



ACSM Information On...

## Exergaming

Childrens' increasing use of technology means fewer meet physical activity guidelines. Many kids spend on average 50 hours of screen time per week. Is there a practical solution? Welcome to Exergaming—the future of fitness.

### A COMPLETE PHYSICAL ACTIVITY PROGRAM

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:

- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross-country skiing
- Swimming

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

### WHAT IS EXERGAMING?

An emerging trend in physical fitness has been inspired by the invasion of a relatively new technology to the market referred to as Active Gaming or Exergaming. Exergaming is defined as technology-driven physical activities, such as video game play, that requires participants to be physically active or exercise in order to play the game.

These game based physical activities go beyond simple hand finger movements as the primary interface and require the user to apply full body motion to participate in virtual sports, in group fitness exercise or other interactive physical activities. Multiple types of game controllers ranging from censored pads (Dance Dance Revolution, Lightspace, Makoto, etc.) to motion sensor video cameras (Sony Eye Toy and Microsoft Kinect being the most popular) require the user to move and interact with the game versus traditional sedentary types of gaming behaviors.

The reason behind the growing popularity of Exergaming can be attributed to 1) the decrease in physical activity levels, 2) the increase in obesity rates, and 3) the influx of technology that saturates our society and the way we live. Well over 50 hours a week is spent in front of some type of screen (Video games, cell phones, computers, television, etc.) with 'gaming'

being one of the most popular forms of screen entertainment. Playing video games on a television, computer, cell phone, and/ or tablet (e.g. iPad) has been considered an addiction. This behavior is not going away and only continues to grow in popularity with the onset of cooler graphics and the constant invasion of new games including mobile and tablet applications (Apps). The concept behind Exergaming is to leverage the passion for gaming and turn what was once considered a sedentary behavior into one that is more active and healthy. Requiring participants to get up and move while still allowing them to play and enjoy the experience has become an incentive to increasing physical activity levels in all populations.

### EXERGAMING BENEFITS

Research continues to emerge that supports Exergaming as a healthy and beneficial form of physical activity. Studies have shown that various types of Exergames can produce moderate to vigorous physical activity results as well as positive physiological results. As with any exercise, depending on how the individual participates will dictate the type of results from the activity. Additional benefits that participating in Exergaming can provide are as follows:

- **Fun** – Over eighty-four percent of adolescents stated that having fun was the single most important element in life. In addition, one of the main reasons adults decide to leave a workout routine is due to boredom. Exergaming provides participants with a desirable experience with the use of technology where some have stated they do not even realize they are exercising.
- **Social Interaction** – Many Exergames allow multiple players to participate at one time. Peers are able to play alongside of one another and communicate about the activity. Participants are able to talk about game play and even assist one another in improving.
- **Choice** – Exergames allow participants to make individual choices when playing because the games are self paced. Users are able to choose their mode of play, difficulty level, with whom they would like to compete against (themselves, a friend or peer, the computer, or online competitors), and in most cases an avatar in which to identify. This prevents participants from becoming discouraged and motivates them to become and remain active.
- **Video game motivation** – The video game industry is worth over \$10.5 billion in revenue. Playing video games is one of the most desirable hobbies in society today. Exergaming allows participants to play their favorite games while being active and healthier.

## THERE IS AN EXERGAME FOR EVERYONE

The youth is certainly the most common population of Exergame users today. Although there has been a growing interest through the great success of implementing Exergaming with the adult and older adult population, it is the younger generation that has become more inactive, born into technology, obsessed with gaming, and consequently more obese. Exergaming reaches children and adolescents where they are today in the 21st century. However, keep in mind, this generation eventually grows into a young adult and adult population. After participating in Exergaming and enjoying moving, it is hard to imagine they will decide to turn to treadmills, ellipticals, and other stationary, traditional exercises to voluntarily be active.

*Brochure content provided by Dr. Lisa Witherspoon, Co-Director  
Active Gaming Research Laboratories, University of South Florida.*

## WHERE IS EXERGAMING?

Initially, Exergaming was more common in arcades and in health facilities such as YMCAs, JCC's, recreation departments, and fitness gyms. The idea was to target the teen and tween age population, as there was a place in facilities for younger children and adults but not the middle aged adolescents. Today, Exergaming can be found almost anywhere globally including doctors' offices, hospitals, schools, cooperate wellness offices, and now in our homes. Exergaming has found its way into all aspects of society. The release of Nintendo Wii and Microsoft Kinect was the major promoter for the inclusion of Exergaming in the residential market. Many Exergames were too large and expensive to put into a living room or bedroom. These video game consoles were financially reasonable as well as sustainable allowing participants to use the same console with a variety of games. Additionally, with the explosion of applications (Apps) for mobile devices and tablets, Exergames can now even travel with you. Exergames on a mobile device may require you to move and track your steps or use upper body movements to play the games.

## THE FUTURE OF EXERGAMING

Technology is not going away. It is only going to become more desirable as advancements are made. Exergaming is a healthy, appealing option to increase physical activity levels in all populations. New Exergames are being developed monthly in the pursuit to encourage users to voluntarily choose to be active doing something engaging and fun. What was once a buzz word that few understood, Exergaming can now be found anywhere you go on hand held devices, in health facilities, schools, and corporate wellness facilities.

As research continues to support Exergames, this innovative concept to exercise is only going to grow in popularity. And, as the younger generations become adults, exergaming is going to slowly but surely modernize how we choose to exercise!

## STAYING ACTIVE PAYS OFF!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity – such as 30 minutes a day of brisk walking – significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more – regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

## THE FIRST STEP

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you're ready to begin an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance from dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have recently been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin exercising.

## PRIOR TO EXERCISE

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.

