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## Physical Activity & Daily Life

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### Abstract

*Studies of affective states and physical activity have been conducted in controlled laboratory settings, but the external validity of findings is questionable. Physical activity is any voluntary bodily movement produced by skeletal muscles that requires energy expenditure. It has many health benefits, ranging from reduced risk of premature death to improved mobility, fitness, and quality of life. Cardiovascular disease is the leading health-related cause of death in U.S. adult men and women, and participating in the recommended duration of physical activity as outlined in the Physical Activity Guidelines for Americans has been found to provide the greatest health benefits. Research suggests that moderate-intensity physical activities produce a greater protective effect than low-intensity activities. Exercise has a positive impact on mental health, relieves stress, improves memory, helps sleep better, and boosts overall mood. Children and adolescents aged 5-17 should accumulate at least 60 minutes of moderate-to-vigorous physical activity daily, while adults aged 18-64 should increase their activity to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic activity per week.*

**KEYWORDS:** Physical activity, Aerobic activity, Health, Daily life

### INTRODUCTION

Physical activity has been linked to increased emotional well-being, but research is lacking on the extent to which these theories underlie individual motivations to engage in daily physical activity. Several behavioural theories suggest that individuals will engage in behaviours that provide pleasure or anticipate a positive affective response, leading to increased physical activity over time.

Studies of affective states and physical activity have been conducted in controlled laboratory settings. Although lab studies allow researchers to have a precise control of the physical activity session (i.e., the intensity and duration), and an exact timing of when to assess affective states, the external validity of findings from these studies is questionable since both behaviours and emotion reactions could differ dramatically between lab-based and naturalistic settings (Gunes et al., 2008; Bussmann et al., 2009). One of the reasons is that in the laboratory, conditions are prescribed to participants, while in the real world; individuals have natural preferences and choices about situations they seek and avoid (Wilhelm and Grossman, 2010). Unveiling the acute relationships between affective states and physical activity in free-living

situations could help to shed light on how people make decisions to engage in physical activity. However, most lab-based studies focus on affective responses either during or after physical activity. A better understanding of whether affective states predict physical activity could have important implications for promoting everyday physical activity, especially long-term physical activity maintenance.

The current review aimed to answer the following questions among non-clinical populations:

- (1) Do affective and physical feeling states predict subsequent physical activity levels in freelifing situations?
- (2) Does free-living physical activity lead to improvement in subsequent affective and physical feeling states (e.g., increases in positive affect, decreases in negative affect)?

## PHYSICAL ACTIVITY

Physical activity is defined as any voluntary bodily movement produced by skeletal muscles that require energy expenditure. Physical activity encompasses all activities, at any intensity, performed during any time of day or night. It includes both exercise and incidental activity integrated into daily routine. This integrated activity may not be planned, structured, repetitive or purposeful for the improvement of fitness, and may include activities such as walking to the local shop, cleaning, working, active transport etc.

## PHYSICAL ACTIVITY & EXERCISE

Exercise and physical activity are both physical activities performed during leisure time with the primary purpose of improving or maintaining physical fitness, physical performance, or health. Exercise is defined as a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective. Physical activity can also be unplanned, unstructured, random, and non-purposeful.

## TYPES OF PHYSICAL ACTIITY



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## **AEROBIC PHYSICAL ACTIVITY**

Aerobic exercise, also known as cardiovascular or “cardio,” includes anything that gets your breathing and heart rate up. Aerobic activity moves your large muscles, such as those in your arms and legs. Aerobic activity is also called endurance activity.

