This document has been written for clinicians. The content was developed by the Integrative Medicine Program, Department of Family Medicine, University of Wisconsin-Madison School of Medicine and Public Health in cooperation with Pacific Institute for Research and Evaluation, under contract to the Office of Patient Centered Care and Cultural Transformation, Veterans Health Administration.

Information is organized according to the diagram above, the Components of Proactive Health and Well-Being. While conventional treatments may be covered to some degree, the focus is on other areas of Whole Health that are less likely to be covered elsewhere and may be less familiar to most readers. There is no intention to dismiss what conventional care has to offer. Rather, you are encouraged to learn more about other approaches and how they may be used to complement conventional care. The ultimate decision to use a given approach should be based on many factors, including patient preferences, clinician comfort level, efficacy data, safety, and accessibility. No one approach is right for everyone; personalizing care is of fundamental importance.
WHOLE HEALTH: CHANGE THE CONVERSATION
Prescribing Movement
Clinical Tool

Exercise and other forms of physical activity are inarguably essential parts of healthy living. It is difficult to find a component of health that physical activity and exercise do not have the potential to improve.\textsuperscript{1,2} At the same time, there is a rapidly growing epidemic of sedentariness that threatens human health on a global scale.\textsuperscript{3} Despite this trend, how might we as clinicians inspire and support our patients to maximize the potential benefits of exercise? The following guide offers practical concepts and tools to help you and your patients to “work your body.”

Basic Concepts

Being fluent in basic concepts and terminology is important when articulating prescriptions for physical activity and exercise. Table 1 lists some key terms to be aware of.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity</td>
<td>Any activity that moves the skeletal muscles of the body and increases energy output (e.g., walking to work)</td>
</tr>
<tr>
<td>Exercise</td>
<td>Structured and repetitive physical activity with a specific intent, usually to improve some component of physical fitness (e.g., weight lifting for muscular strength)</td>
</tr>
<tr>
<td>Physical fitness</td>
<td>Various health- or skill-related physical attributes (e.g., muscular strength)</td>
</tr>
</tbody>
</table>

In short, physical activity, including structured exercise, contributes to health via the development of physical fitness.

There are many ways of categorizing types of physical activity, exercise, and physical fitness. The following scheme is based on that of the American College of Sports Medicine (ACSM).\textsuperscript{1} In it, each type of exercise corresponds to one of the main types of physical fitness. Body composition, however, is included as an additional component of physical fitness without corresponding to a specific type of exercise. Having a grasp of the major types of exercise can help us to customize recommendations in a patient-centered approach. These exercise types are described in Table 2.
**Table 2. Types of Exercise and Physical Fitness**  
(adapted from the American College of Sports Medicine)

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Description</th>
<th>Prototype</th>
<th>Physical Fitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic</td>
<td>Exercise that increases cardiac output and oxygen consumption</td>
<td>Jogging/distance running</td>
<td>Cardiorespiratory fitness</td>
</tr>
<tr>
<td>Resistance</td>
<td>Exercise that use resistance to develop the skeletal muscles</td>
<td>Weight lifting</td>
<td>Muscular fitness</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Exercise that stretches the soft tissues around joints to maintain or gain range of motion or limberness</td>
<td>Yoga (asanas)</td>
<td>Flexibility</td>
</tr>
<tr>
<td>Neuromotor (a.k.a. functional fitness training)</td>
<td>Exercise that improves a range of motor skills such as balance, agility, and proprioception</td>
<td>Tai chi</td>
<td>Neuromotor fitness</td>
</tr>
<tr>
<td>(n/a)</td>
<td>Relative amounts of bone, muscle, and fat in the body</td>
<td>BMI and waist-to-hip ratio are imperfect surrogates</td>
<td>Body composition</td>
</tr>
</tbody>
</table>

It is important to realize that while many forms of exercise develop predominately one type of physical fitness, most forms of exercise contribute to more than one type of physical fitness. For example, while distance running develops mainly cardiorespiratory fitness, it also develops muscular fitness to some degree.

