Movement as Medicine

A Clinician's Guide to Prescribing Physical Activity

Physical inactivity is a leading contributor to preventable chronic diseases, including heart disease, type 2 diabetes, obesity, and certain cancers. Regular physical activity not only helps prevent disease—it can also be used therapeutically to manage and, in some cases, reverse chronic conditions. Yet, fewer than 1 in 4 adults in the U.S. meet recommended activity levels.

At The Plantrician Project, we advocate for evidence-based, root-cause solutions to disease. Physical activity, alongside a predominantly whole food, plant-based diet, stress management, restorative sleep, and social connection, plays a vital role in healing.

Defining Movement

Understanding and clearly communicating the distinctions between physical activity, exercise, and health-related fitness is essential to supporting patients in reclaiming their health through lifestyle change.

Physical activity refers to any movement produced by skeletal muscles that increases energy expenditure above resting levels. This includes everything from household chores to active commuting.

Exercise, on the other hand, is a specific category of physical activity—it is structured, planned, repetitive, and intentionally performed to improve health or physical fitness.

It's critical that **patients incorporate both general physical activity and structured exercise** into their weekly routines. Regular daily movement helps counteract the health risks of sedentary behavior. Purposeful exercise, however, offers more targeted benefits, such as improved cardiorespiratory fitness, muscular strength, insulin sensitivity, and overall metabolic health.

As clinicians, our goal is to help patients reframe movement not as an obligation, but with gratitude as a privilege, opportunity and integral part of healing. Movement is medicine and movement is life—and it belongs in every lifestyle prescription.

Assessing the Impact of Movement

To effectively guide patients toward sustainable health transformation, it's helpful to understand how the physiologic benefits of exercise are measured. Health-related fitness encompasses five key domains:

1. **Body composition** – proportion of lean mass to fat mass, reflecting metabolic health
2. **Cardiovascular (aerobic) fitness** – capacity of the heart and lungs to deliver oxygen during sustained activity
3. **Muscular strength and endurance** – ability of muscles to exert force and perform repeated movements
4. **Flexibility/Mobility** – ability of joints to move through their full range of motion
5. **Neuromotor Exercise (Balance, Agility, Coordination)**– capacity to maintain stability and control during both dynamic movement and stationary positions

These domains offer a holistic picture of physical function and resilience. They serve as guideposts in evaluating progress, identifying areas for targeted support, and crafting exercise prescriptions that align with each patient's goals, abilities, and clinical needs.

The ACSM (American College of Sports Medicine) Guidelines for Exercise

Type	Guideline
Aerobic	150-300 min of moderate-intensity per wk OR 75-150 min of vigorous-intensity per wk
Strength Training	At least 2 days per week, targeting all major muscle groups
Flexibility	At least 2 days per week.
Balance	2-3 days per week, especially recommended for older adults

Evaluating Movement

Before diving into formal assessments or prescriptions, clinicians are encouraged to begin with curiosity and compassion. Understanding a patient's beliefs, preferences, and lived experience around physical activity can uncover barriers, build trust, and lay the foundation for sustainable change.

Consider asking open-ended questions such as:

- How do you feel about your current level of movement and activity?
- What role does physical activity play in your daily life or health journey?
- Are there types of movement you enjoy or used to enjoy?
- What would need to shift for exercise to become more of a priority for you?
- What do you feel you need more—or less—to support your physical well-being?

These conversations reframe movement not as a task to complete, but as a natural part of a whole life and a tool for empowerment, healing, and quality of life. They also allow clinicians to tailor recommendations in alignment with the patient's readiness, goals, and context.

Following this initial dialogue, a range of validated clinical tools are available to assess exercise safety, identify strengths and needs across health-related fitness domains, and support personalized, whole-person movement prescriptions.

Exercise Vital Sign

The exercise vital sign (EVS) is a simple, validated method for clinicians to monitor patients' physical activity and initiate a conversation about exercise, and it can be entered into the electronic health record (EHR). It is a self-reported exercise assessment consisting of 2 questions:

1. "On average, how many days per week do you engage in moderate to strenuous exercise (like a brisk walk)?"
2. "On average, how many minutes do you engage in exercise at this level?"

Additionally, clinicians are encouraged to ask patients:

- "On how many days per week do you engage in muscle-strengthening activities, such as bodyweight exercises or resistance training?"

Incorporating the EVS questions into each clinical encounter supports a more comprehensive approach to lifestyle assessment. Following this, patients should be screened in alignment with the ACSM Preparticipation Screening Recommendations to ensure safe and appropriate physical activity engagement.

