

Dance For Life¹

By

Dr. Hwa A. Lim

Ph.D., MBA, MA [USA] ; B.Sc. (Hons), ARCS [UK].

AHSA

2450 Kruse Drive

San Jose, California 95131, USA.

hal@ahsaworld.org

Proper Citation:

Hwa A. Lim, “Dance for Life”, *European Papers on the New Welfare*, No. 17, 2011.

If you can walk, you can dance.

If you can talk, you can sing.

— A saying in Zimbabwe

Fit For Life

“Dance for life” can mean dance for the duration of life, or it can mean dance for the health of life. The two are actually interrelated: to be able to dance, one has to stay relatively healthy; to be healthy, one may want to dance.

Fun or not, fit or not, small starts can yield big dividends, health-wise. A good walking program may improve overall measures of physical health as much as 15% in just three months. Since the human body after age 25 experiences, on average, about a 1% falloff in fitness for every additional year of life, the numbers are simple arithmetic to crunch—that is a 15-year functional rejuvenation.²

The good news is that medical opinion is uniting around the message that getting fit for life can be quick and need not involve a gym or running shoes. The U.S. government’s dietary guidelines were updated in 2005 with its most explicit recommendations to date on exercise. The public has been advised to get 30 minutes per day of moderate-intensity physical activity on most days of the week; 60 minutes per day if they are trying to control their weight; and up to 90 minutes per day to maintain weight loss.

A rough guide for “moderate,” according to Harold Kohl, the lead epidemiologist at the Physical Activity and Health Branch of the U.S. Centers for Disease Control and Prevention (CDC), is walking at about 3 to 3.5 miles per hour. If you cannot maintain a conversation and the heart is beating rapidly, then you have probably crossed into “vigorous” physical activity. “Moderate” can be something as simple as group dance lessons ubiquitous in Asian public parks from Singapore to Beijing, or in most senior centers in the U.S.

If time is an issue, U.S. government guidelines suggest that there are still significant health benefits to be gained if the 30 to 60 minutes of exercise is broken up into 10- or 15-minute segments throughout the day. Also, do not choose sports that

¹ This article is based on a chapter in a forthcoming book in Hal’s series of “Yours” books: Hwa A. Lim, *Healthfully Yours: Diets, diseases, fountain of youth, and longevity*, (2011, eBook), and references therein.

² Jeffrey Kluger, “Couch potatoes, arise”, *Time*, 165(23), August 8, 2005, pp. 52–53.

are seasonal, expensive or solitary—each one is a handy excuse for not sticking with the workout program. Dancing, for example, is not seasonal, solitary, nor expensive, and is a lot of fun.

Yet only 33% of Americans say they do get a moderate 30 minutes at least five days a week, and they are bucking a trend. The U.S. government statistics show that between 1977 and 1995, trips made by walking declined 40%, and walking to school fell 60%. To put the whole thing in perspective, the department of health and exercise science of the University of Tennessee studied a group of Old Order Amish, a religious sect that shuns cars and other modern conveniences. Using pedometers, researchers found that average Amish men take 18,425 steps a day and average Amish women 14,196 steps. A typical American, by contrast, takes only about 5,000 steps.

In Shape And Out of Shape

In a culture that makes a fetish of slimness, the idea of being fat and happy raises eyebrows; the idea of being fat and fit is nothing short of apostasy. With 30% of American adults considered obese, some 200 million Europeans overweight and countless millions worldwide on some sort of diet—usually unsuccessfully—at any one time, that is, “globesity” is an epidemic, perhaps we ought to be asking ourselves whether we are going about things all wrong.

There is nothing easier than falling out of shape in this age of instant entertainment on big flat-screen TV; cell phones, iPods, iPhones and BlackBerrys a touch away; an arsenal of remotes within easy reach; conveniences of pizza deliveries to the door, fast food chains, all-you-can-eat buffets... With all these conveniences and comfort, climbing out of the couch and getting back into condition is a trickier proposition.

NEAT

NEAT stands for “NonExercise Activity Thermogenesis” and it is essential for successful weight loss. Basically, it is the extra stuff one does, physically, all day long that adds up. One should make a point to add more “neat” into one’s day so that one can zap another 500 calories! A few ideas include:³

- ❑ Do crunches in bed: One could burn about 20 calories in under 5 minutes just by drawing one’s knees to the chest 25 to 50 times, plus it strengthens one’s abs and gets one’s blood pumping.
- ❑ Dance around while getting dressed: One could turn up the radio or listen to upbeat music on an iPod while doing all the morning rituals—an hour of hip shaking can burn about 55 calories.
- ❑ Stand up! One should not sit when one can be on one’s feet—to burn about 40% more calories. So just take a stand—when one is on the phone, watching kids at the playground, making small talk at a party.
- ❑ Laugh: One should watch something that is consistently funny. That could burn about 40 calories if one guffaws for 10 to 15 minutes straight.
- ❑ Walk, pace, jog down the hall: In other words, MOVE! Doing little bits of activity all day—taking the stairs to use the restroom on another floor at work, doing an extra lap around the grocery store—can help one burn an additional 375 calories a day!

In fact, everyday activities do add up as well:

Table 1. Move a little, and lose a lot.

Activity	Duration	Calories/wk	Pounds/Yr
Taking a walk on lunch break	10 min, 5 times a week	170	2.5
Using stairs instead of elevators	5 min, 5 times a week	225	3.0
Housework	2 hours a week	408	6.0

³ Liz Vaccariello, “5 Neat and easy ways to burn calories all day, every day!” *Prevention*, June 27, 2009.

