggests that starting with just 150 minutes of moderate-intensity activity per week can help you lose weight and improve your health.

**Getting Started**

- Talk with your doctor about becoming more active.
- Start with 150 minutes of moderate-intensity activity per week.
- Increase your activity over time.

### Exercising with Type 2 Diabetes

High blood sugar is a major risk factor for type 2 diabetes. Regular physical activity can help you control your blood sugar and prevent complications.

High blood pressure is a major risk factor for heart disease. Regular physical activity can help you control your blood pressure and prevent complications.

**Getting Started**

- Talk with your doctor before you start an exercise program.
- Start with 150 minutes of moderate-intensity activity per week.
- Increase your activity over time.

### Exercising with Osteoarthritis

Osteoarthritis is a common joint condition. Regular physical activity can help you manage your symptoms and improve your quality of life.

High blood pressure is a major risk factor for heart disease. Regular physical activity can help you control your blood pressure and prevent complications.

**Getting Started**

- Talk with your doctor before you start an exercise program.
- Start with 150 minutes of moderate-intensity activity per week.
- Increase your activity over time.

### Exercising with High Blood Pressure

High blood pressure is a major risk factor for heart disease. Regular physical activity can help you control your blood pressure and prevent complications.

**Getting Started**

- Talk with your doctor before you start an exercise program.
- Start with 150 minutes of moderate-intensity activity per week.
- Increase your activity over time.

### Exercising with Blood Lipid Disorders

A blood lipid disorder is caused by high levels of various lipids. Lipids come in many forms. The most common are triglycerides and total cholesterol. Many other types of cholesterol are also measured. Ideally, the levels of triglycerides, total cholesterol, and LDL ("bad") cholesterol in your blood should be low. High levels of HDL cholesterol are good. Otherwise, you are at a greater risk of developing many forms of cardiovascular disease.

**Getting Started**

- Talk with your doctor before you start an exercise program.
- Start with 150 minutes of moderate-intensity activity per week.
- Increase your activity over time.



# Simple Primary Care Physical Activity Interventions Are Welcomed and Effective

**46-50%** of patients surveyed welcomed advice on physical activity from a health care professional  
(Morton et. al., *London J Prim Care*, 2016;  
Falskog et al., *Scan J Primary Care*, 2021)

**Review of Reviews:** Physical activity promotion interventions in primary care result in small-moderate **positive effects on PA levels**

(Sanchez et al., *Prev Med*, 2015)



# USPSTF Recommends Behavioral Counseling to Prevent CVD in Adults with CVD Risk Factors (Grade B)

- **Recommendation:** offer or refer adults with CVD risk factors to behavioral counseling interventions to promote a healthy diet & physical activity
- **Grade: B**
- **USPSTF concludes** that behavioral counseling has a "moderate net benefit on CVD risk in adults with increased risk for CVD"
- **Types of interventions promoted:** group counseling sessions over extended time, 1-on-1 sessions, motivational interviewing, meetings with other specialty services

# USPSTF Evidence for Physical Activity Behavioral Counseling for Adults without CVD Risk (Grade C)

- **Recommendation:** USPSTF recommends clinicians individualize the decision to offer or refer adults without CVD risk factors to behavioral counseling interventions to promote a healthy diet and physical activity.
- **Grade: C**
- **USPSTF concludes** behavioral counseling has a "small net benefit on CVD risk in adults without CVD risk factors "
- **Types of interventions promoted:** group counseling sessions over extended time, 1-on-1 sessions, motivational interviewing, meetings with other specialty services

# 3. Refer Patient to Community Resources

## Free Health Coaching

Ready to make a change?  
The University of Iowa offers FREE health coaching for individuals interested in making lifestyle behavior changes.



