

# THE FIRST EVER FUTURE OF PREGNANCY HEALTH REPORT

Actionable insights for improving pregnancy health in the United States

NOVEMBER 2022



Survey conducted by the Harris Poll  
**mirvie**

In the fall of 2022, Mirvie surveyed 1022 new or expecting moms in the United States to inspire meaningful change in pregnancy care.



There is an urgent need to identify who is at risk of complications and tailor education and preventive care toward them.



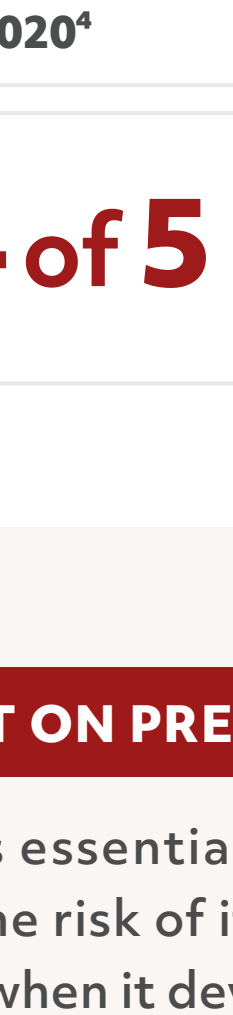
New or expecting moms overwhelmingly believe knowing their risk of pregnancy complications can enable proactive, personalized and preventive pregnancy care.

## KEY FINDINGS

### MOMS DEMAND MORE INFORMATION

**9 out of 10**

new or expecting moms want more information about their individual risk of pregnancy complications to optimize prevention



### EDUCATION IS FALLING SHORT

**Only 1 in 10**

could correctly identify all the most common preeclampsia warning signs and symptoms

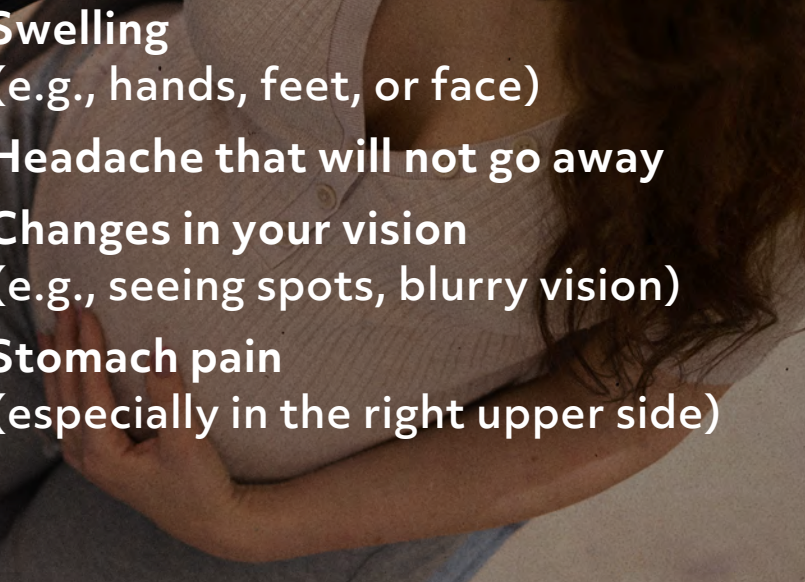
## AN ERA OF DECLINING MATERNAL HEALTH

The United States is experiencing an era of declining maternal health with large economic costs and lifelong health consequences for expecting parents and babies.

