Creating swimmers improves peoples health, reduces drowning and builds demand for pools, spas & aquatic facilities

Commissioned by
NATIONAL SWIMMING POOL FOUNDATION®
Keeping Pools Safer. Keeping Pools Open.
EXECUTIVE SUMMARY

The Problem

- Physical inactivity, obesity, and an aging society are driving up healthcare and insurance costs. These epidemics continue to grow at an alarming rate.
- About 3,800 drowning deaths (almost 700 in pools), 5,700 emergency department-treated injuries (over 3,300 in pools), and hundreds of civil suits occur every year.
- About half of Americans have a fear of swimming pools.

The Solution

Physical inactivity and obesity will continue to drive up healthcare cost as baby boomers pass 65 years of age and childhood obesity continues to increase. To stabilize and reverse these crippling trends, government and the private sector will have to invest to increase physical activity. Aquatic activity is ideal for sedentary, obese, and older populations. Yet, about 1/2 of Americans either fear deep water or cannot swim. Because so many cannot swim, aquatic activities that improve health and longevity are lost to approximately 100 million Americans - and those they influence. This aversion to water also places large populations at risk of drowning.

Fortunately, many extraordinary, financially-sustainable organizations have exceptional programs to attract and teach millions of people to learn to swim. In addition, one of the leading “aspirational activities” for all ages is to swim for exercise. It is tragic that so many people who aspire to be swimmers – are not swimmers - yet. Many organizations benefit from helping create more swimmers since swimmers create demand for their products and programs.

The Position

Pool, spa, and aquatic businesses, associations, health-focused organizations, and government must support organizations that teach people to swim and promote aquatic immersion and activity. Creating more swimmers improves people’s health, reduces drowning, and reduces healthcare cost inflation, and creates demand for the health-focused pool, spa and aquatic industries that support those who benefit from using the water.

More swimmers = a healthier society and less drowning

National Swimming Pool Foundation™ | 1 |
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INACTIVE & AGING SOCIETY

Inactivity among Americans has resulted in catastrophic increases in obesity. Coupled with an aging society, the health consequences and associated costs are skyrocketing. Water’s buoyancy reduces stress on joints, risk of falls, and injuries. Water’s mass increases cardiac and respiratory exercise, making aquatic activity ideal for historically sedentary and aging populations.

Inactivity

The 2008 Physical Activity Guidelines for Americans\(^1\) recommends that adults avoid inactivity. Some physical activity is better than none, and adults who participate in any amount of activity gain some health benefits. For substantial health benefits, the Guidelines recommend that adults perform at least 150 minutes a week of moderate-intensity aerobic physical activity, 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate and vigorous activity. Children and adolescents should perform 60 minutes or more of physical activity each day.

Overall, approximately one in three American men and nearly 40% of women report NO leisure time physical activity. However, there are definite race/ethnic differences, ranging from 30-33% in non-Hispanic whites and Asians to nearly 50% among non-Hispanic African Americans, Hispanic, or Latino Americans.

In 2011, only about 45% of Americans overall met the aerobic guidelines. However, prevalence ranges from about 65% in 18-24 year old men to little more than 20% in 75+ year old women.²

U.S. Census data indicates that the number of people over 65 years of age will increase by more than 30 million (from 43 to 73 million) from 2012 to 2030. The percentage of adults who met the activity guidelines decreased with age. These groups are ideal candidates to remain active, although most forms of activity – other than aquatic activity – are less suitable for these age groups.

² [Link](http://www.health.gov/paguidelines/guidelines/summary.aspx)
Obesity

Inactive (sedentary) lifestyles – and poor diet – have resulted in dramatic increases in obesity. In 1990, no state had greater than a 15% obesity rate. In stark contrast, by 2010, no state had an obesity rate under 20%. In 2014, 19 states had obesity rates between 25% and < 30%. Since 1980, the obesity rate among children has tripled, with 17% (12.5 million) of children and adolescents between 2 and 19 years old being obese. The increase in childhood obesity is likely to have long-term health, financial, and social consequences.

Reducing obesity by 1% would reduce medical expenditures by about $85 billion over that 20-year period.
Financial Consequences of Obesity

Overweight and obesity are major factors in rising healthcare costs. The medical burden of obesity is estimated to be $147 billion/year. This cost has increased from 6.5% to 9.1% of annual medical costs. With the percentage of people over 65 and continued increases in child obesity rates, it is reasonable to expect that healthcare costs due to obesity will continue to rise for decades. A more recent study suggests that obesity rates will reach 42%-51% by 2030. Reducing obesity by 1 percent below the expected trend would reduce medical expenditures due to obesity by about $85 billion over that 20-year period. Thus, there are substantial financial drivers to encourage greater activity and improved diet.