**Understanding Intention in Exercise**

In addition to considering exercise according to the type of fitness it develops, it may be helpful to clarify the therapeutic intention of the exercise. Improving a patient’s aerobic fitness might be a good goal for a clinician interested in preventing coronary artery disease, but that patient may be more motivated by dancing for recreation. As prescribers, recognizing and articulating the various reasons why we are recommending exercise can help to create appropriate specificity in our recommendations and clarify the assessment of their results; it personalizes care. Focusing on the patient’s intentions for a given exercise might bring us closer to supporting their desired behavioral change. Table 3 lists common reasons for promoting physical activity.
### Table 3. Common Reasons for Promoting Physical Activity

<table>
<thead>
<tr>
<th>Intention</th>
<th>Purpose or Goal</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitative</td>
<td>Fixing what is broken</td>
<td>Range of motion exercises for a sprained ankle</td>
</tr>
<tr>
<td>Preventive</td>
<td>Stopping disease before it starts</td>
<td>Walking on a treadmill to prevent a myocardial infarction</td>
</tr>
<tr>
<td>Fitness</td>
<td>Being or becoming fit</td>
<td>Lifting weights to be stronger</td>
</tr>
<tr>
<td>Performance</td>
<td>Achievement</td>
<td>Improving endurance for tennis competition</td>
</tr>
<tr>
<td>Cosmetic</td>
<td>Looking good</td>
<td>Cross-training to increase muscle definition</td>
</tr>
<tr>
<td>Recreational</td>
<td>Having fun</td>
<td>Salsa dancing on the weekends</td>
</tr>
<tr>
<td>Wellness</td>
<td>Feeling good</td>
<td>Running for enhanced mood</td>
</tr>
</tbody>
</table>

There is an interesting study that suggests some of the potential significance of intention, and the placebo effect, when it comes to physical activity and exercise. In this study, the researchers took a group of 84 female housekeepers who worked in hotels and assigned half of them to an “informed” condition in which they were educated about how their work was a form of physical activity that exceeded national recommendations for physical activity. The control group was not told anything new about their work. At the end of 4 weeks, although the physical activity between groups had not changed, the group that had the “informed” mindset about their work had significant improvement in several physiological parameters such as weight, blood pressure, and waist-to-hip ratio. The authors concluded that these findings support the hypothesis that exercise affects health at least partially through the placebo effect, which is dependent on the “mindset” of the participant. Developing a clear intention for a particular exercise might similarly be critical to the potency of that exercise.

**Expert Recommendations for Exercise**

Numerous recommendations and guidelines exist for exercise and physical fitness. These guidelines reflect the emphasis on aerobic exercise from the research literature and are helpful for setting a reasonable standard goal for most patients.

The American College of Sports Medicine has a good set of recommendations for adults, summarized in Table 4.
### Table 4. ACSM Exercise Recommendations for Healthy Adults

<table>
<thead>
<tr>
<th>Type of Exercise</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate-intensity* cardiorespiratory</td>
<td>≥30 minutes/day on ≥5 days/week for a total of ≥150 minutes/week OR</td>
</tr>
<tr>
<td>Vigorous-intensity** cardiorespiratory</td>
<td>≥20 minutes/day on ≥3 days/week for a total of ≥75 minutes/week OR</td>
</tr>
<tr>
<td>Combination of moderate- and vigorous-intensity</td>
<td>To achieve a total energy expenditure of ≥500-1,000 MET-minutes/week***</td>
</tr>
<tr>
<td>Resistance</td>
<td>For each of the major muscle groups AND</td>
</tr>
<tr>
<td>Neuromotor</td>
<td>Involving balance, agility, and coordination, 2-3 days/week AND</td>
</tr>
<tr>
<td>Flexibility</td>
<td>For each the major muscle-tendon groups, a total of 1 minute per exercise on ≥2 days/week</td>
</tr>
</tbody>
</table>

* Examples of moderate-intensity exercise include brisk walking and gardening.
** Examples of vigorous-intensity exercise include swimming or jogging.
*** A MET, or metabolic equivalent, is a unit used to gauge the intensity of exercise. 1 MET is being sedentary. A MET-minute incorporates how long is spent at various intensity levels. For more information, see [http://www.cdc.gov/nccdphp/dnpa/physical/pdf/PA_Intensity_table_2_1.pdf](http://www.cdc.gov/nccdphp/dnpa/physical/pdf/PA_Intensity_table_2_1.pdf).