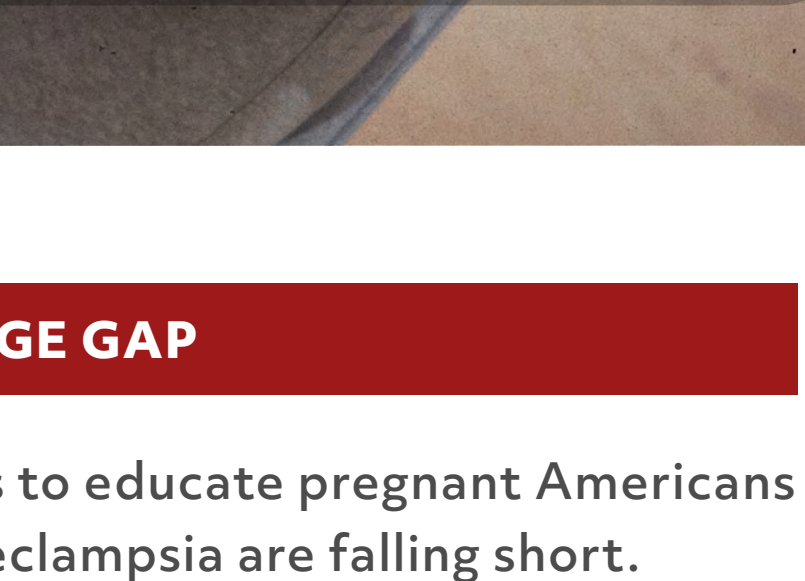
**2x**

Deadly conditions such as hypertensive disorders of pregnancy, including preeclampsia, doubled between 2007 and 2019<sup>1</sup>

Unexpected complications affect 1 in 5 pregnancies<sup>2</sup> and are a primary driver of maternal and childhood morbidity and mortality.<sup>3</sup>



Pregnancy-related deaths increased by nearly 37% between 2018 and 2020<sup>4</sup>



CDC: Pregnancy-related deaths 2018-2020

CDC 2022 Report: 4 of 5 pregnancy-related deaths are preventable<sup>5</sup>

**4 of 5**



## SPOTLIGHT ON PREECLAMPSIA

Awareness of preeclampsia is essential because there are preventive measures to reduce the risk of it in pregnancy, and it is critical to quickly recognize when it develops to mitigate its severity.

## PREECLAMPSIA IMPACTS UP TO 8% OF PREGNANCIES AND CAN HAPPEN TO ANYONE.

### PREECLAMPSIA CAN CAUSE:

- High blood pressure and protein in the urine
- In severe cases, temporary or permanent damage to your kidneys, liver, or other organs
- Seizures, known as eclampsia
- Increased lifetime risk of heart disease for moms and babies

### COMMON SIGNS AND SYMPTOMS:

- Elevated blood pressure
- Swelling (e.g., hands, feet, or face)
- Headache that will not go away
- Changes in your vision (e.g., seeing spots, blurry vision)
- Stomach pain (especially in the right upper side)

## THE KNOWLEDGE GAP

The survey results show current attempts to educate pregnant Americans with crucial information about preeclampsia are falling short.

While most felt knowledgeable about preeclampsia, the vast majority do not know the common signs and symptoms of the complication despite most discussing their preeclampsia risk with their pregnancy care providers.

## ONLY 1 IN 10 WERE ABLE TO IDENTIFY ALL OF THE COMMON WARNING SIGNS OF PREECLAMPSIA CORRECTLY

10%

### HOWEVER:

**75%** report they have a good understanding of preeclampsia

**59%** report discussing their preeclampsia risk with their pregnancy care providers

## UNDERSTANDING OF THEIR PERSONAL RISKS

**44%**

report they did not understand their risk of preeclampsia and other pregnancy complications before getting pregnant

**67%**

wish they knew more about their risk of preeclampsia and other pregnancy complications

## EXPERIENCES WITH PREGNANCY COMPLICATIONS

**37%**

report they experienced common complications such as preterm birth, preeclampsia or gestational diabetes

**44%**

of respondents with prior complications reported experiencing preeclampsia

## FAMILIES DESERVE A MORE CONFIDENT PATH THROUGH PREGNANCY

The Mirvie RNA platform can help pregnancy health enter a new preventive future by predicting complications like preeclampsia months before they occur.

**By knowing who is at risk, you can begin to personalize care and target in-depth education to the moms who need it the most.**

This report shows there is still a major gap in education despite the best efforts of care providers and the best intentions of expecting moms.

— Maneesh Jain, Co-Founder and CEO of Mirvie

## OPENING A NEW WINDOW INTO PREGNANCY HEALTH

New or Expecting Moms Want to Know Their Personal Risk of Complications and Expect Their Pregnancy Care to be Personalized Based on It



Currently, moms and their pregnancy care providers do not have access to tools to accurately predict pregnancy complications months before symptoms appear.