**REQUEST FREE COACHING HERE**

<https://tiny.cc/health-coach>

**OR**

**SCAN THIS QR CODE**



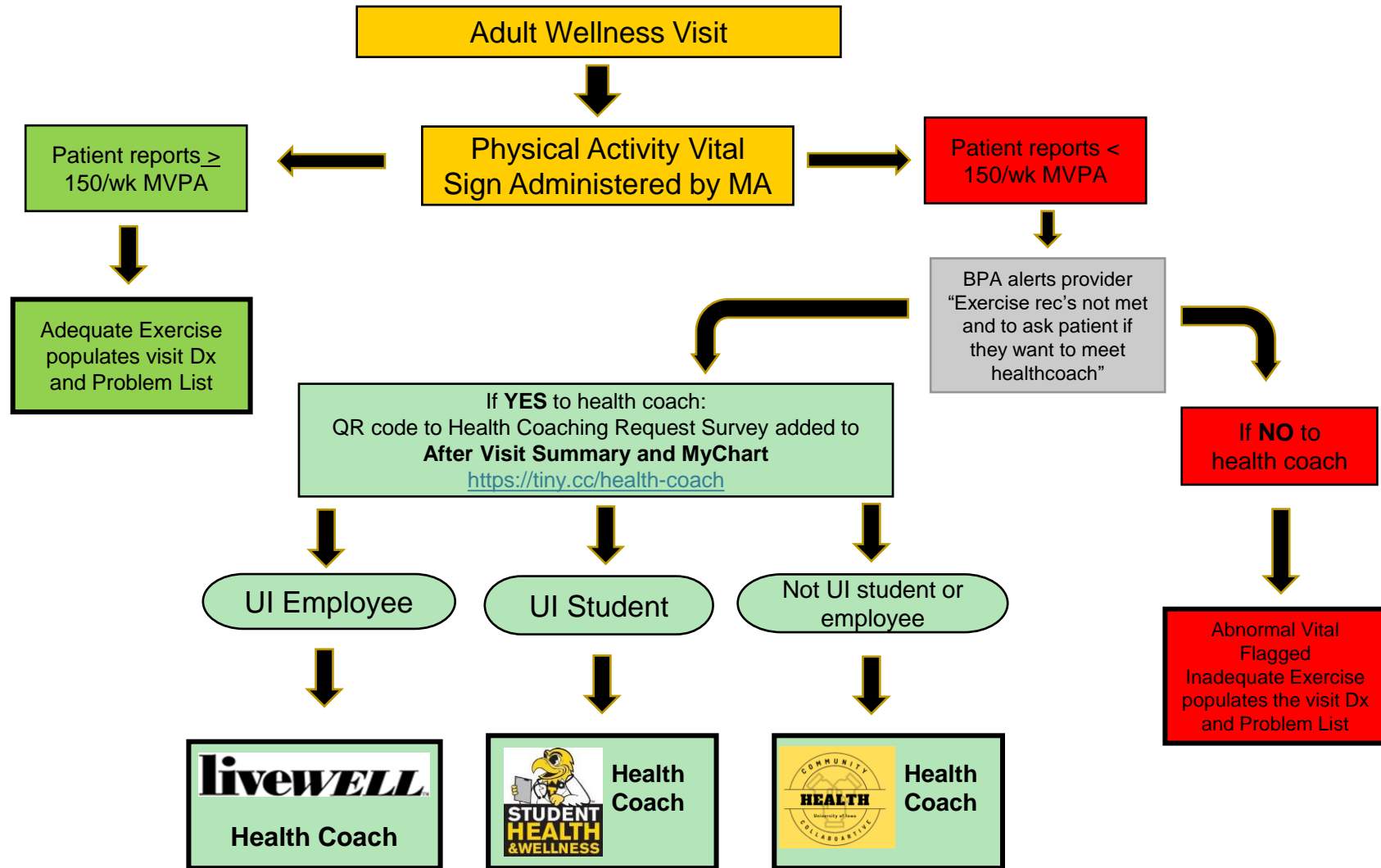
**COACHING CAN HELP:**

- Increase energy
- Build confidence
- Better sleep
- Improve nutrition
- Moving more
- Enhance mental well-being
- Positive connections

Health coaches are available to help you reach your health-related goals. Visits are free and confidential.

**IOWA**

# Clinical Workflow at UIHC Family Medicine



# liveWELL Health Coaching (Employees)

## Support and Accountability

Health Coaching is a nonjudgmental, collaborative process where the coach supports the individual in making healthy lifestyle changes in areas such as increasing energy, nutrition, exercise, and stress management.

- 5 free visits plus 1 month and 3 month follow up visits per 12 months
- UI employees
- Appointments available at Campus Recreation and Wellness Center (CRWC), Employee Health Clinic (Boyd Tower), and on Zoom
- Evening appointments available

