



*Swimming can offer anyone
of any age a huge range of benefits.
Feel stronger, healthier and happier.*

Swimming for fitness and health

INSIDE

Swimming offers
something
no other aerobic
exercise does.

8 BENEFITS OF AQUATIC FITNESS

DR. RICK MCAVOY PT, DPT, CSCS

Ever see a flabby dolphin

or a weak-looking competitive swimmer? We didn't think so. That's because swimming is a great way to increase muscular strength and muscle tone — especially compared to several other aerobic exercises.

Take running, for example. When a jogger takes a few laps around the track, that jogger is only moving his or her body through air. A swimmer, on the other hand, is propelling himself through water — a substance about twelve times as dense as air. That means that every kick and every arm stroke becomes a resistance exercise — and it's well known that resistance exercises are the best way to build muscle tone and strength.

Brain cells

Not only does stress weaken our immune system, but stress can also weaken our brains. Participating in stress-relieving swimming can help to build stronger brain cells.



30 minutes

The American Heart Association reports that just 30 minutes of exercise per day, such as swimming, can reduce coronary heart disease in women by 30 to 40 percent.¹

14 POUNDS

Water's buoyancy virtually eliminates the effects of gravity — supporting 90 percent of the body's weight for reduced impact and greater flexibility. For example, a 140 lb person weighs only 14 lbs in the water. Water acts as a cushion for the body's weight-bearing joints, reducing stress on muscles, tendons and ligaments. As a result, aquatic workouts are low impact and can greatly reduce the injury and strain common to most land-based exercises.¹

Unlike exercise machines in a gym

that tend to isolate one body part at a time (like a bicep curl machine, for example), swimming puts the body through a broad range of motion that helps joints and ligaments stay loose and flexible.¹

Live longer

A University of South Carolina study, performed by Dr. Steven Blair, evaluated physical exams and behavioral surveys from thousands of people who were enrolled in the Aerobics Center Study over the past 32 years. "Swimmers had the lowest death rate," said Blair. "This is the first report that examined mortality rates among swimmers in comparison with other types of physical activity and sedentary lifestyle."²

happy happy happy

William Wilson wrote in the 1883 book, *The Swimming Instructor*: "The experienced swimmer, when in the water, may be classed among the happiest of mortals in the happiest of moods, and in the most complete enjoyment of the happiest of exercises."

Wilson probably didn't know this in the 19th century, but all that happiness was likely due to the release of feel-good chemicals known as *endorphins* — one of swimming's most pleasant side effects.¹

Swimming for fitness and health



Did you know that you can improve your overall health, fitness, and quality of life by using water for exercise? There are so many health benefits to swimming!

Swimming is the closest thing to a perfect sport.

Swimming gives your body a great workout without the harsh impact of land-based exercises. It exercises most of the major muscle groups in your body. It's inexpensive, fun, and safe for all ages. It's also a gentle way to improve your level of fitness. Whether you're a seasoned athlete or someone in desperate need of exercise, swimming can help you! In this booklet, we'll dive into 8 benefits of swimming and aquatic fitness.



Exercise Easier

One of the reasons that swimming is so beneficial is that the impact to your bones and muscles is significantly less in the water as opposed to on land. If you submerge your body just to the waist, your body bears only 50% of your weight. Sink to your neck and the water will bear up to 90% of your weight. The buoyancy of the water allows for easier movement. The water also provides the resistance needed for a proper exercise effect. If you have muscles and joints that are stiff and sore or if you are overweight and suffer from arthritis, swimming is the perfect place to start your workout routine.

The Arthritis Foundation suggests that stretching and strengthening muscles in a pool brings on quick pain relief. Swimming in a heated pool will help arthritis sufferers reduce their pain and loosen up tight and stiff joints.



Reduce Stress

Swimming is a great exercise to help reduce stress. As you swim laps, you are also gaining the advantage of releasing beneficial chemicals throughout your body. These endorphins not only help reduce levels of stress and frustration but they also help with the reduction of pain. You can relax and feel good at the same time. Swimming brings on the relaxation response that is similarly found in a yoga class. The constant stretching and relaxing of muscles combined with rhythmic deep breaths is the key. The splash of the water can act as a chant and drown out distractions.

Not only does stress weaken your immune system, but stress can also weaken your brain. Swimming can help change your brain for the better by something called *hippocampal neurogenesis* – the growth of new brain cells in a part of the brain that is weakened by chronic stress. Participating in stress-relieving swimming can help to build stronger brain cells.

New international research commissioned by Speedo³ has revealed that swimmers agree that swimming helps to release stress and tension, makes them more confident about the way they look, and leaves them mentally refreshed.

