



Preconception Chronic Disease and Birth Outcomes in Michigan, 2009-2010

What is preconception chronic disease? Why is it important?

Preconception chronic diseases are chronic diseases that women have before they become pregnant. These diseases affect a woman's health before, during, and after her pregnancy.¹ Many preconception chronic diseases influence birth outcomes and the well-being of babies as well.¹

Can negative birth outcomes from preconception chronic disease be prevented?

Yes! Women who get their chronic disease under control before becoming pregnant, and follow guidelines to manage their diseases safely once becoming pregnant, can minimize harmful effects on their babies. Women can get their disease under control by seeing a doctor, then taking prescribed medications and/or following other treatment options provided by their doctor.

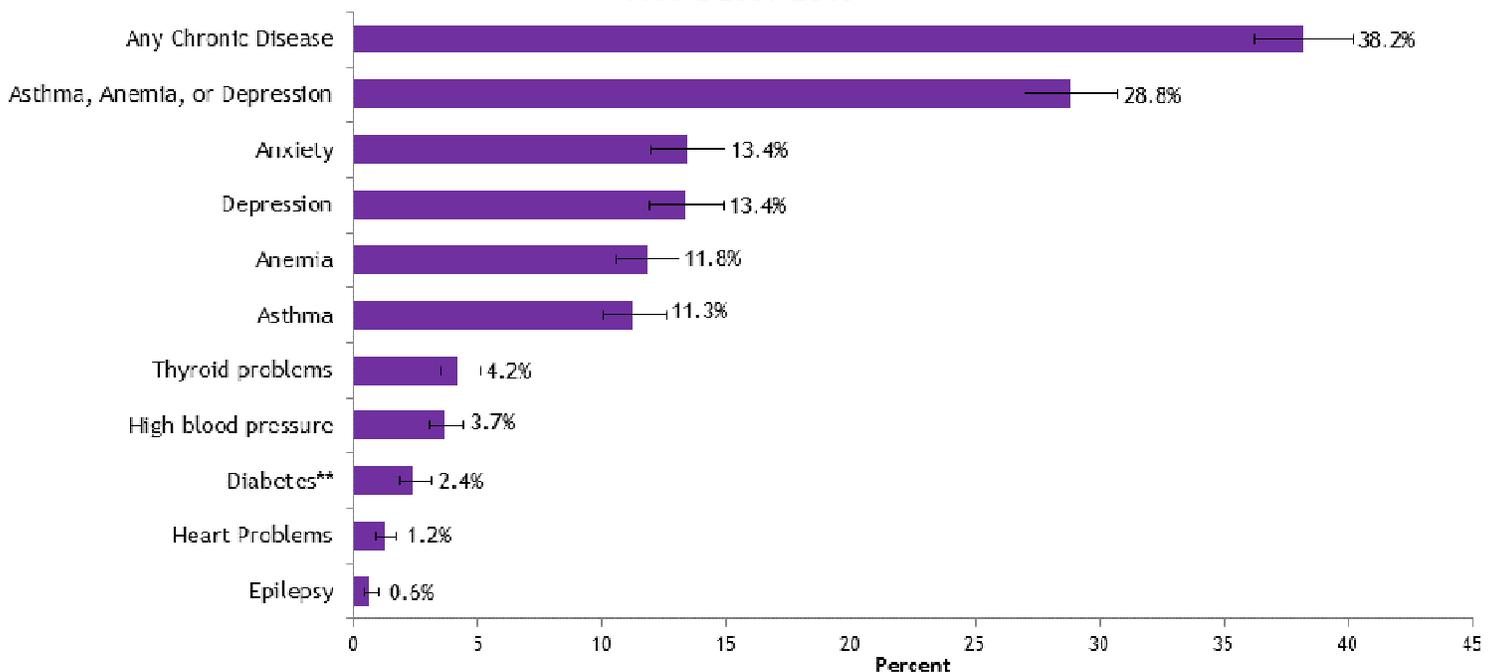
Preconception chronic disease in Michigan, 2009-2010

In 2009 and 2010, about 85,906 women delivering a live birth experienced some sort of chronic disease before they became pregnant. Preconception chronic diseases found by the Pregnancy Risk Assessment Monitoring System (PRAMS) include:

- Asthma
- Anemia
- Thyroid problems
- Heart problems and high blood pressure
- Depression and anxiety
- Diabetes
- Epilepsy

The prevalence of these chronic diseases in Michigan is illustrated in Figure 1. Nearly 2 out of 5 mothers had at least one of the listed conditions before pregnancy.