### **Examples of aerobic activity**

Depending on your fitness level, aerobic activity can be light, moderate, or vigorous in intensity:

- Pushing a grocery cart around a store
- Gardening, such as digging or hoeing that causes your heart rate to go up
- Walking, hiking, jogging, running
- Water aerobics or swimming laps
- Bicycling, skateboarding, rollerblading, and jumping rope
- Ballroom dancing and aerobic dancing
- Tennis, soccer, hockey, and basketball

### **Intensity levels of aerobic activity**

You can do aerobic activity with different levels of intensity, including:

- Light-intensity activities are common daily activities that don’t require much effort.
- Moderate-intensity activities make your heart, lungs, and muscles work harder than light- intensity activities do. On a scale of 0 to 10, moderate-intensity activity is a 5 or 6 and produces noticeable increases in breathing and heart rate. A person doing moderate- intensity activity can talk but not sing.
- Vigorous-intensity activities make your heart, lungs, and muscles work hard. On a scale of 0 to 10, vigorous-intensity activity is a 7 or 8. A person doing vigorous-intensity activity can’t say more than a few words without stopping for a breath.

Moderate- and vigorous-intensity aerobic activities are better for your heart than light- intensity activities. However, even light-intensity activities are better than no activity at all.

The level of intensity depends on how hard you have to work to do the activity. To do the same activity, people who are less fit usually have to work harder than people who are more fit. So, for example, what is light-intensity activity for one person may be moderate-intensity for another.

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## **ANAEROBIC PHYSICAL ACTIVITY**

Aerobic means “with oxygen and anaerobic means “without oxygen.” Both are important for your overall health because they challenge your body in different ways. Anaerobic exercise involves short, fast, high-intensity exercises that don't make your body use oxygen like it does for cardio (or aerobic) activities.

### **Types of Anaerobic Exercise**

Examples of anaerobic exercise include:

- High-intensity interval training (HIIT)
- Strength training and weight lifting that challenges your body
- Calisthenics like jump squats, box jumps, and plyometric.

### **How Much Anaerobic Exercise Do You Need Per Week?**

- The CDC recommends an average of 150 minutes of moderate activity each week, along with 2 or more days of strength training (or anaerobic exercise).
- This breaks down to about 30 minutes of moderate aerobic activity, or 15 minutes of vigorous aerobic activity, 5 days per week, along with 2 days of strength training.
- Strength training is just as important as cardio for your health. Remember that you're more likely to stick to an exercise routine if it's something you enjoy doing. If you try an anaerobic exercise and don't love it, try something else. Also, consider switching up your routine on a regular basis so you continue to challenge your body while keeping yourself from getting bored.

## **STRENGTHENING**

### **Muscle-strengthening activity**

Muscle-strengthening activities improve the strength, power, and endurance of your muscles. Doing push-ups and sit-ups, lifting weights, climbing stairs, and digging in the garden are examples of muscle-strengthening activities.

### **Bone-strengthening activity**

With bone-strengthening activities, your feet, legs, or arms support your body's weight, and your muscles push against your bones. This helps make your bones strong. Running, walking, jumping rope, and lifting weights are examples of bone-strengthening activities.

Muscle-strengthening and bone-strengthening activities also can be aerobic, depending on whether they make your heart and lungs work harder than usual. For example, running is both an aerobic activity and a bone-strengthening activity.

### **BALANCE ACTIVITY**

These kinds of activities can improve your ability to resist forces that can make you fall, either while stationary or moving. Walking backward, standing on one leg, walking heel-to- toe, practicing standing from a sitting position, or using a wobble board are examples of balance activities. Strengthening muscles of the back, abdomen, and legs also improves balance.

### **FLEXIBILITY ACTIVITIES**

Stretching helps improve your flexibility and your ability to fully move your joints. Touching your toes, doing side stretches, and doing yoga exercises are examples of stretching.

### **HOUSEHOLD ACTIVITIES**

Household activities involves physical activity and is an indicator of the ability to live independently, the researchers wanted to explore whether doing the household chores might contribute to healthy aging and boost physical and mental capacity among older adults in a wealthy country.

#### **Example of some household activities as follow:**

1. Vacuum Entire House.
2. Sweep Or Mop Your Floors
3. Run Up And Down The Stairs
4. Do Calf Raises As You Wash Dishes
5. Clean All Of Your Windows (Inside & Out)
6. Weed Your Garden & Trim Plants
7. Wash Your Car By Hand
8. Make-The-Bed Triceps Dips
9. Toilet Split Squat.

### **PHYSICAL ACTIVITY AND ITS BENEFIT ON DAILY LIFE**

#### **Physiological Benefits**

Physical activity has many health benefits, ranging from risk reductions to improved mobility, fitness, and quality of life.