Playing actively with the kids	1 hour, 3 times a week	612	9.0
Working in the yard or garden	2 hours a week	712	10.0
Dancing	2 hours a week	816	12.0

Exercise for Weight Control

People who exercise regularly give many reasons for why they do what they do, regardless of life and occupation's demands. They say exercise can improve their health, mood, strength, stamina, or even take them away from their daily chores. But for many, whether they admit it or not, the desire to lose or control weight to stay in shape is a major motivation.

But when one diets without exercising, one loses both muscle and fat, which is counterproductive because muscle loss significantly lowers the basic metabolic rate—the number of calories the body uses at rest.

Table 2. Exercise burns calories, offsetting the calorie intake and helping lose weight. Heavier people need more energy to move, using more calories per activity. 1 kg = 2.2 lbs; 54 kg = 120 lbs; 82 kg = 180 lbs. The weight used in this article is 154 lbs, about the average of these two weights.

Activity	Calories burned per minute	
	54-kg person	82-kg person
Cycling (16 km/h)	5.5	8.2
Dancing (aerobic)	7.4	11.1
Hiking	4.5	6.7
Jogging	9.3	13.9
Running	11.4	17.0
Sitting	1.2	1.7
Swimming	7.8	11.6
Tennis	6.0	8.9
Walking (brisk)	6.5	9.7
Weight training	6.6	9.8

Weight-bearing activities that work against gravity—aerobic activities like walking, running, cross-country skiing, dancing, skating and stair-climbing—use proportionately more calories at a given level of effort than swimming, cycling or water aerobics. The more muscle groups are involved in the activities, such as in vigorous or competitive dancing, the more calories one is likely to burn. That is why working out against gravity uses more calories than non-weight-bearing activities. In comparison, because activities like swimming put less stress on weight-bearing joints, many people can do them for longer periods, making up for the lower caloric burn. In addition, the buoyancy in swimming can help the overweight initially as they get into the routine of exercising.

If one engages in resistance exercises—working out with weights or on machines that strengthen various muscle groups—one may gain several pounds of muscle that partly offset the loss of body fat. In other words, one may lose fewer pounds than if one expends the same number of calories on an aerobic activity like brisk walking or swimming, but one will be stronger and better toned. With greater muscle mass, one's basic metabolic rate will rise and one will burn more calories all day and night. And since muscle holds less water and takes up less room than the equivalent weight of fat, by shedding fat and gaining muscle one can lose inches and sizes without losing actual pounds on the scale.

Jack Wilmore, an exercise physiologist at Texas A&M University, calculated that the average amount of muscle that men gained after a serious 12-week weight-lifting program was 2 kilograms, or 4.4 pounds. That added muscle would increase the metabolic rate by 24 calories a day.⁴

But one should keep in mind that the time spent doing resistance exercise burns fewer calories than if the same time is spent on aerobic activities. How skilled one is at the chosen activity also influences the calories burned. Those less skilled, such as unskilled dancers, make unnecessary movements or have to work harder at the activity, using more calories an hour than those who perform it efficiently. That may sound like it is an advantage to be unskilled, but there is a significant downside: Those with less skill tend to tire faster and thus spend less time at the activity. They are also more prone to overuse injuries; they probably would not enjoy doing the activity as much, giving them a good excuse to quit.

Another factor in caloric burn is the increased number of calories the body uses after a workout. Both aerobic and resistance exercises raise energy expenditure over the next 12 to 24 hours, but the range is great—from 10 to 150 calories, depending on the type of activity and how long and vigorously it was done. Though it does not sound like much, it can add up over the long run.

Exercise for All

The older one gets, the more one has to deal with creaky and painful joints. But the benefits of exercise—from lower blood pressure to improved mood—are just too great to pass up. So most people who want to remain active eventually learn to accommodate their aging bodies by changing sports or exercise routines.

There are, however, a few rules of thumb to keep in mind. Recent studies have taught exercise physiologists a lot about which combinations of physical activities work best at different ages. But the same physiologists also warn that one should not get so hung up on the new advice that one abandons the old routines. Herbert Löllgen, professor of sports medicine and cardiology at Bochum University, Germany, says, “Swimming, hiking, bowling and calisthenics are particularly advisable. But even the smallest units of exercise mount up over the day.”

Whatever the age, do spice up the routine with variety to avoid both boredom and injury. The effects of physical exercise on mortality and morbidity, even in old age, can be compared to expensive medication. But what is even more important is preserving independence and quality of life.

There are several excellent sports that one may use as hobby exercises. Examples are badminton, swimming, hiking or dancing. Take for example, badminton, which has a false wimpy perception because of the backyard version of the real sport, is really one of those few skilled sports that one can play from the age of six to the age of seventy, and even offering more intense workout than other racquet sports like racquetball and tennis.⁵

Dancing, which can double as a hobby, is an outstanding form of social and exercise activity whose intensity can be adjusted accordingly to suit one’s age and flexibility. It is one of the few forms of exercise that on a social dance floor, the dancer gets to meet new people, dance different dances to a variety of songs, that is, no monotony. In fact, it does not feel like exercising at all; it feels like fun. Using one’s hobby as a form of exercise has another advantage: one not only enjoys the “exercise” more, but one is also not likely to find a handy excuse for not sticking with the “workout program.”

Fitness activities can be divided into three broadly categories. On top of the list is cardiovascular exercise—anything that makes the heart beat faster. No matter one’s age, unless one has a truly unstable condition, getting the heart rate up several times a week is really important. The other two types are strength training and stability (balance) exercise. These two come into greater play as one gets older. One does not necessarily have to separate the exercise for each category. Indeed, some of the best physical routines, like dancing, tai chi or rock climbing, combine two or more approaches. But expect to change the mix as one move through the decades of one’s life.

