

The March of Dimes Foundation

The March of Dimes Foundation, or the March of Dimes, is a non-profit organization headquartered in Arlington, Virginia, focused on the health of pregnant women and infants in the US. Former United States president Franklin Delano Roosevelt founded the March of Dimes, then called the National Foundation for Infantile Paralysis, in 1938 to address polio. Polio is a viral illness that infects the spinal cord and may lead to paralysis. Roosevelt contracted polio in 1921, which left him permanently paralyzed from the waist down. During the 1960s, after scientists introduced polio vaccines, March of Dimes shifted its focus to prevent preterm birth and birth defects. As a non-profit organization, March of Dimes provides community service, funds for research, and efforts to educate the public about preterm birth and birth defects. While March of Dimes' original goal was to help reduce the spread of polio in the US, it was also one of the first organizations to lead a campaign to prevent birth defects and infant mortality.

Polio outbreaks in the US began to grow in frequency during the 1940s, which paralyzed over 35,000 people annually. The spread of polio peaked during the summer months, which people thought to be correlated to the use of community swimming pools, causing panic throughout communities. By the 1950s, polio had become one of the most dangerous infectious diseases among children. In 1952, more than 60,000 children contracted the virus, leaving thousands paralyzed and over 3,000 dead. Hospitals set up tank respirators, or iron lungs, for polio patients. Iron lungs are mechanical respirators, stimulating breathing for polio patients with paralyzed chest muscles. In the book *The Social Transformation of American Medicine*, author Paul Starr states that, during the 1950s, Americans greatly feared polio.

Roosevelt founded March of Dimes as the National Foundation for Infantile Paralysis, or NFIP, in 1938 with an initial focus on polio, assisting Americans who suffered from the disease. The president of March of Dimes at the time, Basil O'Connor, initially set out to create a nationwide network of local chapters to raise money and administer care for polio patients. Later, that network became especially useful as polio cases started to rise in the US. O'Connor also led fundraising for March of Dimes, collecting large numbers of small amounts of money. For instance, under O'Connor's leadership, the organization collected over seven billion dimes, or the US ten-cent coin, using the money to fight polio. Young children donated many of those dimes.

In the 1940s, March of Dimes had an administration, state chapters, local chapters, and volunteers. By the 1950s, March of Dimes included 3,100 chapters, which volunteers largely operated. Alongside volunteers, the organization's chapters included physicians and nurses. Those volunteers and health care professions helped to educate the public about polio and lead programs to train physical therapists, who helped polio patients to rehabilitate.

During the 1940s, the small amounts of money collected from millions of people supported the care of polio patients and research to prevent and treat the disease. Those funds financed researchers Jonas Salk and Albert Bruce Sabin, among others, who developed polio vaccines during the 1950s and 1960s. In 1954, millions of US schoolchildren voluntarily participated in trials of Salk's vaccine. On 12 April 1955, epidemiologists at the University of Michigan in Ann Arbor, Michigan, announced that the successful trial results, showing that the vaccine worked. Sabin later developed an oral vaccine, which replaced Salk's vaccine during the 1960s.

Following the discovery of polio vaccines, O'Connor began to shift the focus of the March of Dimes. When scientists like Salk and Sabin developed the polio vaccine, money given to March of Dimes' polio program began shrinking, leading to a lack of financial support for the organization's polio chapters. As a result, the organization shifted its focus to disabilities and disorders appearing in

infancy and childhood. On 22 July 1958, at a press conference held in the grand ballroom of the Waldorf-Astoria Hotel in New York City, New York, O'Connor announced that March of Dimes would expand to aid children born with birth defects.

During the 1960s, the organization shifted its efforts to prevent birth defects and infant mortality. At that time, the deeper cause of birth defects was unknown, and only the effects were visible. Some defects appeared to run in families, having some hereditary components, but people did not know much more about birth defects. To better understand what caused birth defects, March of Dimes began to fund genetics research. For example, the organization gave a grant to molecular biologist James Watson in 1952 to travel to the University of Cambridge in Cambridge, United Kingdom, where he met another molecular biologist named Francis Crick. Watson and Crick helped to identify the double helix structure of deoxyribonucleic acid, or DNA, which are materials in the body that carry genetic information. In 1962, Watson and Crick received a Nobel Prize in Physiology and Medicine for that discovery. During that same time, the organization also funded microbiologist Robert Guthrie, who developed a newborn screening blood test for phenylketonuria, which is a birth defect that leads to seizures or psychiatric disorders. Additionally, the organization established birth defects treatment centers in teaching hospitals across the US.