This report reveals the overwhelming desire for a simple blood test to predict preeclampsia after respondents were provided facts about the condition and how such a test could enable preventive interventions like low-dose aspirin and blood pressure monitoring.

## KNOWLEDGE IS POWER

**91%**

would want to take a predictive test early in pregnancy that lets them know their chances of developing problems like preeclampsia, even if it were not 100% accurate

**22%**

believe a test to predict preeclampsia would add to their anxiety

## PERSONALIZING PREGNANCY CARE

**88%**

believe knowing their risk of preeclampsia would make them more motivated to follow their pregnancy care providers' medication recommendations

## 9 OUT OF 10 SAY THAT IF THE TEST SHOWED THEIR PREGNANCY'S INDIVIDUAL PREECLAMPSIA RISK WAS HIGH:

They would expect that their care providers would make a personalized plan for their pregnancy care

94%

They would want to discuss the signs and symptoms of preeclampsia with their pregnancy care providers to make sure they know when to call them

95%

They would be interested in options to monitor their blood pressure at home

94%

**92%** believe if the test showed their pregnancy's individual preeclampsia risk was low, it would make them feel more at ease about their pregnancy care

**46%** believe access to a predictive test for preeclampsia would empower them to advocate for themselves during their pregnancy

## THE MIRVIE RNA PLATFORM: SHAPING A NEW FUTURE

It's no surprise women expect a lot more innovation and personalization in their pregnancy care. With the Mirvie RNA platform, we can soon bring life-changing advancements to pregnancy health.

**From targeted education, visit schedules, monitoring, medications, lifestyle changes and appropriate follow-up testing, pregnancy care will be transformed from one-size-fits-none to right-sized care for every mom.**

This new approach to pregnancy health is desperately needed to chart a new course for moms in the United States.

— Alison Cowan, M.D., M.S.C.R. and Head of Medical Affairs of Mirvie

## KNOWLEDGE MOTIVATES ACTION AND ENGAGEMENT IN PREGNANCY CARE

New and expecting moms want more information about their pregnancies

In the report, new and expecting moms highlight the importance of information during pregnancy. The more information they have about their pregnancy, the more engaged and empowered they feel about their care.

## THE REPORT REVEALED 9 OUT OF 10 NEW OR EXPECTING MOMS:

**92%** Trust the healthcare provider(s) who manage their pregnancy

**96%** Believe the more information they have, the more control they have over their care choices

**96%** Believe the more information they have about their pregnancy, the better the conversations are with their pregnancy health care providers

**94%** Believe the more information they have, the more empowered they feel

## A BREAKTHROUGH FOR PREDICTING PREECLAMPSIA AND PRETERM BIRTH

Landmark pregnancy health research demonstrates the Mirvie RNA platform predicts preeclampsia and preterm birth months in advance.<sup>6,7,8</sup>

### NATURE STUDY

Predicts 75% of preeclampsia cases by revealing the underlying biology of each pregnancy<sup>7</sup>

### AJOG STUDY

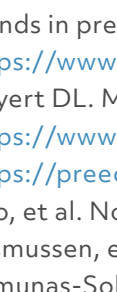
Predicts 76% of early preterm birth cases and identifies distinct pathways driving the condition's development<sup>8</sup>

Mirvie is conducting ongoing clinical research to validate existing peer-reviewed evidence, enhance the platform's performance, and improve the understanding of other pregnancy complications.

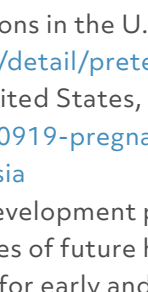
## BRINGING PREGNANCY HEALTH OUT OF THE DARK

### THE MIRVIE RNA PLATFORM

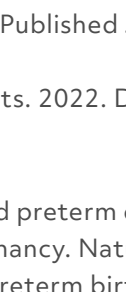
The power to transform how we predict, prevent and treat unexpected complications.