⁴ Gina Kolata, “Does exercise really keep us healthy?” *The New York Times*, January 8, 2008.

⁵ “Badminton fans boast of feathers and aerobics”, *The New York Times*, October 22, 1989.

Training Exercise

Besides doing exercise with the desire to lose or control weight, there are other reasons why people do exercise.

For almost all of us, mother nature and father time show no mercy; we have to exercise and train to stay independent as we age. For still yet others, not necessarily mutually exclusive, they have to do training exercise (physical therapy) after an injury or an accident. For professionals, coaches, competitors, fitness enthusiasts, they have to exercise and train to get good at what they are doing. Others just need to look good to stay ahead and be successful in their profession. Whatever the reason, they employ different forms of training regimens to develop stamina, endurance, and muscles.

Balance

Each year one in 3 Americans 65 and older falls, and that falls and their sometimes disastrous medical consequences are becoming more common as the population ages. Balance is not talked about in fitness circles as often as strength training, aerobics and stretching. The sense of balance begins to degrade in one's 20s and that it is downhill from there—literally and figuratively—unless steps are taken to preserve or restore this delicate and critically important ability to maintain equilibrium.⁶

One normal consequence of aging is a steady decline in the three main sensory contributors to good balance—vision, proprioceptors on the bottoms of the feet that communicate position information to the brain, and the tiny hairs in the semicircular canals of the inner ear that relay gravity and motion information to the brain. Add to that the loss of muscle strength and flexibility that typically accompany aging and you have a fall waiting to happen.

But while certain declines with age are unavoidable, physical therapists, physiatrists (rehabilitation physicians) and fitness experts have repeatedly proved that much of the sense of balance can be preserved and even restored through exercises that require no special equipment or training. These exercises are as simple as standing on one foot while brushing your teeth or walking heel-to-toe with one foot directly in front of the other, something that one does very often in dancing.

Testing for Equilibrium

Marilyn Moffat and Carole B. Lewis, physical therapists in New York and Washington, respectively, agree that balance is an area of physical fitness that is often overlooked. They define balance as “the ability of your body to maintain equilibrium when you stand, walk or perform any other daily activity” like putting on pants, walking on uneven ground or reaching for something on a shelf.

Dr. Moffat and Dr. Lewis suggest starting with a simple assessment of your current ability to maintain good balance. With a counter or sturdy furniture near enough to steady you if needed, perform this test:⁷

1. Stand straight, wearing flat, closed shoes, with your arms folded across your chest. Raise one leg, bending the knee about 45 degrees, start a stopwatch and close your eyes.
2. Remain on one leg, stopping the watch immediately if you uncross your arms, tilt sideways more than 45 degrees, move the leg you are standing on or touch the raised leg to the floor.
3. Repeat this test with the other leg.

Now, compare your performance to the norms for various ages:

- ⊙ 20 to 49 years old: 24 to 28 seconds.
- ⊙ 50 to 59 years: 21 seconds.
- ⊙ 60 to 69 years: 10 seconds.

⁶ Scott McCredie, *Balance: In search of the lost sense*, (Little, Brown and Company, New York, USA, 2007).

⁷ Marilyn Moffat, and Carole B. Lewis, *Age Defying Fitness: Making the most of your body for the rest of your life*, (Peachtree Publishers, Atlanta, Georgia, USA, 2006).

- ⊙ 70 to 79 years: 4 seconds.
- ⊙ 80 and older: most cannot do it at all.

If you are wise, whatever your age, you will want to strive for the norm of those younger than 50. To increase stability and strengthen the legs, stand with feet shoulder-width apart and arms straight out in front. Lift one foot behind, bending the knee at 45 degrees. Hold that position for five seconds or longer, if possible.

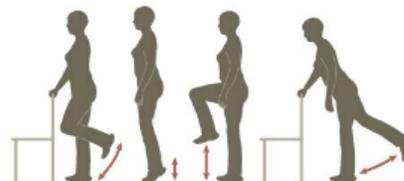


Figure 1. Exercises to improve balance: move slowly; hold each position for 1 second; repeat 8–15 times; hold on to a chair with one hand for balance, try no hands if steady, then with eyes closed. (Source: “Fitness over fifty” by the National Institute on Aging).

Repeat this exercise five times. Then switch legs. As you improve, try one-leg stands with your eyes closed. There are many opportunities you can also incorporate one-leg stands into your daily routines: for example, while on the cellular phone, brushing your teeth, waiting in line or for a bus, watching TV, or washing dishes.

Exercises to Build a Motor Skill

Balance is a motor skill. To enhance it, you have to train your balance in the same way you would have to train your muscles for strength and your heart for aerobic capacity.

Dr. Moffat pointed out that balance is twofold: static while standing still and dynamic when moving, as in walking, climbing stairs or spinning during dancing. Two main routes improve balance: exercises that increase the strength of the ankle, knee and hip muscles, and exercises that improve the function of the vestibular system.

Like one-leg stands, many can be done as part of a daily routine. Dr. Moffat recommends starting with strength exercises and, as you improve, adding vestibular training by doing some of them with closed eyes.

Sit-to-stand exercises once or twice a day increase ankle, leg and hip strength and help the body adjust to changes in position without becoming dizzy after being sedentary for a long time. Sit straight in a firm chair (do not lean against the back) with arms crossed. Stand up straight and sit down again as quickly as you can without using your arms. Repeat the exercise three times and build to 10 repetitions.

Heel-to-toe tandem walking is another anytime exercise, resembling plank walking popular with young children. It is best done on a firm, uncarpeted floor. With stomach muscles tight and chin tucked in, place one foot in front of the other such that the heel of the front foot nearly touches the toe of the back foot (like in a Latin walk in dances). Walk 10 or more feet and repeat the exercise once or twice a day.