The U.S. Department of Health and Human Services’ 2008 *Physical Activity Guidelines for Americans* are nearly identical to the above guidelines for adults and provide additional guidelines for special groups such as children, pregnant women, and persons with disabilities: [www.cdc.gov/physicalactivity/everyone/guidelines/index.html](http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html).

### Applying the Recommendations

The guidelines cited here comment that physical activity beyond the stated amount has added benefit. Additionally, if individuals are unable to meet the minimum recommended amounts of activity, they should nonetheless do as much as they can. Given that only about 20% of American adults meet the physical activity guidelines with respect to both aerobic and muscle-strengthening, supporting patients in moving *however and whenever* possible may be a reasonable approach.

The importance of non-aerobic exercise and fitness is generally under-recognized and may be under-emphasized by the current research literature and guidelines. In light of our increasingly diverse society, we should consider unique forms of exercise (like yoga and tai chi) as well as common everyday sources of physical activity (like walking for transportation and gardening for neuromuscular benefits) to optimize our health.
Approaches to Counseling and Prescribing

While every provider develops her or his own unique style around supporting a patient's behavioral change, having a systematic approach can be more helpful than a haphazard one. The following are some approaches to consider when working from a Whole Health approach:

- **Learn and use structured techniques such as motivational interviewing or health coaching.** As with facilitating other lifestyle or behavioral changes, these approaches might help support a collaborative, respectful, and open-minded process. (For more information, see [www.motivationalinterviewing.org](http://www.motivationalinterviewing.org) and Global Advances in Health and Medicine, May 2013 special themed issue.) Many VA clinicians have already been trained in this method.

- **Use a structured, brief intervention when recommending exercise.** The UK's National Institute for Health and Care Excellence (NICE) has an evidenced-based guideline on “providing brief advice for adults in primary care” on the topic of physical activity. This set of recommendations is based on a vast body of research supporting brief consultation-based interventions for facilitating behavioral change in patients. The NICE recommendations for offering advice on physical activity are summarized as follows:
  - Advise those who are inactive to be more active, targeting minimum physical activity recommendations (such as the ACSM’s) and emphasizing the benefits of physical activity.
  - Tailor the brief advice to the person’s motivations, goals, current activity and ability, circumstances, preference, barriers, and health status.
  - Provide information about opportunities to be physically active.
  - Consider giving a written summary of the advice given.
  - Record the outcomes of the discussion.
  - Follow up on progress when there is the opportunity.

- **Write your specific exercise prescriptions on a prescription pad.** Some authors have argued that given the potency and risks of exercise interventions, they should be dosed with the care warranted for the prescribing of drugs.

- **When articulating an exercise plan, specify the FITT:**
  - Frequency
  - Intensity
  - Type
  - Time (duration)
Practical Advice for *Whole Health*

In addition to standard recommendations, a *Whole Health* approach might include or emphasize some easily overlooked features when creating recommendations for exercise. The following are some points to consider:

- **Prioritize approaches to exercise that enhance mindful self-awareness.** On one hand, exercise may deepen and enrich one’s feeling and awareness of the body. On the other hand, exercise may allow one to entrench and engrain habits of ignoring and suppressing important biological cues. True to the Whole Health approach, exercise forms such as yoga and tai chi might be particularly prone to facilitating insight into the body, breath, and mind.

- **Practice and teach exercise as a way of understanding the body.** Mindfulness can be applied to virtually any physical activity, and any exercise is an opportunity to develop self-awareness of the body. As trained clinicians we have the opportunity not only to develop a personal understanding of our bodies through exercise, but also to share this process of discovery with our patients.