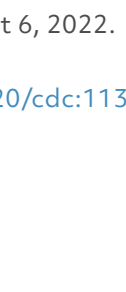
The platform combines revolutionary analysis of tens of thousands of RNA messages from the baby, the placenta and the mom, with machine learning.<sup>6,10</sup>



Using a simple blood test, it reveals RNA messages driving the dramatic changes in pregnancy, like a baby's growth and a mom's body.<sup>6,10</sup>



The platform can predict complications months earlier based on the underlying biology of each unique pregnancy.<sup>6,10</sup>



This creates a new window for moms to act and their doctors to intervene before a complication becomes a crisis.<sup>6,10</sup>

## MIRVIE IS COMMITTED TO EXPANDING WHAT IS POSSIBLE FOR PREGNANCY HEALTH

Today, so many moms have pregnancy complications with no warning or preparation. Soon, with a simple blood test powered by the Mirvie RNA Platform, they will have a window into the health of their pregnancy and their individual risk of complications. This breakthrough will allow them to partner with their pregnancy care team to develop a personalized plan aimed at preventing complications or mitigating their severity before they strike.

Want to learn more about how we are shaping the future of pregnancy health?

Visit [mirvie.com](https://mirvie.com) to discover our landmark research and learn about the brilliant, hopeful future we see for pregnancy health.

VISIT MIRVIE.COM

## About The Future of Pregnancy Health Report

The research was conducted online in the United States by The Harris Poll on behalf of Mirvie among 1,022 U.S. adults (18+) who were either currently pregnant (n=387) or had given birth within the last year (n=655). Data are weighted by size to ensure adequate representation within these groups, and where necessary by education, age, region, income, race or household, marital status, and race (only included for White, Asian and All Other completes). Data were also weighted where necessary by propensity to be online to bring them in line with their actual proportions in the population. The sampling precision of Harris online polls is measured by using a Bayesian credible interval. For this study, the sample data is accurate to within +4.0 percentage points with a 95% confidence level. The survey was conducted September 6-23, 2022.

### About Mirvie

Mirvie is shaping the future of pregnancy health by providing women, expecting parents and their doctors with an early detection window to intervene before unexpected pregnancy complications become a crisis. One in five pregnancies is impacted by complications that lead to lifelong health consequences for expecting parents and babies. The proprietary Mirvie RNA platform uses a simple blood test to reveal vital information about a pregnancy's unique biology and detect complications months before they occur. The idea for Mirvie was sparked by the personal experience of one of the founders whose daughter was born prematurely. Mirvie's team of world-class scientists and entrepreneurs have brought to market category-first, non-invasive tests in both women's health and in early cancer detection, used by millions today. Founded in 2018, Mirvie has raised more than \$90 million in early-stage financing from top-tier investors, including Decheng Capital, Foresite Capital, General Catalyst, GV, Khosla Ventures, and Mayfield. Mirvie is based in South San Francisco, California. To learn more about Mirvie, please visit [mirvie.com](https://mirvie.com).

### References:

- [1]: Cameron, Natalie A et al. "Trends in the Incidence of New-Onset Hypertensive Disorders of Pregnancy Among Rural and Urban Areas in the United States, 2007 to 2019." *Journal of the American Heart Association* vol. 11, 2 (2022): e023791. doi:10.1161/JAHA.121.023791
- [2]: <https://www.who.int/news-room/fact-sheets/detail/preterm-birth>
- [3]: Hoyer DL. Maternal mortality rates in the United States, 2020. *NCHS Health E-Stats*. 2022. DOI: <https://dx.doi.org/10.15620/cdc:113967>
- [4]: <https://www.cdc.gov/media/releases/2022/s0919-pregnancy-related-deaths.html>
- [5]: <https://preeclampsia.org/what-is-preeclampsia>
- [6]: Ngo, et al. Noninvasive blood tests for fetal development predict gestational age and preterm delivery. *SCIENCE*. 2018.
- [7]: Rasmussen, et al. RNA profiles reveal signatures of future health and disease in pregnancy. *Nature*. 2022.
- [8]: Camunas-Soler, et al. Predictive RNA profiles for early and very early spontaneous preterm birth. *AJOG*. 2022.