Figure 1. Prevalence of self-reported chronic diseases 3 months before pregnancy, PRAMS 2009-2010*



*May add to over 100% because women may have more than one chronic disease.

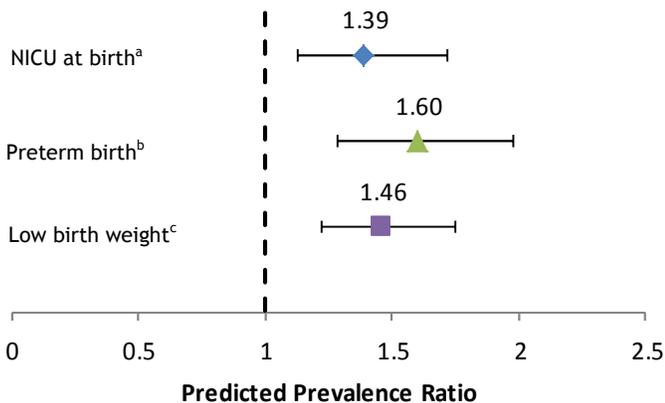
**Defined as respondent ever told by health care worker that she had Type 1 or Type 2.

How is preconception chronic disease related to birth outcomes in Michigan?

According to PRAMS data from 2009-2010, self-reported preconception chronic disease in general was associated with increased risk of several adverse birth outcomes, compared to no report of chronic disease (Figure 2):

- Women with any preconception chronic disease had a 39% higher prevalence of having their babies admitted to a neonatal intensive care unit (NICU) at birth.
- Women with any preconception chronic disease had a 60% higher prevalence of having a preterm birth compared to women without preconception chronic disease.
- Women with any preconception chronic disease had a 46% higher prevalence of having a baby with low birth weight.

Figure 2: Predicted prevalence ratio for birth outcomes in women with preconception chronic disease, compared to mothers without preconception chronic disease



^a No confounders present

^b No confounders present

^c Adjusted for maternal race and education

Three out of every ten Michigan women (28.8%) delivering a live baby could be at higher risk of poor birth outcomes due to asthma, anemia, or depression (Figure 1).

Having asthma before pregnancy may increase the risk of having a premature birth.

- Women who had preconception asthma in the three months before pregnancy had a 59% higher chance of having a preterm birth compared to women who did not have asthma before becoming pregnant.

Preconception mental health may influence the risk of preterm birth in Michigan.

- Women who reported depression during the three months before pregnancy had a 39% increase in the prevalence of preterm birth, compared to those not reporting depression.
- However, PRAMS data did not show any significant associations with birth outcomes among mothers experiencing anxiety three months prior to pregnancy. (Information on symptoms and/or clinical diagnosis were not collected.)

Preconception anemia may increase the risk of having infants admitted to the NICU at birth, preterm birth, and babies with low birth weight.

- Mothers with anemia in the three months before conception had a 45% higher prevalence of infants admitted to the NICU at birth, a 37% higher prevalence of preterm birth, and a 67% higher prevalence of having a baby with low birth weight.

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¹ Centers for Disease Control and Prevention. Recommendations to improve preconception health and health care—United States. *Morbidity and Mortality Weekly Report* 2006; 55 (RR06):1-23.



Suggested Citation:

Zimmerman N, Larder C, Lyon-Callo S, Wahl, R., McKane, P, Bach J. Michigan Department of Community Health; "Preconception Chronic Disease and Birth Outcomes in Michigan, 2009-2010." *MI PRAMS Fact Sheet*, August 2013.

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MI PRAMS is supported in part by CDC grant #1U01DP003131-03. This report does not represent the opinions of the Centers for Disease Control and Prevention.