In this same study, leading research specialists Ipsos MORI examined the psychological benefits of regular swimming. The results revealed that getting in the pool is the perfect way to unwind after a busy day with 74% of those surveyed agreeing that swimming helps release stress and tension. Results also revealed that swimming is the ideal ‘feel good’ exercise with 68% saying that being in the water helps them to feel good about themselves. Last, but not least, over two thirds of those surveyed felt that swimming can have a positive mental impact with 70% agreeing that it helps them to feel mentally refreshed.



3 Keep Your Heart Healthy

One of the most important muscles in your body is your heart. Aerobic exercises have been proven to combat the body's inflammatory response that leads to heart disease. When you exercise aerobically, your lungs increase in size, capacity and efficiency. Swimming is a great aerobic exercise to help improve your overall respiratory fitness level and fight heart disease.

If you only swim for thirty minutes per day your risk for coronary heart disease is cut by almost 40%. Blood pressure, according to the Annals of Internal Medicine⁴, is also improved by swimming aerobically. Swim away high blood pressure, live longer, and avoid coronary heart diseases.

4 Eliminate Cholesterol

Swimming can help balance your good and bad cholesterol levels in your blood. The thin layers of cells that line your arteries have an easier time remaining flexible when you do aerobic exercises and particularly when you swim.

People in their sixties who work out or participate in aerobic exercise have artery functions that are similar to those in their thirties. Arteries expand and contract as you swim which keeps them healthy and fit.

The aerobic power of swimming will raise your good cholesterol levels (HDL) and reduce the levels of bad cholesterol (LDL). For every one percent increase in HDL, the risk of heart disease drops by 3.5 percent.

5 Lower the Risk of Diabetes

Diabetes is an ever growing disease epidemic. Everybody knows that nothing works better for relieving diabetic symptoms and the actual disease than aerobic exercise. By burning only 500 calories a week, men reduce diabetes risk by 6%. Only thirty minutes of swimming the breaststroke three times a week would burn up to 900 calories. This level of exercise could reduce type 2 diabetes risk by over 10%. Women could reduce their risk by over 15% with the same aerobic swimming program.

The report called “Swimming, taking the plunge for a fitter lifestyle,” highlights how swimming cuts men’s risk of dying early by about 50% compared to runners, walkers and those who don’t do any activities.

If you already are experiencing type 1 or 2 diabetes, swim to increase insulin sensitivity. The American Diabetes Association urges every diabetic to get at least 150 minutes per week of moderate physical activity to augment glycemic control.

The Amateur Swimming Association⁵ (ASA) is the national governing body for all things swimming. It published a report that looked at health and fitness research from around the globe. The evidence shows swimming may help increase your life expectancy and save your life.

The report called, “Swimming, taking the plunge for a fitter lifestyle,” highlights how swimming cuts men’s risk of dying early by about 50% compared to runners, walkers and those who don’t do any activities.

It found regular swimming is also great for both sexes because it is likely to reduce heart disease, stroke, and type-2 diabetes by about 535 cases in 100,000 people.

The ASA’s report isn’t the only report that found that swimming cut men’s risk of dying. A University of South Carolina study performed by Dr. Steven Blair² evaluated physical exams and behavioral surveys from thousands of people who were enrolled in the Aerobics Center Study over the past 32 years. The study was published in the International Journal of Aquatic Research and Education. “Swimmers had the lowest death rate,” said Blair. “This is the first report that examined mortality rates among swimmers in comparison with other types of physical activity and sedentary lifestyle. The study concluded that men who swam for exercise had better survival rates than their sedentary peers.” The study took into account

age, body mass index, smoking, alcohol intake, hypertension, other medical factors and family history. “These lower rates of death in swimmers compared with walkers and sedentary men might well be expected, but it is surprising that we also observed lower mortality in swimmers than in runners,” he said. “Swimming appears to be a healthful alternative to other types of physical activity.” Blair also said, “There is no compelling reason to assume that the benefits of swimming would be different for women or for men. In an earlier study in this same population, we found that both women and men had similar benefits from swimming in terms of fitness and other health indicators.”

Blair also found that regular swimmers had higher cardio-respiratory fitness than walkers and sedentary people.

While many of the benefits we’ve talked about are internal and not something you’ll necessarily feel, the following benefits are noticeable externally and are something that will make a difference in your everyday life.



6 Control Your Weight

Swimming can burn quite a few calories. If you are on the heavy side, your adipose tissue makes you even more buoyant in the water. This extra support can make you more comfortable swimming than doing any other sort of land-based exercise. As you get more comfortable and efficient in the water you can increase your intensity to help lose those extra pounds. It is difficult to determine the number of calories you burn when swimming; this depends on your own body type and the intensity you swim. The average calorie burning is anywhere from 500-650 per hour.