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### **Reduced Risk of Premature Death**

Inflammation in the body is linked to future risk for chronic diseases and conditions. Physical activity reduces systemic inflammation and has been linked to a reduction in all-cause risk of premature death. Research suggests that the protective benefits of physical activity may improve with additional time spent in exercise. However, individuals should be aware that overtraining may occur. In one recent study, individuals with the highest levels of physical activity participation and fitness had the lowest risk of premature death (Warburton, Nicol, & Bredin, 2006).

### **Reduced Risk for Cardiovascular Disease**

Cardiovascular disease (CVD) is the leading health-related cause of death in U.S. adult men and women. Cardiorespiratory fitness has been associated with risk reductions for CVD, and participating in the recommended duration of physical activity as outlined in the Physical Activity Guidelines for Americans has been found to provide the greatest health benefits.

### **Reduced Risk for Diabetes**

Physical activity and exercise have been linked to increased insulin sensitivity and glucose metabolism, with both aerobic and resistance exercise associated with a risk reduction for type 2 diabetes.

### **Improved Blood Pressure Control**

Hypertension, or an abnormal elevation in blood pressure, is a risk factor for heart attack, stroke, and congestive heart failure (American Heart Association, 2014). A variety of physical activity types have been associated with decreased blood pressure, such as habitual aerobic exercise and dynamic resistance training (Kravitz, 2007; Fagard & Cornelissen, 2007). Notably, recent studies have even examined and cited the numerous health benefits of regular yoga practice among hypertensive individuals (Hagins, Selfe, & Innes, 2013).

### **Improved Cholesterol Levels**

Elevated levels of low-density lipoprotein cholesterol (LDL; the “bad” cholesterol) and depressed levels of high-density lipoprotein cholesterol (HDL; the “good” cholesterol) have been linked to a variety of health risks, such as heart disease (Kravitz, 2007). Regular aerobic exercise has the ability to alter lipid protein levels and reduce

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triglyceride levels in the body, resulting in increased HDL and decreased LDL (Kodama et al., 2007).

### **Reduced Risk for Stroke**

Participation in aerobic and anaerobic exercise is recommended to reduce the risk of stroke. Studies indicate that individuals who participated in a moderate amount of physical activity reduced their risk of stroke by up to 20%, compared with those who participated in a greater amount of activity increasing this risk reduction to 27% (Lee, Folsom, & Blair, 2003; Sacco et al., 2006).

### **Reduced Risk for Some Types of Cancer**

Numerous studies have shown associations between reduced risk for colon and breast cancer and physical activity participation. In detail, physically active men and women exhibited a 30%–40% risk reduction for colon cancer, and physically active women presented with a 20%–30% risk reduction for breast cancer compared with their inactive counterparts (Wolin,

Yan, Colditz, & Lee, 2009). Systematic reviews spanning decades of research indicate that moderate-intensity physical activities produce a greater protective effect than low-intensity activities (McNeely et al., 2006; Samad et al., 2005; Wolin et al., 2009).

### **Improved Bone Health and Musculoskeletal Fitness**

Just as resistance training improves muscle strength, weight-bearing resistance training and aerobic physical activity may stimulate bones to increase in strength (Kravitz, 2007).

Research suggests that physical activity across the lifespan can positively impact factors related to bone health, such as bone mineral density, mass, or strength. Resistance exercises (i.e., weight-lifting programs) appear to have the greatest effects on bone mineral density. Risk for osteoporosis, an age-related bone disease characterized by loss of bone density and increased risk for bone fractures, may also be decreased through habitual weight-bearing physical activity participation. Musculoskeletal health is also impacted by age-related factors and can be mediated by engagement in resistance training and other weight-bearing activities. Sarcopenia is the age-related loss of muscle mass and strength; rates of sarcopenia are relatively consistent at approximately 1%–2% per year starting at age 50. Physical activity is

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beneficial no matter an individual's age, but it is important to commit to lifelong physical activity regimens in order to experience the greatest benefits.