Exercise Clearance

The ACSM has updated and simplified its preparticipation screening guidelines, reflecting the strong evidence that light- to moderate-intensity physical activity is safe for most individuals. Notably, traditional cardiovascular disease (CVD) risk factors are no longer considered reliable predictors of adverse events during exercise. Instead, the greatest risk occurs during vigorous-intensity activity. Current recommendations emphasize clinical judgment and physician clearance, rather than routine medical clearance or exercise testing, and are based on three key factors:

- The individual's current level of structured physical activity
- The presence of signs or symptoms suggestive of cardiovascular, metabolic, or renal disease
- The intended intensity of exercise

For practical application, a visual summary of the updated screening process is available at ACSM.

Assessment

Prior to initiating any structured exercise program, a comprehensive initial assessment is recommended. This evaluation serves multiple purposes: to determine an individual's current fitness status, establish a baseline for tracking progress, identify personalized needs, and guide the development of a safe and effective physical activity plan.

Conducted by a qualified exercise specialist, this assessment also supports the setting of meaningful short and long-term goals tailored to the individual's health status and lifestyle.

Assessments typically address the following five core domains of fitness:

1. **Body Composition**
2. **Cardiovascular Endurance**
3. **Muscular Strength and Endurance**
4. **Flexibility**
5. **Balance**

Body composition. Common field or in-office ways to assess this include body mass index (BMI) calculations, measuring waist circumference, performing skinfold measurements, or using a bioelectrical impedance device. All of these options have a window of error of approximately ± 4% to 6%.

Cardiovascular endurance. Field tests commonly used in clinical and community settings include:

- Treadmill protocols
- Walk/run assessments (e.g., the Rockport Walking Test, 12-minute walk/run)
- Step testing
- Ergometer (bike) tests

When traditional exercise testing is not feasible—due to equipment limitations, safety concerns, or individual constraints—nonexercise prediction methods offer a validated alternative. These estimation equations use variables such as age, resting heart rate, and physical activity level to approximate cardiovascular fitness and can be particularly useful in primary care and outpatient settings.

Muscular strength. Refers to the maximum force a muscle or muscle group can generate at a given speed. It is most commonly measured using the **one-repetition maximum (1-RM)**—the greatest amount of weight an individual can lift once with proper form. Standard assessments for muscular strength include:

- **Upper Body:** Bench press, overhead press
- **Lower Body:** Smith machine squat, leg press, knee extension

Local muscular endurance. Evaluates the ability of a muscle group to perform repeated contractions over time, or to sustain a submaximal contraction for an extended period. This metric reflects the muscle's ability to resist fatigue and support daily functional movement. Common field tests for muscular endurance include:

- **Curl-ups** (crunches)
- **Push-ups**
- **Wall sits**

Flexibility. Common methods to assess flexibility include:

- Joint range of motion assessment
- Sit-and-reach or modified/unilateral sit-and-reach test

FITT-P Principle

To support the development of safe, effective, and individualized exercise plans—particularly for cardiovascular and flexibility training.

- **F** – *Frequency*: How often physical activity is performed
- **I** – *Intensity*: The level of effort relative to an individual's capacity
- **T** – *Time*: The duration of each exercise session
- **T** – *Type*: The mode or kind of activity (e.g., walking, cycling, stretching)
- **P** – *Progression*: The gradual advancement of frequency, intensity, and/or duration over time

Cardiovascular Exercise Prescription

Frequency

The current evidence-based recommendation is **150–300 minutes/week of**

moderate-intensity or **75–150 minutes/week of vigorous-intensity** cardiovascular exercise—or a combination of both. Frequency may increase based on individual goals such as weight management or improved aerobic capacity, and should also reflect the patient's time availability and motivation.

Intensity

Exercise intensity can be measured **objectively** (e.g., heart rate monitoring) and **subjectively** using tools like the **Rate of Perceived Exertion (RPE)** scale. Because heart rate zones have built-in variability, combining both objective and subjective measures ensures more accurate and personalized prescriptions.

Time (Duration)

Exercise sessions can range from **as little as 5 minutes** in deconditioned individuals to **60 minutes or more**. Weekly totals of **200–300 minutes** are recommended for weight loss or enhanced fitness. Duration should align with fitness level, goals, and type of activity.

Type

Cardiovascular activities are classified as:

- **Impact** (e.g., running)
- **Non-impact** (e.g., swimming, cycling, elliptical)

Alternating between these modes helps reduce overuse injuries and promote consistency. The ideal balance is flexible and patient-driven.

Progression

To support long-term gains, progression should be gradual and based on frequency, intensity, and/or duration. **High-intensity interval training (HIIT)** or **sprint interval training (SIT)** should only be introduced once a patient can sustain **at least 20 minutes of moderate-intensity aerobic exercise** comfortably and consistently.