Also try walking on your toes and then walking on your heels to strengthen your ankles.

Another helpful exercise is sidestepping. Facing a wall, step sideways with one leg and bring the other foot to it, just like in the Merengue or Bachata dance. Perform this 10 times in each direction. After mastering that, try a dance-like maneuver that starts with sidestepping once to the right. Then cross the left leg behind, sidestep to the right again and cross the left leg in front (this sequence of moves is a form of grapevine in dances). Repeat this 10 times. Then do it in the other direction.

In addition, the slow, continuous movements of tai chi, that popular Chinese exercise, have been shown in scientific studies to improve balance and reduce the risk of falls.⁸

⁸ Jane E. Brody, “Preserving a fundamental sense: balance”, *The New York Times*, January 8, 2008.

Training To “Retire”

Statistics show that women can expect to live 13 years longer than their mother or their maternal grandmother, and men can expect 11 more years than their father or paternal grandfather. Thus geriatric specialists wish that more people would “train to retire.” Too often, they say, people equate retirement planning with 401(k)s and mutual funds. While financial planning is important, there are also psychological and physical implications to retirement preparation. With longer life expectancy, it has become even more important to train for those aspects of old age.

In fact, we are getting to the point where people’s retirement life stage may be longer than their work life stage. So with the first wave of baby boomers—those born between 1946 and 1964—already in their 60s, gerontologists are bracing for a tsunami of disgruntled post retirees who have left the psychic and physical aspects of aging to chance. “We’re going to have a whole generation of people who are healthy, wealthy and bored,” said Dorothy Cantor, a psychologist.⁹

Or perhaps not so healthy. Regarding the statistics that baby boomers are most likely to live well into their 80s and even beyond, Age Wave, a research group that focuses on aging, says that there is also a 40% chance that one half of a 65-year-old couple today will live to be 90. And barring drastic medical breakthroughs, these people will be coping with failing eyes and ears, and stiffening joints—with many also suffering dementia and depression, not to mention heart problems.

While the medical community is relatively good at fixing acute conditions like heart attacks, it still does not have the solutions to those chronic conditions that can rob one of satisfaction and joy in old age. Surveys show that few people want to relocate when they are older, yet many must because their homes are not age-proofed—too many stairs, or no wheelchair access—or because they have not built up a social support structure for themselves.

Nor are baby boomers certain of how much time they will have to plan. Since the U.S. Congress struck down mandatory retirement in 1986, many people have chosen to work into their 70s—only to find that when they do finally quit, their friends and, possibly, their spouses have died, their children live far away, and they have no idea how to fill their days.

It used to be normative—one worked until 65 and then retired. These days, one just cannot expect that kind of seamless transition. Corporate restructurings—for example, Silicon Valley, California after the 2000 dotcom demise, or offshore outsourcing of U.S. jobs to foreign countries—have forced many people into retirement long before they are prepared to write the next chapter of their lives.

A result, depression already is a close second to dementia as a major problem for aging adults. In a sense, that is no surprise. People lose much more than a paycheck when they retire or when they are let go early. They lose a community of like-minded souls, a sense of power and accomplishment and an important line of demarcation between workdays and weekends. They also lose a feeling of personal identity that is difficult to replace late in life. Nancy K. Schlossberg, an author, remembers meeting with a group of retirees from the World Bank, “What they missed most was the respect they got when they said where they worked. When they retired, they lost their tag.”¹⁰

Dancing will help develop a circle of social network when friends gather together for a setting that is casual for socializing.

⁹ Dorothy Cantor, and Andrea Thompson, *What Do You Want to Do when You Grow Up?: Starting the new chapter of your life*, (Little, Brown and Company, New York, USA, 2002).

¹⁰ Nancy K. Schlossberg, *Retire Smart, Retire Happy: Finding your true path in life*, (American Psychological Association, Washington, D.C., USA, 2003).

Dance To Heal And To Health

Contrary to some misconceptions, particularly among Asians older than 50 years old, dancing is actually an excellent form of exercise, and a potential source of social asset.¹¹



Figure 2. Arte Phillips (1958–2008), U.S. Ballroom champion, Theatrical Dance Champion, a great dancer, performer and choreographer, and the author, Hal. Arte’s shining career was untimely cut short at the tender age of 50. Arte taught Hal how to dance and choreographed some of Hal’s winning routines in world amateur championships. (Source: Hal Archives, photo taken in 2006). (Right) The author and his partner, flanking other world champions, after their performances at a fundraising event “Soar to New Heights” for children with special needs to help these less fortunate to use dance as a skill to open up windows of opportunities. (Feb 26, 2011).

In recent years, dancing has become a craze in Asian countries, partly because of the series of Hollywood movies: “Dirty Dancing”, “Take the Lead”, 2004’s American remake of the Japanese “Shall We Dance”, with Richard Gere, Susan Sarandon and Jennifer Lopez, and the 2005’s documentary “Mad Hot Ballroom”, and others. Television viewers got a view of competitive ballroom dancing in the summer of 2005 when ABC’s surprise hit “Dancing with the Stars” sauntered into American living rooms. This reality television craze, which broke the rating for reality shows, also created enthusiasm for the art form with shows like Fox’s “So You Think You Can Dance?”

Interest in Latin dances, particularly the Salsa, Hustle and Bachata, has increased tremendously in the past few years. Many attribute the trend to the captivating appeal and expressiveness of these saucy dances. Others say the visual media has influenced the popularity of the dance by helping the Hispanic culture become more mainstream with movies like 2004’s “Dirty Dancing: Havana Nights,” and the memorable Salsa scenes in “Along Came Polly.”

