Physical Activity
Research has shown that physical activity decreases pain, improves function and reduces disability associated with all forms of arthritis.\textsuperscript{37} Additionally, regular physical activity can help people achieve or maintain a healthy weight, which is particularly important given that overweight and obesity are also known risk factors for OA.\textsuperscript{38}

The safest and most effective physical activities for adults with OA of the hip and/or knee are low impact, moderate intensity aerobics — such as walking, water exercise and cycling — and muscle strengthening exercises that use different forms of resistance. Investments of as little as 60 minutes per week can yield some improvements for people with OA,\textsuperscript{26} but a minimum of 150 minutes (2.5 hours) of moderate intensity aerobic and two days of muscle strengthening exercise per week is recommended to improve OA pain and function and to support prevention and management of other chronic conditions.\textsuperscript{39}

In general, adults with OA should avoid physical inactivity and be encouraged to participate in any activity that their abilities and conditions allow. These activities can be delivered in a variety of formats — in individual homes and group settings or individualized with trained exercise instructors, to name a few. While no single type of activity or delivery format has been determined to be more effective than another, programs with 12 or more supervised contact sessions, regardless of delivery format, are likely to yield the greatest benefit.\textsuperscript{40} Adults should view these activities to be in addition to their usual daily activities such as shopping, walking to work and housecleaning.

Low impact, moderate intensity aerobic physical activity and muscle strengthening exercise should be promoted widely as a public health intervention for adults with OA of the hip and knee.

Programs with Demonstrated Benefits for People with Arthritis\textsuperscript{41}
- Active Living Every Day
- Arthritis Foundation Aquatics Program
- Arthritis Foundation Exercise Program
- Arthritis Foundation Walk with Ease
- EnhanceFitness®
- Fit & Strong!
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**Recommended Physical Activity for Adults**

- 2 hours and 30 minutes a week of moderate-intensity, or 1 hour and 15 minutes (75 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. Aerobic activity should be performed in episodes of at least 10 minutes, preferably spread throughout the week.

- Additional health benefits are provided by increasing to 5 hours (300 minutes) a week of moderate-intensity aerobic physical activity, or 2 hours and 30 minutes a week of vigorous-intensity physical activity, or an equivalent combination of both.

- Muscle-strengthening activities that involve all major muscle groups performed on 2 or more days per week.

**Special Considerations for People with Chronic Conditions (including Osteoarthritis)**

- Any activity is better than none. Adults with chronic conditions obtain important health benefits from regular physical activity.

- When adults with chronic conditions do activity according to their abilities, physical activity is safe.

- Adults with chronic conditions should be under the care of healthcare providers. People with chronic conditions and symptoms should consult their healthcare providers about the types and amounts of activity appropriate for them.


Most adults with mild to moderate OA can initiate and monitor their physical activity safely, without professional advice. However, persons with special issues, such as severe lower extremity malalignment or multiple co-existing chronic conditions, should consult with a healthcare professional to select activities that are low impact and appropriate to their ability. Professional advice should also be sought if any OA symptoms are exacerbated by physical activity, and care should always be taken to avoid injury.

**Design Packaged Programs**

Not everyone with OA will have access to a group exercise program or be inclined to join one. Overcoming these obstacles requires expanding the format options for delivery of group programs.
We must continue to identify additional effective packaged programs that can be delivered safely in a variety of accessible and acceptable formats such as group classes, home-based instruction and self-directed guides; and in different settings such as the community, worksites and healthcare system.

Implement Physical Activity Guidelines
The Physical Activity Guidelines for Americans43 issued by the U.S. Department of Health and Human Services promote minimum levels of activity for all people, including the elderly and individuals who have musculoskeletal disorders such as OA. They also emphasize that certain forms of physical activity are actually beneficial in terms of managing symptoms such as pain faced by people with OA.

We must implement the 2008 U.S. Department of Health and Human Services Physical Activity Guidelines for Americans fully and encourage the development and implementation of strategies to increase physical activity and reduce inactivity among people with OA.

Build Supportive Environments
The Guide to Community Preventive Services demonstrates that street- and community-scale urban design land use policies and practices can be used effectively to increase physical activity for a variety of populations.44 These include building codes, road design standards and government policies that create safer and more inviting environments, reduce potential for injury, assure continuity and connectivity of sidewalks, and address proximity of residential housing to stores, jobs, schools and recreation. The Guide also recommends increased access to places for physical activity combined with informational outreach.

In a major new chronic disease initiative (www.cdc.gov/nccdphp/recovery), CDC identified five areas of action for policy and environmental change related to obesity, physical activity and nutrition referred to as MAPPS Interventions. MAPPS stands for Media, Access, Price, Point

“Exercise has become very important to me. I want to keep mobile, and the old adage “Use it or lose it” is very true. The stiffness we feel in the morning—exercise helps it go away. I wish the millions of others with osteoarthritis would know that exercising will decrease their pain and get them moving.”

Estelle Fay Lovejoy, from Rhode Island 5-year Arthritis Foundation Exercise Program participant
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of decision prompts, and Social support. Action in these five areas using evidence-based policy change can make healthy choices default choices, and should include actions that reach populations with OA. (For more information on MAPPS, see www.cdc.gov/nccdphp/recovery.)

✓ We must accept and implement built-environment, land use and design policies, and other policy and environmental supports proven to increase physical activity, such as those found in the Guide to Community Preventive Services and other evidence-based sources, since these population-based approaches also impact people with OA.

✓ We must pursue and fully embrace the strategies outlined in the Guide to Community Preventive Services and the Physical Activity Guidelines for Americans and other evidence-based sources that promote physical activity in the workplace.

Overcome Barriers to Activity and Participation

It is no secret that physical activity can be daunting to people with OA, particularly those who have limited mobility. The episodic pain they experience may understandably inhibit their willingness to exert themselves, for fear of exacerbating their discomfort or worsening their condition. Though effective physical activity interventions for OA exist, they are currently underutilized.

✓ We must continue to examine the role of physical activity as an OA management strategy, with attention to meeting the Physical Activity Guidelines for Americans and Healthy People recommendations for reducing the prevalence of physical inactivity among adults with arthritis.

Key Research Priorities

- Develop and test community-based behavior change and policy interventions aimed at improving physical activity behavior of large populations of persons with or at risk for knee and hip OA.

- Identify key characteristics or essential elements of effective aerobic and muscle strengthening interventions for people with OA, particularly to define the optimal dose of activity that produces clinically relevant and patient-oriented OA outcomes including meaningful improvement in quality of life.

- Understand the interface between physical activity programs and clinical care for persons with OA (e.g., the extent to which healthcare provider counseling for physical activity influences an OA patient’s behavior, healthcare provider referrals, etc.).

- Conduct cost-effectiveness studies comparing different formats and delivery options of physical activity interventions in OA populations.