To further illustrate the cost impact of obesity, a seven-year study of Mayo Clinic employees and family members compared healthcare cost for enrollees with normal body mass versus overweight enrollees. Each higher body mass index category had higher healthcare cost per year. The morbidly obese study participants had annual medical costs ten times higher than overweight study participants:

- Overweight .................. $382/year
- Obese .......................... $1,850/year
- Morbidly Obese .......... $3,086/year
- Morbidly Obese II ........ $5,530/year

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Inactivity, Obesity, Aging Society, and Swimming

The social and financial consequences of mega-trends like inactivity, obesity, and aging are some of the largest that western society faces. Based on the needs of society and the research demonstrating health benefits from aquatic activity, it is important to understand factors that discourage and encourage more people to become competent and capable swimmers.

Drowning remains the second leading cause of unintentional injury and death in children ages 1 to 19 years.

The Centers for Disease Control & Prevention (CDC) reported that overall, 37% of Americans are unable to swim. Unfortunately, African-Americans (62%) and Hispanic-Americans (47%) are less likely to know how to swim.6

Fear also plays an important role. A study performed by the Gallup organization evaluating 815 subjects indicated that even more people are not confident swimmers since about two-thirds of Americans are afraid of deep, open bodies of water like lakes, rivers, or the ocean and 46% are afraid of the deep end of a pool.7

Barriers to Having More Swimmers

Barriers inhibiting people from adopting aquatic activities include, but are not limited to:

- Accessibility to pools and swim lessons.swimtoday.org can help locate local classes
- Cultural issues like not wanting / not choosing to learn to swim or participate in aquatic recreation or aquatic sports
- Racial and ethnic factors, including hair care and norms
- Embarrassed to be seen in swimsuits
- Parents who fear water or are unable to swim discouraging children from learning to swim
- Drowning, illness, or injuries that occurred to family and friends
- Negative publicity
- Bad experiences

Drowning

Drowning has a substantial personal, societal, and financial impact. Although drowning rates have decreased over the last 15 years, drowning remains the second leading cause of unintentional injury and death in children ages 1 to 19 years, accounting for about 1,100 child deaths per year.

Drowning rates are shockingly high among African-American adults, of whom about 62% are unable to swim. African-American children between 5-19 years old are six times more likely to drown in a swimming pool than their peers. Formal swimming lessons are associated with an 88% reduction in risk of drowning in 1- to 4-year old children.

Clearly, swimming competence would also prevent drowning in older age groups.

Financial Consequences of Drowning

It is impossible to quantify the sociological impact that drowning has had over generations. Lifetime medical costs for unintentional drowning deaths in 2005 in the U.S. totaled almost $13 million. Lifetime medical costs for non-fatal drowning in 2005 reached more than $82 million. If indirect costs such as lifetime productivity losses are included, the fatal and nonfatal costs to society top $4.6 billion and $0.6 billion, respectively. This totals more than $5.3 billion in direct and indirect costs from fatal and nonfatal drowning that occurs in a single year.

If this number is consistent each year, the financial impact of drowning is about $100 billion for the past 20 years.

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8 WISQARS Cost of Injury Module: http://wisqars.cdc.gov:8080/cost/
Drowning also has a substantial negative economic impact on companies who build, service, operate, and supply products in this field due to liability cost. An informal opinion from a legal expert estimates that a typical drowning lawsuit costs about $200,000 to defend/settle. Also, the negative perceptions influence consumers to spend discretionary dollars in other areas that may not result in physical activity. Learning to swim remains a key defense against drowning in addition to preventing negative sociological and financial consequences.

The financial impact of drowning is about $100 billion for the past 20 years.
OPPORTUNITIES TO HAVE MORE SWIMMERS

Fear, drowning, disease, injuries, and social and cultural forces are substantial influences to discourage aquatic activity. It is also difficult to change people’s habits. However, the National Swimming Pool Foundation believes that getting more people swimming is vital to national health as a way to prevent ongoing harm from drowning and to create economic prosperity among organizations that help encourage a healthier population.

**Strong forces support the potential for more people to become swimmers:**

- Civilization formed and prospered beside water
- Instinct, curiosity, or fun draw children and adults to water
- Parents hope that children will survive despite their fears
- The growing body of evidence is that swimming prolongs life and provides unique health benefits

Government and industry will invest heavily to encourage and incentivize physical activity to control healthcare costs and societal suffering.

Society’s needs, the benefits of aquatic activity, and the inability of millions to swim has compelled the National Swimming Pool Foundation to invest time, effort, and money to help more people become swimmers. Becoming capable and confident in the water opens the door to healthier bodies and can reverse the catastrophic societal health and financial consequences of inactivity and aging.

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14 Irwin, C., Irwin, R, Martin, N., 7 Rossi, Presented to USA Swimming, Constraints Impacting Minority Swimming Participation, Phase II.
Swimming is a Desirable Activity

The Sporting Goods Manufacturers’ Association partners with five other organizations to ascertain popularity of various activities. In 2011, they measured the activity that seven age groups ranging from six to 65+ years of age hope or wish to do (aspirational activity). Swimming for fitness was in the top three aspirational activities for EVERY age group. In fact, “swimming for fitness” was the leading aspirational activity for the 6-12 and the 65+ age groups. This finding reinforces commonly-accepted beliefs surrounding the popularity of aquatic activities and swimming in particular. A different published survey of African-Americans indicated a strong desire to swim more and intent to visit a pool weekly despite no/low swim ability.