Dance As a Skill

We are all trained to think of skills as things we develop for the workplace. But think of them as strengths, and they open a huge number of opportunities. Learning how to dance is an excellent example of developing such a skill.

Dancing is a lifetime skill that will provide much joy, and many healthful benefits. It adds new dimensions and offers enhancements to one’s life whether it is one’s avocation, pastime, or hobby. A dancer will find an enhanced appreciation for music and its rhythms, and experience an increased sense of balance, and a more fluid movement in walking and running. Dancing with a partner in synchrony with music will help develop a lead and follow, a more open, understanding, responsive and supportive relationship with the partner and with others; in other words, the partners learn how to empathize. Outlook on life will also become more positive.

A thread that runs through all of these examples is the awareness of health benefits by these people, and they sometimes choose dances that are more intense to increase the cardio-vascular effects. Any wonder why almost all forms of dance

¹¹ This section is dedicated to a great dancer, performer and choreographer, Arte Phillips, who passed away on November 12, 2008 at a young age of 50. Arte taught Hal how to dance properly, and choreographed winning routines for Hal and his partner.

fitness programs such as Zumba involve moves from Salsa, Hustle and Samba—the more dynamic form of dancing. These nonetheless, less intense dances such as smooth dances are still very popular, especially among older age groups.

The increasing popularity of dancing in senior centers is even more apparent—these people derive not only benefits of dancing such as strength building and balance training, but also the pleasure, social network building so that they do not feel dependent or bored, that is, they are building their social asset! Not surprisingly, these dancers have very positive outlook!

For younger and professional people, they dance because they want to social network, make new friends, or just need to look good to stay ahead and be successful in their profession. They also dance because they need a form of relaxation. Dancing is actually a wonderful stress reliever, particularly after a long day, or long week.

Becoming a competent dancer provides an excellent learning experience in planning, goal setting, discipline, achievement, self-confidence, assuredness, and pride in the abilities. These favorable attributes will transfer to other aspects of life, such as feeling good and looking good.

Good dancing and good dancers heighten the atmosphere of an event. In business and professional life, a person can lend to their acceptance and belonging by the ability to dance. Dancing well labels one as a leader. In the social front, dancers have more friends. A good dancer is a definite plus in social occasions. If a man takes the time to learn to become a skilled and confident dancer, but not an overly forceful leader, ladies in the room will appreciate his presence. In fact, a good dancer does not have to be handsome to be popular. Similarly, a lady who is a good dancer radiates charm and grace, regardless of her physical appearance.

Social Dancing and Dancercise

These days, in social scenes such as in dance clubs at universities, senior centers, community centers and dance studios, swanky dance music and smiling couples sway their hips in unison or synchronize their steps to smooth dances, Latin dances, or swing dances such as the Hustle, West Coast Swing. With extended arms and straightened backs they begin whirling around the room while waltzing, foxtrotting, tangoing or quickstepping in an atmosphere that is more relaxed than elegant.

Ballroom and other dance classes add a certain fizz to the typical sweaty workout at the gym. Members partner up, smile and laugh together after missteps, very unlike going for solitary runs on treadmills. Seeing people who are not the stereotype dancers—they come in different shapes, sizes, heights, and ages—can make it easy for any two-left-foot type to give it a try. People can see that really anyone can dance. As student dancers get better, they develop confidence, poise and better posture as they learn the different steps. Dancing provides a great opportunity for people to meet, whether in youthful, mature, or golden years.

Physical exercise is essential to maintenance of good health. Ballroom and other dancing is a great body conditioner, if done on regular basis, such as twice or thrice a week. If done properly, dancing helps tone all the muscles in the body, improve posture, increase the range, balance and flexibility of movements, something that one will find useful as one ages and in golden years.

The healthful exercise from dancing will help keep weight under control, or ever lose weight. Frequent dancing will build and maintain physical stamina and endurance at a level of that of avid athletes. There is no better way to exercise than to have one's hobby as an exercise for health, that is, to dancercise.

A dancer can dance to his or her comfort level or pace, according to the age or health conditions. For a 54-kg dancer, leisure dancing burns about 6 calories per minute, while an 82-kg dancer burns about 9 calories per minute. Competitive and dynamic dancing for a 54-kg dancer burns about 8 calories per minute, while an 82-kg dancer burns about 12 calories per minute.

In yet another sense, since each song lasts for about 3 to 5 minutes, dancing is a great form of interval training, in which an “exerciser” (a dancer in this case) alternates short bursts of high-intensity exercise (during dancing or fast Latin dancing) with easy-does-it recovery (between dances or a slow smooth dance). Alternating short bursts of high-intensity dances with easy-does-it recovery is a great form of fun-filled interval training.

This alternating fast-slow technique is hardly new. For decades, serious athletes have used it to improve performance. But new evidence suggests that a workout with steep peaks and valleys can dramatically improve cardiovascular fitness and raise the body's potential to burn fat, even during low- or moderate-intensity workouts. And best of all the benefits become evident in a matter of weeks.

Interval training also stimulates changes in mitochondria, where fuel is converted to energy, causing them to burn fat first—even during low- and moderate-intensity workouts. Improved fat burning means endurance athletes can go further before tapping into carbohydrate stores. It is also welcome news to anyone trying to lose weight or avoid gaining it.¹²

Dance for the Thrill and for the Kill

Dancing is now part of elementary, middle, high school and university curriculum partly because ballroom dancing is now an event recognized by the International Olympics Committee (IOC), the many dance competitions sanctioned by different associations throughout the year, and that dance parties are now a ubiquitous part of almost all casual celebrations or more formal banquets. To qualify as an Olympics event, it has been renamed dancesport. On September 8, 1997, IOC announced that it had granted outright recognition to the International Dancesport Federation (IDSF) as a full member of IOC. Still dancesport will not be a program in the Olympics until after the 2012 Summer Olympics in London, UK.