Flexibility Exercise Prescription

Frequency

Stretching can be performed 2 to 7 days per week depending on the individual's needs. Areas with restricted mobility often benefit from higher frequency or increased sets per session to enhance overall volume and effectiveness.

Intensity
Stretching should be performed to the point of mild to moderate discomfort, not pain. Intensity should be guided by individual tolerance to ensure safety and consistency.

Time (Duration)
Stretch duration typically ranges from 20 seconds to over 1 minute depending on the goal—whether to maintain or increase joint range of motion. Longer holds may be needed for more significant flexibility gains.

Type
Effective stretching techniques include passive stretching (external force applied), active stretching (muscle engagement), and proprioceptive neuromuscular facilitation (PNF). While all methods can improve flexibility, PNF has shown the greatest effectiveness when performed correctly.

Progression
Progression is appropriate in areas where joint restriction exists. Improvements are achieved through consistent frequency, sufficient volume, appropriate intensity, and gradually expanding to new end ranges. The goal is to restore and maintain optimal range of motion for functional movement and overall well-being.

Strength Exercise Prescription

Unlike cardiovascular or flexibility routines, strength training involves a more nuanced set of variables that must be thoughtfully tailored to each individual.

Key elements to consider include:

- **Frequency** (how often a muscle group is trained)
- **Sets per muscle group**
- **Repetitions per set**
- **Load and effort** (objective weight and perceived exertion)
- **Exercise selection**
- **Order of movements**
- **Rest intervals**
- **Tempo of each repetition**

The Importance of Body Alignment in Musculoskeletal Health and Injury Prevention

Proper body alignment is a foundational principle in maintaining musculoskeletal health. When the body's joints and spine are correctly aligned, muscles function efficiently, stress is evenly distributed across tissues and joints, and movement becomes more fluid and less prone to injury. Poor alignment due to repetitive work, computer and desk time, or old injuries,, on the other hand, can lead to chronic pain, abnormal joint wear, imbalances, and increased risk of injury—especially during exercise or repetitive movements.

Why Alignment Matters

- Reduces strain on joints, ligaments, and tendons
- Enhances movement efficiency and muscular balance
- Minimizes risk of overuse injuries and joint degeneration
- Improves posture, breathing, and overall body mechanics

Key Exercise Strategies for Supporting Alignment

- Core stability training: Strengthens abdominal and pelvic muscles to support spinal alignment and healthy movement (e.g., planks, bird-dog, dead bug)
- Postural exercises: Re-educates muscles to maintain upright posture (e.g., postural standing, wall angels, scapular retractions)
- Mobility work: Improves joint range of motion and reduces compensatory movement (e.g., hip openers, thoracic spine rotations, pigeon pose)
- Functional strength training: Reinforces alignment under load with proper form within a safe range of motion and progressing as tolerated to full range of motion (e.g., squats, lunges, deadlifts with form cues)

How to Integrate into Your Fitness Program

- Begin each workout with alignment-focused warm-ups (e.g., foam rolling, dynamic stretches)
- Include core and postural exercises 2–3x/week
- Perform strength training with a focus on form over weight
- Use a mirror, coach, or video feedback to check alignment
- Consider periodic assessments by a physical therapist or trainer

Good alignment is not static—it's a dynamic balance and process that requires continuous attention. By prioritizing it in your fitness routine, you protect your body for the long run and improve every aspect of physical performance.

Partnering with Rehabilitation and Exercise Professionals

Lasting change often requires a collaborative, team-based approach. For many patients, working alongside a qualified rehabilitation or exercise professional can provide the personalized support, accountability, and progression strategies needed to turn intentions into long-term habits.

Whether the goal is injury recovery, chronic disease management, or simply building confidence with a new movement routine, there is a professional to meet each patient's unique needs. This may include:

- A **physical therapist** or **athletic trainer** for rehabilitation or injury prevention
- An **exercise physiologist** for cardiac or metabolic conditioning
- A **certified personal trainer** or **strength and conditioning coach** to design and progress resistance programs

Conclusion

Physical activity and exercise are not simply adjuncts to clinical care—they are powerful, evidence-based tools for preventing, treating, and even reversing chronic disease. As Plantrician Providers, we are in a unique position to elevate the role of movement as a foundational element of healing.

By engaging patients in conversations about movement, offering personalized recommendations using the FITT-P framework, and connecting them to qualified rehabilitation or exercise professionals when appropriate, we help shift the paradigm from disease management to health restoration. Every step, every stretch, every strength-building moment is a step toward vitality—and it starts with us.

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