Health Benefits of Aquatic Immersion and Activity

It is universally accepted that physical activity is good for health and reduces mortality rates. Studies that compare mortality rates between swimmers and other common physical activities are rare. The most compelling published findings are those which compared 40,517 men (20-90 years of age) who completed health examinations from 1971-2003 as part of the Aerobics Center Longitudinal Study administered by the Cooper Institute. After adjustments for age, body mass index, smoking status, alcohol intake, and family history of cardiovascular disease, swimmers had a 50% and 49% lower all-cause mortality risk than did men who were walkers or runners.

<table>
<thead>
<tr>
<th>MORTALITY RATE BY EXERCISE TYPE</th>
<th>Sedentary</th>
<th>Walkers</th>
<th>Runners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimmers had a lower risk of dying compared with other activities</td>
<td>By 56%</td>
<td>By 51%</td>
<td>By 47%</td>
</tr>
<tr>
<td>Adjustments for age, BMI, alcohol intake, and family history of cardiovascular disease</td>
<td>By 53%</td>
<td>By 50%</td>
<td>By 49%</td>
</tr>
</tbody>
</table>

Additional adjustments for baseline cardiovascular disease, hypertension, diabetes mellitus and hypercholesterolemia did not change the inverse association between different activities and all-cause mortality.

Chase, Sui & Blair (2008), IJARE 2, 213-23.


Swimmers had a 50% and 49% lower all-cause mortality risk than did men who were walkers or runners.
Hydrostatic pressure from immersion in water forces more blood to the central organs, increasing cardiac stroke volume and cardiac output, which is similar to the effect caused by exercise.\textsuperscript{17} Cardiac stretch is a key measure of heart exercise and health. Thus, immersion causes heart exercise (stretch) that decreases with age and increases with water temperature and depth.

Water activity and immersion is also ideal for many other ailments. Water is an ideal environment for individuals who suffer from diseases like arthritis, diabetes, dementia, and multiple sclerosis and from physical injuries. Go to the complimentary electronic publication called \textit{Water Immersion Works} for more information. Water activity is the right solution for the aging and growing population who are less prone to exercise. With minimal risk of injury, they achieve improved heart, kidney, and respiratory functions, greater relaxation, flexibility, and many other benefits.\textsuperscript{15,17} Unfortunately, aquatic activity is unlikely if an individual does not feel comfortable in the water and cannot swim.

\begin{center}
\textbf{BLOOD FLOW INCREASES}
\end{center}

The heart stretches (exercises) when people are immersed in water causing increased blood flow.

\begin{center}
\begin{tabular}{|c|c|}
\hline
59\% & \textbf{INCREASE in blood flow in YOUNGER PEOPLE} \\
\hline
22\% & \textbf{INCREASE in blood flow in OLDER PEOPLE} \\
\hline
\end{tabular}
\end{center}


More swimmers = a healthier society and less drowning

\textsuperscript{17} Tajima, J., Am. J. Physiology 1988, 254(6 Pt 2): R977-R983.
CREATING SWIMMERS CREATES INDUSTRY GROWTH

Many organizations who influence society are expanding efforts to encourage healthy activity. Insurers and employers are expanding programs to financially incentivize people to become and remain active. Similarly, government continues to promote healthy activity to improve longevity, life quality and reduce government funded medical coverage.

In addition to benefiting society, members of the pool, spa and aquatic industry have a financial motivator to encourage or fund swim programs. Swimming ability influences swimming pool purchases, and participation in water-related activities. Strong swimmers are two times more likely to own or intend to purchase swimming pools in the near future.¹⁸

This conclusion is based on market research of Americans with a household income in excess of $75,000 -- co-funded by NSPF and the National Marine Manufacturers Association (NMMA) and performed by YouGov. In contrast, if a parent does not know how to swim, there is only a 13% chance that a child in that household will learn to swim.¹⁹ Therefore, swimming inability inhibits growth in demand for pools, spas and aquatic facilities now and for generations into the future.

Strong swimmers are 2X more likely to own or intend to purchase a swimming pool.

CONCLUSION

Physical inactivity continues to rise, causing troubling increases in obesity and healthcare costs. This trend is not likely to change for many years since child inactivity rates are high and the baby boomer generation is passing 65 years of age. Government, insurer, and the employers are incentivizing individuals to be more active to improve health and reduce healthcare cost. Activity options are limited for sedentary and older populations. Furthermore, swimming ability is a key skill that prevents drowning. In addition, aquatic immersion and activity is an ideal option due to buoyance, cardiac benefits, and respiratory benefits.

Although there are factors that discourage individuals from becoming competent swimmers, there are trends and influences that can overcome these factors. Several exceptional organizations are successful in helping people become swimmers.

As a result, the National Swimming Pool Foundation adopts and advocates the following position.

The Position

Pool, spa, and aquatic businesses, associations, health-focused organizations, and government must support organizations that teach people to swim and promote aquatic immersion and activity. Creating more swimmers improves people's health, reduces drowning, reduces healthcare cost inflation, and creates demand for the health-focused pool, spa and aquatic industries that support those who benefit from using the water.