Professional and serious dancers are jocks devoted to an activity that demands great physical acuity. Each couple is precisely in sync with the music, carriages erect, and hands and arms carefully positioned, with the leader leads fluidly negotiating their way through the other couples. Despite the occasional stumble and awkward run-in, the best of teams move with effortless aplomb, an assured and well-rehearsed grace, and diva-like walks. Good posture makes a dancer look elegant and exude confidence.

Mental Training in Choreography

Mental training teaches how to focus on the task at hand. Mental training skills—also known as sports psychology—can be used in any situations where one must perform under pressure. For example, a couple on the dance floor performing for a huge audience in a banquet event or in a dancesport competition. In such situations, mental training is often the difference between performing well and performing “as well as possible.”

Mental training skills comprise of two categories: skills of emotional control and attentional control. Emotional control means that the individual has achieved the right combination of mental activity and physical arousal consistent with his or her ideal performance state. Under pressure or tense situations, our blood pressure, heart rate, breathing rate, blood flow to the muscles and metabolic rate all increase. This does not enhance learning, practicing or performing. Thus, we see performers freeze under pressure, experience a lapse concentration and forget their choreographies.

Emotional control balances relaxation with arousal to permit better concentration. Emotional control uses “controlled breathing” to relax muscles, and “positive self-talk” to build confidence and correct errors. More specifically, four methods are used to evoke the relaxation response: “mind-to-body” techniques, “body-to-mind” techniques, combining physical sensing and mental imagery, and combining controlled breathing and stretching. Competitive dancers must work with their coach to determine which methods work best. To be effective, the coach must teach the dancer to relax on cue.

Once emotional control is achieved, attentional control helps the dancer focus on the task at hand. Attentional control involves concentration, visualization, and refocusing. Concentration is the state of being relaxed and alert to the changing environment. Dancers experience this on a crowded dance floor often—if someone gets in the way, a dancer must react while staying focused on the performance. Visualization involves rehearsing a positive, mental image of the performance.

¹² Jason L. Talanian, Stuart D.R. Galloway, George J.F. Heigenhauser, Arend Bonen, and Lawrence L. Spriet, “Two weeks of intensive aerobic interval training increases the capacity for fat oxidation during exercise in women”, *Journal of Applied Physiology*, 102(4), 2007, pp. 1439–1447.

It can also be used to anticipate problems that may impede performance. Finally, the dancer must be able to regain composure when distracted. This can be achieved by simulating adverse situations in practices.

Ultimately, not only in dancing, but also in all forms of sports, mental training skill must help the individual achieve his or her ideal state of relaxation and activation which results in a peak performance. In sports, dancing included, this is called the “ideal performance state” or the “zone.”

Whether dancing recreationally or competitively, regular use of mental training skills will improve learning and practicing. But in competition training, it is essential to develop mental training skill in conjunction with perfecting dancing skills. The next step is to integrate these skills into a seasonal or year-long practice schedule which will improve practicing and prepare the competitor physically and mentally.¹³

For dancers who have other professions (so-called amateurs because dancing is their side “profession” or hobby), this mental training helps in their true professional as well; and more importantly, this mental training prepares all dancers to cope with the stresses and demands of routine daily life.

Dance for the Brain

In a study, Dr. Joe Verghese, professor of neurology at Albert Einstein College of Medicine, New York, and colleagues, followed a group of 469 men and women, ages 75 and older. The participants, who did not have any sign of forgetfulness at the study’s start, were followed between the years 1980 and 2001. Each member of the cohort gave details about how often they participated in six brain stimulating hobbies: reading, writing for pleasure, doing crosswords, playing musical instruments, taking part in group discussions and playing board game; and 11 physical activities including ballroom dancing, team sports, swimming and bicycling.

The researchers developed a scale to assess the frequency of activities each week. For example, for each beneficial activity, the risk reduction was related to how often it was performed. Participating in cognitive-stimulating activity one day a week translated into one point on the cognitive activity level scale.

Each year, for an average of five years, the study cohort was evaluated. During the course of the study, 124 people developed dementia: 61 developed Alzheimer’s disease, 30 vascular dementia (strokes), 25 mixed dementia and 8 had other types of dementia.¹⁴

By comparing those who developed dementia with those who did not, the researchers found that for one point on the cognitive activity level scale, there was a 7% reduction in the risk of dementia. People in the highest third had a score of 11 points or higher. That means they participated in mind-stimulating activities more than once a day each week. Their risk of developing dementia was 63% lower than people who scored in the lowest third of the cognitive activity level scale.

The researchers found that people who took part in intellectually stimulating hobbies such as reading, playing board games or instruments demonstrated a reduced risk of dementia, but the researchers found no significant association between physical activities and the risk of dementia, except for ballroom dancing. The amazing 76% risk reduction from frequent participation in ballroom dancing by 130 avid dancers was the highest score of all hobbies and physical activities measured in the study.

For example, seniors who did crosswords four days a week had a 47% lower risk of dementia than people who did only once a week. Reading reduces the risk by 35%, playing musical instrument lowers the risk by 69%, and dancing frequently lowers the risk, as stated above, by an amazing 76%.

Verghese offered the theory that the requirements of ballroom dancing—remembering the steps, moving in precise time to the music and adapting to the movement of the partner—are mentally demanding exercises. Therefore ballroom dancing

¹³ “Mental-training skills improve practicing and performance” by Tim Mah, British Columbia, Canada. Tim is the first DanceSport/Ballroom teacher in Canada to be accredited with level 2 NCCP Coaching.