During the 1970s, March of Dimes continued to focus on birth defects and infant mortality but also expanded to address premature birth, which is the birth of a newborn before thirty-seven weeks and may result in health issues, such as low birthweight. In 1976, to demonstrate the organization's shift to focus on birth defects and infant mortality, the organization changed its name from the National Foundation for Infantile Paralysis to March of Dimes Birth Defects Foundation. In the early 1970s, March of Dimes established an office of public affairs in Washington, DC, to better advocate for birth defect prevention and education, as well as care for newborns with birth defects in the US. Additionally, throughout the 1970s, March of Dimes initiated a regional system of neonatal intensive care units, or NICUs, where infants with birth defects or born prematurely could receive special care from hospital staff with specialized training and equipment to treat those infants.

Throughout the 1980s, March of Dimes continued to educate mothers about premature birth and fund research to develop tools used to treat prematurely-born infants. In 1982, March of Dimes created a series of videos called "Babies and You," which were presented in various workplaces. The purpose of those videos was to educate working mothers about ways to decrease the risk of premature birth. Also, March of Dimes funded medical doctor T. Allen Merritt, who developed a pulmonary surfactant, a medication to treat respiratory distress in prematurely-born infants, in 1987.

Throughout the 1990s and early 2000s, March of Dimes expanded its focus to include more advocacy to educate the public about ways to prevent birth defects. In 1992, the US Public Health Service recommended that all women, who planned to become pregnant, consume 400 mg of folic acid, a type of vitamin, daily. The US Public Health Service recommended that to help reduce the risk of a neural tube defect, which is a birth defect of the brain and spinal cord, during pregnancy. And in 1999, alongside the Centers for Disease Control and Prevention, the American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics, March of Dimes launched a national campaign to persuade women to abide by the folic acid guidelines, called the Folic Acid Campaign. That campaign informed health care providers and the public about the use of folic acid to reduce the risk of a neural tube defect during pregnancy. For example, in 1995, a national survey in the US found that only four percent of women were aware of the benefits of folic acid, but in 2004, that number increased to twenty-four percent of women. March of Dimes also helped to lead several advocacy campaigns to support child health, including the passage of the State Children's Health Insurance Program in 1997. That program guaranteed health care coverage for up to five million children. And in 2000, the organization also helped to enact the Birth Defect Prevention Act, establishing a National Center on Birth Defects and Developmental Disabilities, further expanding efforts to provide support for and improve the lives of those born with birth defects.

On 8 September 2000, March of Dimes National Board of Trustees helped expand newborn screenings. That new priority also changed the goals of the volunteers and staff of fifty-two March of Dimes chapters and their 213 divisions located throughout the US and its territories. Starting in 2000, March of Dimes began a national campaign to advocate for every US state and territory to

require that infants participate in screenings for birth defects that had reliable detection measures and treatments. In July 2006, March of Dimes issued National Newborn Screening Report Cards to measure the success of their newborn screening campaign. Overall, thirty-one states, including approximately sixty-four percent of infants, received newborn screening in 2006. Then in 2007, March of Dimes shortened its name from March of Dimes Birth Defects Foundation to March of Dimes Foundation.

During the 2010s, March of Dimes continued its efforts to raise awareness about birth defects and its causes. On 3 March 2015, the organization joined several organizations in an event called World Birth Defects Day to promote efforts to increase surveillance and care for infants with birth defects. By the event's third anniversary in 2017, several other countries participated, helping to bring awareness to birth defects around the world. Also during that time, in 2016, March of Dimes funded research, providing more than five million US dollars to researchers and continuing to investigate the cause of birth defects and ways to improve health care.

Since its establishment, March of Dimes has raised awareness of birth defects in the US and globally. Additionally, the organization's research grants have helped elucidate the causes of birth defects and discover treatments for them, helping to improve the lives of mothers and children.