## Referrals to well-being programs

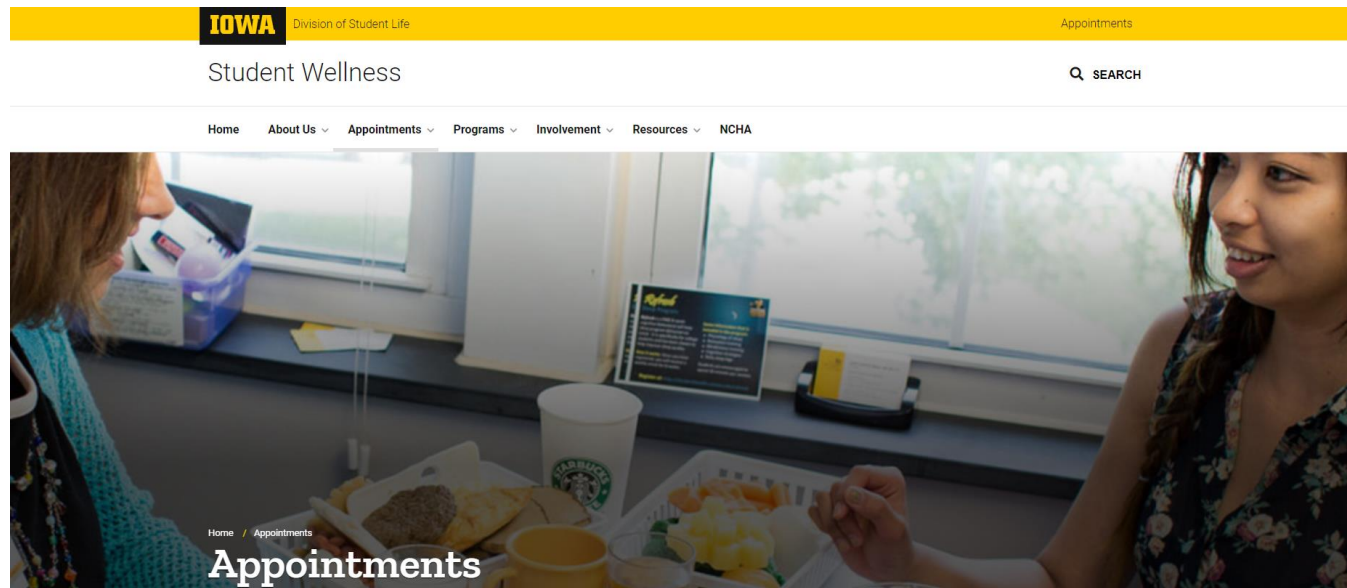
- [Mindfulness Bases Stress Reduction Program](#)
- [Personal Training](#)
- [Lifestyle Change Programs](#)
  - CDC's Diabetes Prevention Program (DPP)
  - 10-Week Lifestyle Change Program through Wondr Health
- [Employee Assistance Program](#)
- [Financial Coaching/Consultations](#)
- [Caregiving Resources](#)



**REQUEST**  
**APPOINTMENT**

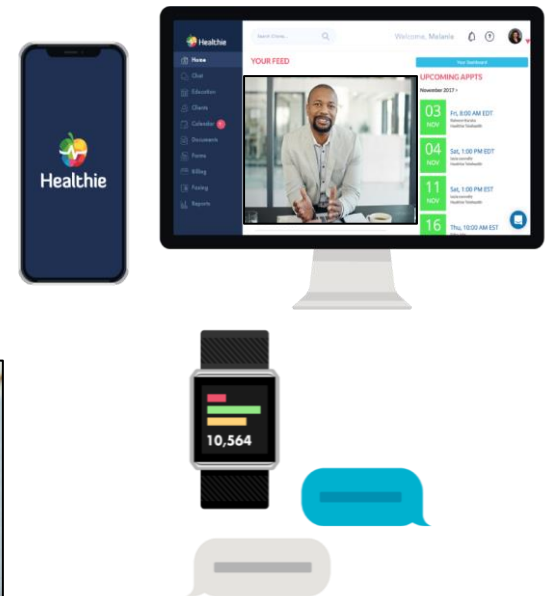
# UI Student Wellness Health Coaching (Students)

- Free for UI Students
- Visits every 2 weeks with Student Wellness Staff Member
- Zoom, CRWC, Westlawn



# Community Health Collaborative Health Coaching (Non-UI Employees/Students)

- Up to 5 free visits
- Remote (Zoom)
- Trained student health coaches
- For non-UI employees/students





# Evidence to Support Health Coaching But Research Still Early

- **Physical activity:** Small, positive, statistically significant effect of health coaching on physical activity measured as a continuous variable in steps or minutes compared with an inactive control.
- **Weight management:** Small, positive, statistically significant effect of health coaching on reductions in BMI compared with an inactive control.
- **Diet:** Small, positive effects of health coaching on decreasing fat intake in quantitative analysis and total calories in qualitative synthesis. Results were mixed for effect on fruit and vegetable intake, and only one study found a positive effect on diet adherence.
- **Medication adherence:** 1 of 3 trials found health coaching was associated with a significant improvement in medication adherence.



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