¹⁴ Joe Verghese, et al, “Leisure activities and the risk of dementia in the elderly”, *NEJM*, 348(25), 2003, pp. 2508–2516.

offers both physical and mental stimulations. Verghese says other kinds of dancing may also be healthful for seniors, but because his subjects preferred ballroom, he cannot tell for sure.

Dr. Susanne Sorensen, head of research at the Alzheimer's Society, says that this research strengthens the "use-it-or-lose-it" school of thought that states that complex brain activity can build up a brain reserve that may protect people from Alzheimer's disease later in life. So, do not forget to dance.

Dance for the Heart

Exercise is crucial after people suffer heart problems, but getting people to adhere to exercise programs is tough. As many as 70% drop out of traditional programs, said Dr. Romualdo Belardinelli, professor of cardiology at Università Politecnica delle Marche School of Medicine, and director of cardiac rehabilitation at Lancisi Heart Institute in Ancona, Italy.

The group of Italian researchers led by Dr. Belardinelli has come up with a novel way for cardiac rehabilitation patients to exercise their damaged hearts without having to squeeze into spandex or gyrate in a gym, but by waltzing instead. The dance proved to be just as effective as bicycle and treadmill training for improving exercise capacity in a study of 110 participants (89 men and 21 women), average age 59, with mild to moderate heart failure. The condition occurs when weakened hearts can no longer pump blood effectively, making simple activities like climbing stairs and taking the dog for a walk tough to do, let alone enjoy.¹⁵

The researchers assigned 44 patients to a supervised exercise training program of cycling and treadmill work three times a week for eight weeks. Another group of 44 took dance classes in the hospital gym, alternating between slow and fast waltzes for 21 minutes, three times a week for eight weeks. A third group of 22 patients had no exercise. Heart rates were checked during both activities, more extensive exercise tests were done at the start and end of the study, and artery imaging exams were performed.

Cardiopulmonary fitness increased at similar rates among those who danced or exercised and did not change in those who did neither. Oxygen uptake increased 16% among exercisers and 18% among dancers. The anaerobic threshold—the point where muscles fatigue—rose 20% among exercisers and 21% among dancers. Other measures, including a general index of fitness, were comparable. Imaging showed that dancers' arteries were more able to dilate and expand in response to exercise than non-exercisers.

Quality of life was surprisingly more significantly improved in the dancing group versus the exercise group. Dancers reported slightly more improvement in sleep, mood, and the ability to do hobbies, do housework and have sex than the others.

In a test in which lower scores mean fewer problems interfering with quality of life, among dancers, scores dropped from an average of 56 to 41; among exercisers, the same scores dropped from an average of 58 to 48.

The researchers chose the Waltz because it is internationally known and is quite aerobic, as the study ultimately verified. The same researchers previously showed that waltzing could help heart attack sufferers regain strength. Part of the benefit may be that dancers had a partner and social companion rather than cycling or walking on a treadmill alone.

Exercise and Dance to Heal

Having a bad heart does not mean one can skip exercise, doctors said September 5, 2007. In fact, exercise may even help one's heart to repair itself. Research presented at the 2007 European Society of Cardiology congress showed that exercise sparks the creation of new heart vessels.¹⁶

¹⁵ Romualdo Belardinelli, report at the American Heart Association meeting, Chicago, Illinois, USA, November 12, 2006.

¹⁶ The European Society of Cardiology Congress, September 1–5, 2007, Vienna, Austria.

In a small study of 37 people at Leipzig University in Germany, Dr. Robert Hollriegel found that people with serious heart failure who rode a bike for up to 30 minutes a day for four months produced new stem cells in their bones. They also had more small blood vessels in their muscles. Those who did not exercise had no change in their vessels or muscles.

Most patients with heart failure are over 70 years old, and some can barely walk a few steps without stopping for rest. Doctors think that even these patients would benefit from light exercise such as walking or cycling. To ensure that patients will be able to handle a certain level of physical activity, doctors conduct a test first to determine their maximum limits and to ensure they would not be exceeded.

Physical activity strains the heart's arteries and muscles by sending 10 times the normal amount of blood to the muscles being used. Stem cells then are dispatched to relieve this stress and may repair any damaged parts. If a patient continues to exercise, these stem cells help the body adapt to the stress, by building new blood vessels and strengthening muscles. But to maintain such benefits, the patient must exercise regularly.

Because no drugs exist to produce new stem cells, exercise may be the only method for some patients to rebuild their hearts. Previous studies have shown that people who do physical therapy after a heart attack live longer than those who do not. Experimental studies in rats have also suggested that exercise can even be more effective than statins, drugs that are commonly used to treat heart disease.¹⁷

No wonder why so many seniors are picking up dancing. But it does not have to wait until one has a heart problem before picking up the beneficial and healthful habit of dancing. In fact, dancing should be a form of preventive medicine, instead of only a form of exercise for patients.

Music Please, Maestro

A study conducted at Ohio State University is the first study to look at the combined effects of music and short-term exercise on mental performance, at least for people with coronary artery disease.

It is no secret that exercise improves mood, and improve the cognitive performance of people with coronary artery disease. Listening to music is thought to enhance brain power. This new research suggests that working out to music may give exercisers a cognitive boost. Listening to music while exercising helps to increase scores on a verbal fluency test among cardiac rehabilitation patients.

The study involved 33 men and women, mean age 62.6±10.5 years, in the final weeks of a cardiac rehabilitation program. Most participants had undergone bypass surgery, angioplasty or cardiac catheterization. This cohort was chosen because coronary artery disease may compromise cognitive ability.