Sources

1. Baghdady, Georgette, and Joanne Maddock. "Marching to a Different Mission." *Stanford Social Innovation Review* 6 (2008): 59-65.
2. Beaubien, Jason. "Wiping Out Polio: How the U.S. Snuffed Out A Killer." *National Public Radio*, October 15, 2012 <https://www.npr.org/sections/health-shots/2012/10/16/162670836/wiping-out-polio-how-the-u-s-snuffed-out-a-killer> (Accessed September 27, 2020).
3. Berg, Ronald H. and Basil O'Connor. *The Challenge of Polio, the Crusade Against Infantile Paralysis*. New York City: Dial Press, 1946.
4. Centers for Disease Control and Prevention. "Polio Elimination in the United States" Centers for Disease Control and Prevention. <https://www.cdc.gov/polio/what-is-polio/polio-us.html> (Accessed September 27, 2020).
5. Crick, Francis H. C. "The Origin of the Genetic Code." *Journal of Molecular Biology* 38 (1968): 367-79.
6. Erickson, J. David. "Folic Acid and Prevention of Spina Bifida and Anencephaly." *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report*, September 13, 2002 <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5113a1.htm> (Accessed September 27, 2020).
7. Guthrie, Robert. "Screening for "inborn errors of metabolism" in the newborn infant—a multiple test program." *Birth Defects* 4 (1968): 92-8.
8. March of Dimes. "March of Dimes on Working Mother's 100 Best Companies List." *March of Dimes*. <https://www.marchofdimes.org/news/march-of-dimes-on-working-mothers-100-best-companies-list.aspx> (Accessed September 27, 2020).
9. Merritt, T. Allen, Hallman, Mikko, Berry, Charles, Pohjavuori, Maija, Edwards, David K., Jaaskelainen, Jaakko, Grafe, Majorie R., Vaucher, Yvonne, Wozniak, Paul, Heldt, Gregory, and Rapola, Juhani. "Randomized, placebo-controlled trial of human surfactant given at birth versus rescue administration in very low birth weight infants with lung immaturity." *Fetal and Neonatal Medicine* 118 (1991): 581-94 [https://www.jpeds.com/article/S0022-3476\(05\)83387-6/pdf](https://www.jpeds.com/article/S0022-3476(05)83387-6/pdf) (Accessed September 27, 2020).
10. National Museum of American History. "Scientific and Medical Legacy." *National Museum of American History*. <https://amhistory.si.edu/polio/howpolio/scimed2.htm> (Accessed September 27, 2020).
11. National Museum of American History. "The Iron Lung and Other Equipment." *National Museum of American History*. <https://amhistory.si.edu/polio/howpolio/ironlung.htm> (Accessed September 27, 2020).
12. Rose, David. "A History of the March of Dimes." *March of Dimes*. <https://www.marchofdimes.org/mission/a-history-of-the-march-of-dimes.aspx> (Accessed September 27, 2020).

13. Rosenthal, Eric T. "Inside the March of Dimes Research Funding Debacle." *MedPage Today*, August 23, 2018 <https://www.medpagetoday.com/pediatrics/generalpediatrics/74711> (Accessed September 27, 2020).
14. Sabin, Albert B. "Oral Poliovirus Vaccine: History of Its Development and Use and Current Challenge to Eliminate Poliomyelitis from the World." *The Journal of Infectious Diseases* 151 (1985): 421-36.
15. Salk, Jonas E. "Poliomyelitis Vaccine in the Fall of 1955." *American Journal of Public Health and the Nation's Health* 46 (1956): 1-14 <https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.46.1.1> (Accessed September 27, 2020).
16. Science History Institute. "Jonas Salk and Albert Bruce Sabin." Science History Institute. <https://www.sciencehistory.org/historical-profile/jonas-salk-and-albert-bruce-sabin> (Accessed September 27, 2020).
17. Shampo, Marc A., Kyle, Robert A., and Steensma, David P. "Albert Sabin - Conqueror of Poliomyelitis." *Mayo Clinic Proceedings* 86 (2011): e44 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3127575/pdf/mayoclinproc_86_7_023.pdf (Accessed September 27, 2020).
18. Starr, Paul. *The Social Transformation of American Medicine*. New York City: Basic Books, 1982.
19. Takaro, Timothy. "The Man in the Middle." *Dartmouth Medicine* 29 (2004): 52-67 https://dartmed.dartmouth.edu/fall04/pdf/Man_in_the_Middle.pdf (Accessed September 27, 2020).
20. Walani, Salimah R. and Biermann, Janis. "March of Dimes Foundation: leading the way to birth defects prevention." *Public Health Reviews* 38 (2017) <https://publichealthreviews.biomedcentral.com/articles/10.1186/s40985-017-0058-3> (Accessed September 27, 2020).
21. Watson, James. *The Double Helix: A Personal Account of the Discovery of the Structure of DNA*. New York City: Atheneum, 1968. http://sites.bu.edu/manove-ec101/files/2017/09/Watson_The_Double_Helix.pdf (Accessed September 27, 2020).
22. Whitman, Alden. "Basil O'Connor, Polio Crusader, Dies." *The New York Times*, March 10, 1972 <https://www.nytimes.com/1972/03/10/archives/basil-oconnor-polio-crusader-dies.html> (Accessed September 27, 2020).