A 2006 study researched whether water exercises were as effective as land-based exercises for fat reduction and weight loss in obese women. This study, published in *The Journal of Sports Medicine and Physical Fitness*,⁶ found that there were no differences between water and land-based groups on weight loss as long as similar intensities, durations and frequencies were used.



7 Improve Muscle Tone

Swimming requires a fair amount of muscular strength. In swimming, muscular strength dictates how much force your muscles are able to apply to the water, which in turn moves your body forward in the water.

Swimming works most muscles in the body in a variety of ways with every stroke. When strokes are performed correctly, your muscles lengthen and increase in flexibility. The repetition of strokes improves muscle endurance; and because water creates 10x more resistance against the body than air does in land exercise, the muscles are strengthened and toned.

Swimming also enhances core strength, which is important to overall health and stability in everyday life. The hip, back, and abdominal muscles are crucial to moving through the water effectively and efficiently. Swimming builds these core muscles better than most exercise programs.

8 Increase Flexibility

Swimming gives your body a significant amount of flexibility by providing a wide range of motion around your joints and ligaments. Your arms move in full motions as your hip muscles are engaged to move your leg through the water. You also twist your head and spine from side to side as you swim. With every stroke, you are reaching forward and lengthening your body. This body length makes your muscles more efficient in the water and gives a good stretch from your head down to your toes.

¹health.howstuffworks.com/wellness/aging/retirement/10-health-benefits-of-swimming.htm

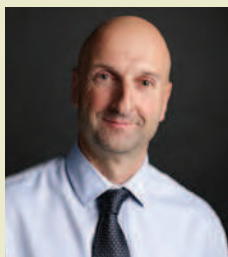
²Research Swimming and All-Cause Mortality Risk Compared With Running, Walking, and Sedentary Habits in Men *IJARE* Volume 2, Issue 3, August 2008. Authors: Nancy L. Chase, Xuemei Sui, Steven N. Blair

³Speedo Study: The fieldwork which was conducted by leading research specialists Ipsos MORI examined the psychological benefits which are associated with regular swimming. All surveys were conducted between 29th June & 3rd July 2012. The results comprise aggregated scores from four separate surveys across US, GB, France and China, taking in a total of 3,979 respondents.

⁴"Effect of Aerobic Exercise on Blood Pressure: A Meta-Analysis of Randomized, Controlled Trials." *Annals of Internal Medicine* 2002 Apr; 136: 493-503. T Whelton, A Chin, X Xin, and J He.

⁵Amateur Swimming Association (ASA) Report, *Swimming, taking the plunge for a fitter lifestyle 2011*

⁶Aerobic exercise in water versus walking on land: effects on indices of fat reduction and weight loss of obese women. *J Sports Med Phys Fitness*. 2006 Dec; 46(4):564-9. Gappmaier E, Lake W, Nelson AG, Fisher AG



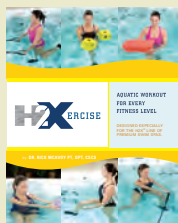
Dr. Rick McAvoy, PT, DPT, CSCS has specialized in Aquatic Physical Therapy for over 25 years. He received his Physical Therapy degree from

the University of Connecticut and his clinical Doctorate in Physical Therapy from Franklin Pierce University in New Hampshire. Rick is certified as a Strength and Conditioning Specialist through the National Strength and Conditioning Association.

He has invented aquatic exercise equipment and developed exercise software which sells both nationally and internationally. He is a published author and researcher in the field of Aquatic Therapy and Conditioning.

Rick is the owner of McAvoy Aquatic & Sports Therapy, an aquatic therapy and sports conditioning facility in New Hampshire. He teaches the benefits of aquatic physical therapy and conditioning at both The University of New Hampshire in the Department of Kinesiology and Franklin Pierce University in the Doctoral of Physical Therapy program where he serves as an adjunct faculty member. He is a Master Instructor in the Burdenko Method, a specialized form of dynamic aquatic and land-based techniques.

Rick lectures nationally throughout the year, teaching the benefits of Aquatic Therapy and Conditioning to health care practices and athletic institutions.



A NEW WAY TO EXERCISE.

Rick McAvoy, PT, DPT, CSCS and Professor of Hydrotherapy has authored an exercise program written exclusively for Master Spas swim spas. This program is designed specifically to help you get the most out of your swim spa and is presented in an easy-to-follow format.



“As a Doctor of Physical Therapy as well as a Certified Strength and Conditioning Specialist who has specialized in Aquatic Therapy for over 25 years, I have treated numerous types of orthopedic and neurological conditions. I have witnessed first hand the power and potential that the water provides in assisting people to improve their physical as well as psychological well-being.