- **Encourage balance as a guiding principle.** Hans Selye was the first to apply the term “stress” to physiological systems, and he also described how repeated exposure to an *appropriately intense stressor* leads to adaptation or conditioning.\(^{12}\) The emphasis here is on appropriate intensity. In lay terms, we might teach our patients about the “Goldilocks Principle” by focusing on exercise that is neither too intense nor too relaxed, but *just right*.

- **Consider multipurpose activity if time is an issue.** Whereas multitasking with exercise (e.g., reading a magazine while running on a treadmill) may be the opposite of a mindful approach, multipurpose physical activity (e.g., walking for exercise and transportation) might be the most practical approach for a busy schedule. Consciously recognizing and remembering the multiple intentions served by a given physical activity (e.g., gardening for neuromotor fitness, prevention, recreation, *and* food production!) might also help to sustain motivation for healthy behaviors.

- **Encourage the integration of physical activity and exercise in daily life.** There is fair support for using short bursts of activity frequently throughout the day instead of the traditional continuous daily session.\(^1\d\) One may not have time to peddle an exercise bike for an hour 5 days a week, but one may be able to spend an hour biking to and from work 5 days a week. These activities would be roughly equivalent in terms of benefits.

- **Reminder: carefully consider all important contraindications and precautions for your patient and the potential exercise.** In addition to comorbid illness, exercise history, and current level of physical fitness, also consider the patient’s belief system and goals, not to mention access and environmental hazards, when making recommendations. Consider a separate preparticipation assessment for patients with severe or numerous comorbidities.

- **Model and disclose healthy behaviors to your patients.** Physicians who disclose their own healthy behaviors such as exercise are more likely to motivate patients toward healthy behaviors.\(^15\d\) In addition, positive exercise habits may increase
providers’ credibility to patients\textsuperscript{15} and make them more confident in recommending exercise.\textsuperscript{17}

- **Encourage fun.** Most people like to have fun, and if they don’t, they should have more anyway. See The Healing Benefits of Humor and Laughter clinical tool for more information.

## Summary

- It is difficult to find a component of health that physical activity and exercise do not have the potential to improve.
- There is a rapidly growing epidemic of sedentariness that threatens human health on a global scale.
- Physical activity, including structured exercise, contributes to health via the development of physical fitness.
- There are four major types of exercise, which correspond to four types of physical fitness: cardiorespiratory, muscular strength, flexibility, and neuromotor fitness. Body composition is a fifth type of physical fitness.
- There are numerous distinct intentions or reasons to exercise such as rehabilitative, preventive, fitness-oriented, performance-oriented, cosmetic, recreational, and wellness-oriented.
- The ACSM and CDC recommendations are summarized in Table 4.
- Develop a systematic approach to prescribing exercise such as motivational interviewing, health coaching, or a structured brief intervention. Formalize your recommendations or plan verbally and in writing, specifying FITT (frequency, intensity, type, and time [duration]) of physical activity/exercise.
- Recognize and encourage the opportunity to develop mindful self-awareness in exercise and physical activity.
- Model and disclose healthy exercise habits to patients.
Additional Resources

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA's MOVE! Program</td>
<td>Excellent resources related to weight loss, and physical activity is no exception</td>
<td><a href="http://www.move.va.gov">www.move.va.gov</a></td>
</tr>
<tr>
<td>American College of Sports Medicine website</td>
<td>Numerous guidelines and resources for clinicians</td>
<td><a href="http://www.acsm.org">www.acsm.org</a></td>
</tr>
<tr>
<td>Centers for Disease Control information</td>
<td></td>
<td><a href="http://www.cdc.gov/physicalactivity/everyone/index.html">www.cdc.gov/physicalactivity/everyone/index.html</a></td>
</tr>
<tr>
<td>Let's Move!</td>
<td></td>
<td><a href="http://www.letsmove.gov">www.letsmove.gov</a></td>
</tr>
</tbody>
</table>

Whole Health: Change the Conversation Website

Interested in learning more about Whole Health? Browse our website for information on personal and professional care.


This clinical tool was written by Surya Pierce, MD, ABIHM, RYT, integrative medicine family physician at University of Oklahoma Health Services.

References


