March of Dimes Campaign to End Premature Birth

**The History**
For more than 75 years, the March of Dimes has been a powerful force for improving the health of infants, children and their families. The March of Dimes was founded in 1938 by Franklin Delano Roosevelt to lead the fight to eradicate poliomyelitis. At the time, polio was a mysterious childhood crippler that paralyzed tens of thousands, including FDR himself. In response, the March of Dimes mobilized an effort that was unheard of in the history of medical philanthropy.

After funding a nearly 20-year effort to develop an effective vaccine and building a grassroots volunteer force second to none, the March of Dimes provided for the vaccination of hundreds of millions of children and adults. In doing so, the March of Dimes fulfilled its original charter: the practical elimination of polio in the United States and more recently, very nearly the rest of the world. This now legendary accomplishment proved to be just the first of many that would improve maternal and child health worldwide.

**The Facts**
Premature birth is one of the most intractable health challenges in modern medicine.
- One in ten babies in the United States is born prematurely each year.
- Premature birth is the leading cause of newborn death from birth to age five.
- Nearly half a million babies are affected annually.
- Premature birth costs society more than $26 billion a year.
- The consequences of premature birth often lead to a lifetime of significant health challenges.
- A late-premature baby's risk of dying is about three times that of a full-term infant.
- 15 million children are born prematurely every year worldwide.

**The Partnership**
- A network of Prematurity Research Centers fostering a new model of collaboration with the goal of ending premature birth.
- The five March of Dimes Prematurity Research centers are: Stanford University, the Ohio Collaborative, Washington University in St. Louis, the University of Pennsylvania, and the University of Chicago-Northwestern-Duke.
- A March of Dimes scientific review committee evaluates research progress annually and shapes its direction.

**The Research**
- We are pioneering a transdisciplinary approach—the most diverse mobilization of scientific expertise ever brought to bear on the elimination of prematurity.
- Goals of the Prematurity Research Center at Stanford:
  - Discover the causes of premature birth
  - Develop new ways to identify at risk women or pregnancies
  - Rapidly turn breakthroughs into effective clinical and policy-based solutions
- Themes of research Stanford University will pursue include:
  - Bioinformatics Gene-Environment
  - Infection/inflammation
  - Transcriptome and Preterm Birth

**The Campaign**
The paradigm of a single researcher in a lab working alone belongs to another era and another set of problems. Solving prematurity will require extraordinary effort and an extraordinary commitment to bring together the very best of what we know and have learned. Nothing less will do.

The main research focus of the March of Dimes and its five Prematurity Research Centers is ending prematurity. That's why we've committed to raising $75 million dollars to develop and accelerate breakthrough developments that will save lives and countless families the heartbreaking of having a baby that is born too soon. So help us give every baby a fighting chance. Please join us in our campaign to end premature birth.

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The Evidence

The more than 200 researchers working in a transdisciplinary model represent multiple specialities from the medical, scientific, bio-engineering and academic communities. The sheer number of publications, speaking engagements and abstracts that have been presented to the medical community at large reflects not only the magnitude of the challenge prematurity presents, but also the international attention it's receiving. The papers detailing the collaboration inside and across the Prematurity Research Centers are presented below as evidence of this extraordinary effort.

Published Articles

2011

2012

2013
The Evidence

2014

2015


2016


Articles in Press:


Abstracts & Presentations:

2012


15. Patel CJ, Shaw GM, Stevenson DK, Butte AJ. EWAS: Capturing the Breadth of Environmental Connections with Disease. 2012 SPER


2013


2014


33. Shachar BZ, Mayo J, Lyell DJ, Stevenson DK, Shaw GM, Blumenfeld YJ. Risk for Spontaneous Preterm Birth among Inter-racial/ethnic Couples. 2015 SMFM.
38. Shachar BZ, Gajek R. Heavy Metals and Risk for Spontaneous Preterm Birth. 2015 SRI.
41. Baca QJ, Gaudilliere B, Nolan GP, Angst MS. Immune Signatures of Women with Preterm Birth. 2015 SRI.
42. Zhao H, Kalish F, Wong RJ, Stevenson DK. Role of Heme Oxygenase-1 in the Regulation of Immunosuppressive Function of Myeloid cells. 2015 PAS.
46. Labo PT, Wise PH, Shaw GM, Stevenson DK, Jones JH. Geographic and Temporal Patterns in Low & Very Low Birth Weight Births in the United States. 2015 PAS.

2016
49. Mayo J, Shachar B, Stevenson DK, Shaw GM. Teenage pregnancy, body mass index, and preterm birth. 2016 SMFM
52. Ness A, Mayo J, Stevenson D, Shaw G. To Compare Current Rates of Preterm Birth Based on Preterm Birth (PTB) Subtypes for Twins and Singletons by Gestational Age and Maternal Demographics in Recent Data Using Best Obstetrical Estimate for Gestational Age. 2016 SRI
53. Zhao. HO-1 expression in myeloid cells affects oxidative stress, uterine infiltration and placental angiogenesis in pregnancy. 2016 SRI.
2017


Invited Symposia, 2012 – present


www.prematurityresearch.org/stanford/