The researchers asked participants to complete a verbal fluency test before and after two separate sessions of exercising on a treadmill. The workout were scheduled a week apart and lasted about 30 minutes. Participants listened to classical music, Vivaldi's "The Four Seasons", during one of the sessions. "The Four Seasons" was chosen because of its moderate tempo and positive effects on medical patients in previous research. Given the range of music preferences among patients, it is especially important to evaluate the influence of other types of music, such as contemporary or blues, on cognitive outcomes.

As a way to measure anxiety and depression, participants completed a 30-item checklist before and after exercise. The list included adjectives to describe the patient's current mood. The researchers also tested each patient's verbal fluency before and after each exercise session by asking participants to generate list of words in specific categories. This kind of task challenges the part of the brain that handles planning and abstract thought as well as a person's capacity for organized verbal processing.

¹⁷ Maria Cheng, "Exercise may generate new blood vessels", *The Associated Press*, September 5, 2007.

Participants reported feeling better emotionally and mentally after working out regardless of whether or not they listened to music. But the improvement in verbal fluency test performance after listening to music was more than double that of the non-music condition.

The lead author of the study, Charles Emery, explains that exercise seems to cause positive changes in the nervous system, and these changes may have a direct effect on cognitive ability. Listening to music may influence cognitive function through different pathways in the brain. The combination of music and exercise may stimulate and increase cognitive arousal while helping to organize cognitive output.¹⁸

It is not difficult to extend the argument of “exercising while listening to music” to dancing. In dancing, dancers dance to the rhythm of different kinds of music. In fact, dancing is essentially exercising to music. The benefits of dancing to cognitive boost are thus established.

Conclusion

A day has 1,440 minutes. Of these, one needs to schedule only 30 of them, or about 1 fiftieth, for physical activity.

Regular exercise is a critical part of staying healthy. People who are active live longer and feel better. Exercise can help one maintain a healthy weight. It can delay or prevent diseases like diabetes, some cancers and heart problems.

Most adults need at least 30 minutes of moderate physical activity at least five days per week. These physical activities do not have to mean to go to the gym, or sports clubs. They can be as mundane as walking briskly, mowing the lawn, running with one’s pet dog, dancing, swimming for recreation or bicycling. Stretching and weight training can also strengthen an active person’s body and improve fitness level.

The key to finding the right exercise for oneself is to find an activity that is fun. If the activity is fun, it is more likely one will stay motivated. Some fun activities include walking with a friend, join a dance class or plan a group bike ride.¹⁹

If you have been inactive for a while, use a sensible approach and start out slowly. Getting hurt or having sores just offers a good excuse to stop exercising.

Because of the nature of dancing, it has the combined benefits of mental and physical exercises—a combination of muscle building plus calisthenics. It is certainly one of the best forms of exercises. Dancing adds new dimensions to one’s life. It is a lifetime skill that will provide much joy, many healthful benefits, and many productive years ahead.

As a corollary, ballroom dances, modern dances, ballet and others, that involve “navigating” the dance floor or stage, are ideal forms of dances that deliver both mental and physical exercises at once, and the effects of music on the brain. Others, such as line dances, dancercises including Zumba, Jazzercise... do not involve as much navigation. They do not deliver as much mental exercise though they dance to music. Partner dances, like in ballroom, swing, Hustle and Salsa, have the added wonder of human haptic touch—an act that is known to have many benefits.

Obesity has hogged the limelight. This is partly because being overweight is a problem you can see. Fitness is not a matter of being skinny; it is a matter of being healthy. Experts including Carlos Crespo, professor of social and preventive medicine at the University of New York, Buffalo, identify seven components of fitness: body composition, cardio-respiratory function, flexibility and range of motion, muscle strength, endurance, balance, and agility and coordination. Dancing is one of the few forms of activities that will help develop, in addition to these seven components, a social network.

¹⁸ Chales F. Emery, Evana T. Hsiao, Scott M. Hill, and David J. Frid, “Short-term effects of exercise and music on cognitive performance among participants in a cardiac rehabilitation program”, *Heart & Lung*, 32(6), 2003, pp. 368–373.

¹⁹ Adapted from Medline Plus, U.S. National Library of Medicine, National Institutes of Health.

About the Author



The author, Dr. Hwa A. Lim, a most fortunate beneficiary of the wonders of modern biotechnology, healthcare system, and social and competitive dancing.

(Hal Archives, Suzhou, China).

Dr. Hwa A. Lim obtained his Ph.D. (science), M.A. (science), and MBA (strategy and business laws) from United States, his B.Sc. (Hons.), ARCS from Imperial College of Science, Technology & Medicine, University of London. He is also known as “The Father of Bioinformatics.” Most of his early work on bioinformatics was performed at a U.S. Department of Energy (DoE) supported supercomputer institute, where he was program director, and tenured state-line faculty. Hal has served as a bioinformatics expert for the United Nations, a review panelist for the U.S. National Cancer Institute, and as an expert consultant for several Fortune 500 companies. He was appointed a member of the International Expert Panel for BioValley Malaysia in March 2004. Currently he is a founding board member of Asian Hustle and Salsa Association (www.ahsaworld.org), which has a mandate to foster cross-cultural understanding, cultivate healthful habits and promote healthy lifestyle through social and competitive dancing of the Hustle, Salsa, ballroom dances and related dances..

His career started with short stints at the Strong Memorial Hospital, New York, then at the Laboratory for Laser Energetics (LLE) at the University of Rochester, and later computational work using computers at the John von Neumann Center of Princeton University. In 1995, he advanced his career to California after having been at Florida State University as a tenured faculty and program director for eight years. In May 1996, he was on the BioMass Panel organized by the American Association for the Advancement of Science (AAAS) at Stanford University.

Hal currently resides in San Jose, California, USA.