Whether your goal is to lose weight, improve flexibility, balance, your level of fitness or incorporate aquatic cross training into your existing fitness program, Master Spas swim spas are the perfect aquatic machine.”

- Dr. Rick McAvoy PT, DPT, CSCS



Dr. Rick McAvoy using the Michael Phelps Swim Spas by Master Spas at the Michael Phelps Skill Center in Saco, Maine, to treat this patient through aquatic therapy.

Getting it Done Together

Just like land-based exercise programs, people are turning to independent aquatic exercise and therapy and are looking for credible in-home exercise protocols. That's where we come in.

Dr. McAvoy has developed exercise programs exclusively designed for Master Spas to help you get the most out of your swim spa and give you step-by-step activities with the H2Xercise book that will specifically help you reach your goals to a better quality of life. We include the H2Xercise book with each swim spa, along with the H2Xercise System which includes a rowing kit, resistance bands, dumbbells and ankle fins to maximize your exercise and fitness results.*



H2Xercise Bells and Fins.

SwimNumber App (SNAPP)

Along with fitness equipment, Master Spas has also developed an innovative app for the Michael Phelps Swim Spa. Now, it's even easier to achieve your personal goals in swimming, fitness and weight loss.

Designed to work with the Michael Phelps Signature Swim Spas by Master Spas, the new SwimNumber™ App (SNAPP) is easy to use, customize, and operate as it literally takes over the Wave Propulsion™ System of the swim spa. It intuitively changes the speed of the water current at timed increments while you are swimming or exercising, to range from high-impact training conditions to slow cool-down speeds. Water speeds range from 0-100, so you can

* FREE gift with the warranty registration of your swim spa.



A swimmer monitors his workout with the SwimNumber iPad App.

choose your personal level of resistance depending on your workout.

Not only can you design your own custom workouts, the app also features preprogrammed workouts at beginner, intermediate and advanced levels. Tracking fitness progress with metrics like distance, calories, time, etc. can be easily documented and stored. You can manage stored workouts for future reference, as well as share your results on social media or via email. This app can be custom tailored for up to 12 different users, with numerous workouts for each one.

Michael Phelps Swim Spas by Master Spas

It's the perfect temperature year-round. Developed by the World's leading swim spa manufacturer, with input from 18-time gold medalist Michael Phelps and his coach Bob Bowman, the Michael Phelps Swim Spas by Master Spas were designed to meet a broad range of health and wellness needs.

It's important to feel comfortable, safe and confident that you are getting the outcomes you expect. The large flat floor of the Michael Phelps Swim Spa by Master Spas allows for walking, functional resistance training and range of motion exercises to be performed with ease. The built-in railings are a great feature to perform stationary exercises or assist with balance and coordination exercises. The Wave Propulsion™ System provides a smooth current that can provide an added challenge if needed. The water's buoyancy and controlled temperature make the swim spa ideal for a variety of fitness exercises.

Whether you're an avid athlete who needs a competitive edge, or someone in desperate need of exercise, swimming year-round in a Michael Phelps Swim Spa by Master Spas can help you realize your goals. Contact Master Spas today and we'll help you find the best solution.

In addition to the control/workout technology, Master Spas has also brought expert aquatic professionals to you through SNAPP. When you connect SNAPP to your swim spa, you will receive access to videos that feature input from Bob Bowman, world-renowned swimming coach for 18-time gold medalist Michael Phelps. The videos also include instruction by aquatic fitness expert Dr. Rick McAvoy, as well as triathletes demonstrating toning and body building exercises.

SNAPP works only with 2014 or later Michael Phelps Signature Swim Spas by Master Spas and connects either point-to-point directly with the swim spa's sophisticated equipment, home Wi-Fi network, or even the Cloud. The Cloud allows you to connect to the swim spa from anywhere in the world with Internet access.

With an optional waterproof case and a heavy-duty smart device mount, you can position your iPad or iPad mini conveniently in your swim spa for a workout. SNAPP is available to download through the Apple App Store.



MICHAEL PHELPS SIGNATURE SWIM SPAS

by  MASTER SPAS®

For more information and to find a dealer near you, visit

MichaelPhelpsSwimSpa.com

or call 260-436-9100

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OFFICIAL SUPPLIER



International Hot Tub
Association



Master Spas is based in Fort Wayne, Indiana, 90 miles north of Indianapolis. Operating out of a state-of-the-art 27-acre manufacturing campus, we are the largest swim spa manufacturer in the world, and one of the largest portable spas and hot tubs manufacturers in the country. Our management team has over 100 years of spa manufacturing success, and one of the strongest track records in the industry.

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