### **MENTAL HEALTH BENEFIT**

Exercise is not just about aerobic capacity and muscle size. It can also improve physical health and physique, trim waistline, improve sex life, and add years to life. People who exercise regularly tend to do so because it gives them an enormous sense of well-being. Regular exercise can also have a positive impact on depression, anxiety, and ADHD, relieves stress, improves memory, helps you sleep better, and boosts overall mood. Research indicates that modest amounts of exercise can make a real difference. No matter your age or fitness level, exercise can be a powerful tool to deal with mental health problems, improve energy and outlook, and get more out of life.

#### **Exercise and depression**

Studies have shown that exercise can treat mild to moderate depression as effectively as antidepressant medication without the side-effects. Running for 15 minutes a day or walking for an hour reduces the risk of major depression by 26%. Research also shows that maintaining an exercise schedule can prevent relapsing. Exercise is a powerful depression fighter for several reasons, including promoting neural growth, reduced inflammation, and new activity patterns. It also releases endorphins, powerful chemicals in the brain that energize spirits and make you feel good. Exercise can also serve as a distraction, allowing you to break out of the cycle of negative thoughts that feed depression.

#### **Exercise and anxiety**

Exercise is a natural and effective anti-anxiety treatment, relieving tension and stress, boosting physical and mental energy, and enhancing well-being through the release of endorphins. Pay attention to your body and how it feels as you exercise to improve your physical condition and interrupt the flow of worries.

#### **Exercise and stress**

Exercising is an effective way to break the cycle between stress and stress, as it releases endorphins in the brain and helps to relax the muscles and relieve tension in the body. When the body feels better, so does the mind, creating a virtuous cycle between the mind and body.



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### **Exercise and PTSD and trauma**

Evidence suggests that by focusing on your body and how it feels as you exercise, you can help your nervous system become "unstuck" and begin to move out of the immobilization stress response that characterizes PTSD or trauma. Exercises that involve cross movement and that engage both arms and legs are some of the best choices. Outdoor activities like hiking, sailing, mountain biking, rock climbing, whitewater rafting, and skiing have also been shown to reduce the symptoms of PTSD.

### **Sharper memory and thinking**

The same endorphins that make you feel better also help you concentrate and feel mentally sharp for tasks at hand. Exercise also stimulates the growth of new brain cells and helps prevent age-related decline.

### **Higher self-esteem**

Regular activity is an investment in your mind, body, and soul. When it becomes habit, it can foster your sense of self-worth and make you feel strong and powerful. You'll feel better about your appearance and, by meeting even small exercise goals, you'll feel a sense of achievement.

### **Better sleep**

Even short bursts of exercise in the morning or afternoon can help regulate your sleep patterns. If you prefer to exercise at night, relaxing exercises such as yoga or gentle stretching can help promote sleep.

### **More energy**

Increasing your heart rate several times a week will give you more get-up-and-go. Start off with just a few minutes of exercise per day, and increase your workout as you feel more energized.

### **Stronger resilience**

When faced with mental or emotional challenges in life, exercise can help you build resilience and cope in a healthy way, instead of resorting to alcohol, drugs, or other negative behaviours that ultimately only make your symptoms worse. Regular exercise can also help boost your immune system and reduce the impact of stress.

## **RECOMMENDATIONS**

Children and adolescents aged 5-17 should accumulate at least 60 minutes of moderate-to- vigorous physical activity daily, with greater amounts providing additional health benefits.

Adults aged 18–64 should increase their moderate-intensity aerobic physical activity to 300 minutes per week or engage in 150 minutes of vigorous-intensity aerobic activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Aerobic activity should be performed in bouts of at least 10 minutes duration and muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.

Adults aged 65+ should do at least 150 minutes of moderate-intensity aerobic physical activity and 75 minutes of vigorous-intensity aerobic activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Aerobic activity should be performed in bouts of at least 10 minutes duration, and muscle-strengthening activities should be done involving major muscle groups on 2 or more days per week. When adults cannot do the recommended amounts of physical activity due to health conditions, they should be as physically active as their abilities and conditions allow.

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